Payne's rule and the late *o > a shift in Mojeño Ignaciano: A response to Ramirez & França (2019) - or, how (not) to do Historical Linguistics

Fernando O. de Carvalho
Departamento de Antropologia
Museu Nacional, Brasil
https://orcid.org/0000-0002-2115-7416

ABSTRACT: Ramirez & França's (2019) claim that a change *a > o took place multiple times and without any discernible conditioning factor - which the authors present as an explicit counterproposal to a series of claims made in Carvalho & Rose (2018) - is methodologically and empirically flawed. We show here that the supposed evidence from loanwords is artifactual, that the comparison between 18th Guaná and modern Terena rests on an arbitrarily selective and, ultimately, misleading treatment of the relevant sources, and that the claimed ancestor-descendant relationship between Old Mojeño and Trinitario is at odds with other well-established claims about the history of Mojeño dialects, in addition to being an unnecessary and extraneous assumption. Moreover, a lexical stratification of the Mojeño lexicon in terms of basic and less-basic strata shows that the main correspondence favored by Ramirez & França (2019) as the reflex of Proto-Arawakan *a in Mojeño is essentially restricted to nonbasic vocabulary, a finding that vindicates Carvalho & Rose's (2018) interpretation of this pattern as reflecting dialect borrowing or diffusion.
KEYWORDS: Comparative method; Reconstruction; Arawakan languages; Mojeño

RESUMO: A proposta de Ramirez & França (2019) de que uma mudança *a > o ocorreu inúmeras vezes e sem qualquer tipo de condicionamento - hipótese apresentada em franca oposição a afirmações publicadas em Carvalho & Rose (2018) - é problemática sob os pontos de vista empírico e metodológico. Mostramos aqui que a presumida evidência relacionada à adoção de empréstimos é pouco convincente, que a comparação entre o Guaná do século 18 e o Terena moderno baseia-se em uma análise seletiva e enganosa das fontes relevantes, e que a suposição de uma relação de ancestralidade direta entre o Mojeño Antigo e o Trinitário é não apenas uma hipótese desnecessária e que carece de substanciação, como também está em desacordo com outros fatos a respeito do desenvolvimento do Proto-Mojeño. Mais importante ainda, uma estratificação lexical do Mojeño mostra que a correspondência favorecida por Ramirez & França (2019) como o reflexo do Proto-Arawak *a em Mojeño é em sua essência restrita ao vocabulário não-básico, fato que oferece apoio adicional à hipótese de Carvalho & Rose (2018) de que esse padrão de correspondências reflete empréstimo dialetal ou difusão.
PALAVRAS-CHAVE: Método comparativo; Reconstrução; Línguas Arawak; Mojeño

1. Introduction

This paper has as its goal the critical evaluation of some claims advanced by Ramirez & França (2019), henceforth 'RF', in a previous issue of this journal. The specific set of claims addressed concerns the historical phonology of vowels in the diversification of Proto-Mojeño into its descendant varieties and on the diachrony of the Bolivia-Paraná languages more broadly. RF claims that the proposal of Carvalho & Rose (2018), henceforth 'CR', of a late innovation of *o > a in the Ignaciano variety of Mojeño is incorrect, that Ignaciano *a* mostly reflects Proto-Arawakan *a,* and that all Bolivia-Paraná languages, except for Ignaciano, were subjected to a change *a > o. This latter change, moreover, is, in RF's proposal, not a sound change in the technical sense, as it lacks any kind of conditioning and can operate at any time in any of the relevant languages. I will show that these and other claims advanced by RF as a way to back up their interpretation of the relevant correspondences, as well as their more negative remarks on supposed shortcomings of CR, are methodologically unsound and unable to explain some critical patterns of correspondences; in contrast, the alternative proposal on the phonological

history of Mojeño vowels advanced by CR and starkly criticized by RF suffers from none of these limitations. More strikingly, however, is the fact that an explicit consideration of the distribution of Mojeño vowel correspondences across basic and nonbasic layers of the vocabulary provides decisive support for the proposals of CR over those of RF.

The discussion is structured as follows: Section **2** presents one assumption that I share (tentatively) with RF: That the Bolivia-Paraná languages were subject to a diachronic process that yielded diachronic correspondences mapping *certain* instances of (possibly Proto-Arawakan) *a into o. I will then discuss the two opposing views on how this development relates to certain diachronic developments in the vowel systems of the Mojeño varieties: that of RF and that of CR. In **3,** I will show that RF's appeal to loanword adaptation as evidence for a late chronology for *a > o, a core feature of their proposal, is ill-founded, as the bulk of it reflects independent developments restricted to the history of Baure alone among Bolivia-Paraná languages and these, contrary to RF's *a > o change, are plausibly conditioned by contextual elements. I move on to address their direct ancestry claims, showing (section **4**) that RF's statement of a direct, lineal relation between modern Terena and 18th century Guaná - another cornerstone of their proposal for a late *a > o change - is likely incorrect. In **5,** I discuss how similar assumptions about the relation between Old Mojeño and Trinitario (a modern Mojeño variety) are ill-founded as well. More importantly, I show in section **5** that the correspondence between Old Mojeño *a* and Trinitario *o* is, first, relatively infrequent and, second, essentially restricted to vocabulary items having less basic meanings, thus providing further support for CR's claim that this is a minor correspondence originating in dialectal borrowing and loanword diffusion. Finally, section **6** discusses some methodologically problematic aspects of the proposals advanced by RF, such as its incorrect construal of the notion of lineal ancestry relations and the role played by dialect borrowing in linguistic reconstruction, as well as his vacuous appeal to the technical notion of 'drift'. Section **7** is devoted to the conclusions of the paper.

2. Payne's rule and the nature of the problem

For the sake of argument - and because both the author of the present paper and RF seem, to a certain extent, to agree on this - I will assume that Payne (1991) has successfully demonstrated a split of Proto-Arawakan *a into a and o in the Bolivia-Paraná languages, even if the (phonetic) conditions for this split are still not entirely clear. Let us call this 'Payne's rule'. As noted by RF, this rule is inferred from cognate sets where the Bolivia-Paraná languages (or a subset of them, as seen below) show o corresponding to a in most other Arawakan languages. In some *other* cognate sets, however, an identity correspondence showing a in both groups of languages is attested. Table 1 below has a representative set of forms taken from Payne's (1991) own comparative sets, including his reconstructed Proto-Arawakan etyma.[1]

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[1] Phonetic transcription has been adapted from Payne (1991) into IPA conventions.

Table 1. Exemplar evidence for Payne's rule

PA etymon	Terena	Ignaciano	Baure
*ʧina 'woman'	sêno	esena	etón
*ahtse 'tooth'	-ôe	-ahe	-se(r)
*[n]apɨ 'bone'	-ôpe	-ape	-[n]opi
*kaʧi[wi] 'painful'	kotiwe	-kati	-koti
*mapa 'three'	môpoa	mapa	mpo(n)
*ɨma 'husband'	-îma	-ima	-emo
*k/ʧano[apʰi] 'neck'	-ânu	-	ʧano
*aki 'seed'	áke	(t-)aki	esó(ki)
*[m]ina 'heavy'	-ína	-	(ko) [h] íno-
*hanɨ 'wasp'	háne	-	ane

As seen in Table 1, the upper group of forms has Terena *o* matching Proto-Arawakan (PA) *a*, while the bottom set provides evidence for an overlapping *a: a* correspondence. Ignaciano shows *a* everywhere, while Baure presents a more complex picture, with diachronic correspondences being difficult to establish in many cases (e.g., 'tooth'), and with *o* appearing where, on the basis of the cleaner correspondences with Terena cognates, *a* could be expected (e.g., 'husband', 'heavy').

Payne's rule was originally established based on comparative evidence from these three Bolivia-Paraná languages: Ignaciano (a Mojeño dialect), Terena and Baure. Since Ignaciano, otherwise very closely related to Terena and Baure, does not show the effects of Payne's rule - that is, it has *a* matching *a* in the other Arawakan languages - Payne (1991) concludes that the development PA *a > o* operated not at the level of the putative Proto-Bolivia-Paraná ancestor but only later.

The way RF have paraphrased Payne's conclusion seems, however, somewhat misleading. This is what they have to say about it:

> (…) Payne (1991: 472) já tinha observado que o dialeto ignaciano do mojeño tinha conservado a vogal *a do protoarawak melhor que as outras línguas do subgrupo Bolívia. (Ramirez & França 2019: 16)

The dangerous simplification in this way to frame Payne's views is evident from a comparison with Payne's own take on the matter:

> Reflexes of /*a/ are /a/ in most languages. There are many minor reflexes attested by only a few examples. In addition, there are two other important reflexes of /*a/ in Southern Maipuran languages in RES [Resígaro]. Matteson 1972: 171 posited for her 'Proto-Shani' (the parent language for TER [Terena] and BAU [Baure] and my Proto-Southern) that /*a/ has a reflex /o/ in all environments except following/s, h, j, y/. I find some cases of /yo/ in TER (…) and find a few examples where /*a/ remains /a/ in TER (…) The environment I posit for /*a/ remaining /a/ in TER is in certain specific palatalized or high-vowel contexts. The change to /o/ is somewhat similar in BAU, as given below. However, it is not the case that the change to /o/ occurred in the proto-language to TER, BAU and IGN, since IGN does not show the /o/ reflex, but is otherwise very closely related to the other two languages. (Payne 1991: 472)

That is, RF accepted Payne's conclusion that the putative change of *a > o* (whatever its conditioning) did not take place before the unity of the shared ancestor of Baure,

Ignaciano and Terena, Proto-Bolivia-Paraná, was dissolved. Payne's reasoning is appealing: After all, of the three languages making this group, one of them ("otherwise very closely related to the other two languages") shows no effects of this development. However, and this is the critical point, **RF retains Payne's understanding of these correspondences even having at their disposal a richer attestation of the diversity internal to this subgroup**. Of critical importance, Ignaciano is *more closely related* to two other varieties of Mojeño - Trinitario and Old Mojeño - than it is to either Terena or Baure, and these Mojeño varieties do show, similar to Terena and Baure, the effects of the diachronic correspondence *a > o*. It is irrelevant to our purposes to wonder how Payne would have interpreted these same patterns if he had had access to Old Mojeño and Trinitario data. Nevertheless, given that Ignaciano, Trinitario and Old Mojeño are *codialects*, the uniform presence of *a* in Ignaciano has all the hallmarks of a later dialectal development that took place after all Bolivia-Paraná languages where themselves are subject to the (conditioned) development *a > o*.

  RF crucially rejects the latter interpretation. The changed picture created by the inclusion of data from Mojeño varieties other than Ignaciano has taken RF to an interpretation of Payne's rule that can be broken down into two core claims:

(1) Interpretation of correspondences in Ramirez & França (2019)

(1a) **The late innovation claim:** Proto-Arawakan *a* changes to *o* in the *individual* Bolivia-Paraná languages/varieties, not at the (Pre-) Proto-Bolivia-Paraná level.

(1b) **The anything goes claim:** The change, albeit a split of *a* into the diverging reflexes *a* and *o* operates *without any conditioning context, anytime, and affects morphemes in an individual manner*.

The claims in (1) above are presented by RF as if they were *conclusions* that result from inferences based on certain types of evidence. This evidence is of two kinds: Evidence from early written documents on (what they assume are) antecedent stages of the relevant languages (see 2) and evidence from loanword adaptation (see 3):

(2). *Direct ancestry claims in Ramirez & França (2019)*

(2a) 17th century Old Mojeño is a direct, lineal ancestor of the Trinitario dialect, and a comparison of these two stages shows that Old Mojeño *a > o* in Trinitario.

(2b) 18th century Guaná as recorded by Aguirre (1898 [1793]) is a direct, lineal ancestor of Terena, and a comparison of these two stages shows that Guaná *a > o* in Terena.

(3) *Loanword adoption claims in Ramirez & França (2019)*

The adoption of loanwords into a subset of the Bolivia-Paraná languages provides decisive evidence in favor of the late innovation (1b) of the *a > o* development.

  On claim (1b) above it is important to stress once and for all that, despite appearances, it is not a simple adoption or alternative expression of Payne's rule. Payne (1991), as seen above, expresses some ambivalence concerning the proper conditioning of the *a > o* change in Bolivia-Paraná languages, *but he nevertheless assumes that this was a phonetically conditioned sound change*, even if the proper statement of this change

remained elusive at the time of his writing (as it seems to remain until now). RF, on the contrary, claims that no conditioning exists:

> Qual é o contexto fônico condicionante desta deriva *a > o/ʊ*? Parece que não há: essa deriva pode ou não afetar qualquer *a*, e cada palavra tem sua própria história. (Ramirez & França 2019: 23)

In terms of the implied chronology, RF's interpretation of Payne's rule can be depicted as follows, when schematized along a simplified view of Bolivia-Paraná phylogenetic differentiation:
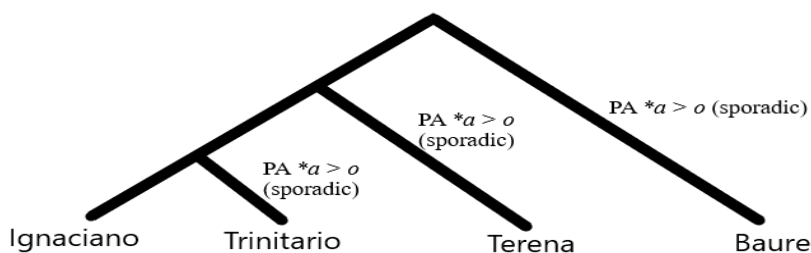

Figure 1. Historical phonology under Ramirez & França (2019)

The most important aspect of the phylogeny above is one that constitutes yet another shared assumption between RF and CR: It has already been stated, but it must be kept in mind *that Ignaciano and Trinitario, as Mojeño dialects, are closer to each other than any is to the other languages of the Bolivia-Paraná subgroup*. As seen above, RF postulates the sporadic innovation of *a > o* in all branches of Bolivia-Paraná *with the exception of Ignaciano*, which would be conservative in retaining the inherited Arawakan low vowel *a* as *a*. Note that by 'sporadic' in relation to RF's account, I mean that the development in question can take place *at any time* in *any word or morpheme* in *any language*. It is, therefore, totally unpredictable and irregular.

Given these properties, RF's study comes at frank and direct contradiction with CR. Note that the latter *is not* a work on the historical differentiation of Bolivia-Paraná languages but only of the Mojeño dialect group. However, CR - by comparing Ignaciano, Trinitario and 17th century Old Mojeño - conclude that Ignaciano is actually innovative in having merged Proto-Mojeño *a* and *o* as *a*, as a result of the change *o > a*. Under this account, Ignaciano offers no evidence whatsoever on the application of Payne's rule, since any *o* eventually reflecting Proto-Arawakan *a* appears secondarily merged with *a* in this variety. Under the CR account, therefore, Payne's rule may have applied at the Proto-Bolivia-Paraná level, only once as a shared innovation of this subgroup (see figure **2** below).
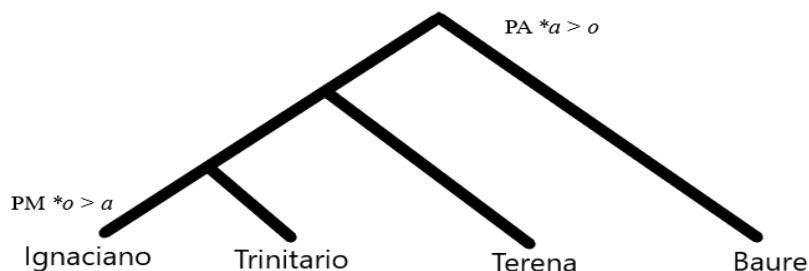
Figure 2. Historical phonology under Carvalho & Rose (2018), with placement of Payne's rule as a Bolivia-Paraná shared innovation

In the remainder of this paper, I will argue that CR are correct, or, better yet, that they offer what is *so far* the best account of the relevant correspondences between the vowels of the Mojeño varieties and that RF have failed, dramatically, in their task of presenting an alternative view.

3. On the presumed loanword evidence for a late chronology of *a > o*

RF presents a total of 24 forms as supposed loanwords in the relevant Arawakan languages. It is apparently the case that, in each and every comparison, a source form with *a* is matched by a borrowed form with *o*, and this presumably shows that Payne's rule has, in fact, applied after the adoption of these loans, which would make sense under the RF proposal (see section **2** above). Of the 24 supposed loans cited by RF, 6 can be excluded as they belong to Ignaciano alone, which shows only *a* and is thus irrelevant to the matter (but their inclusion in the batch no doubt makes the evidence seem 'bulkier' than it actually is). Of the 18 remaining forms, 14 belong to Baure. The language in question has a complicated and still unclear history, including a series of *umlauts* or contextual vowel affections, which many times yield rounded and backed reflexes for unrounded (and front) vowels. Two straightforward examples illustrating distinct processes yielding the same back rounded vowel *o* are (see Danielsen 2007: 52):[2]

(**3**) *Contextual vowel rounding in Baure*

(a) Old Baure *eteno* > Baure *eton(o)*   'woman'

(b) Old Baure *-wejise* > Baure *-wojis*   'hand'

In the set of 14 Baure forms presented by the authors (see Ramirez & França 2019: 14), at least 11 are amenable to a similar (and, arguably, simpler) explanation involving contextual rounding factors, including a rounded vowel acting regressively as a trigger (as in *picaro > pikur*; exactly like (**3**a) above) and the action of labial consonants, as in (**3**b) above, also observed in *camba > kampu, papaya > pop-hi, matico > mutik, caballo > kuwuj, vaca > waku-pi, maestro > muestur, Isabel > suwer* and so on. Finally, in some other cases, the authors' assumption about the loan status of certain forms is doubtful, to say the least, as in the proposed equation of *hacha* 'axe' and *raʃok* 'axe', where the

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[2] The issue of the relation between Old Baure and (modern) Baure will be addressed in section **6** along with the general question of externally imposed chronologies on lects.

prothesis of initial *r-* and the final obstruent *-k* surely require explanation and make the proposal questionable at least.[3]

One concludes, therefore, that the evidence from loanwords, which would show the operation of **a > o* in the diverse Bolivia-Paraná languages, is, however, not only limited to Baure in its essence but also amenable to far more likely alternative explanations that do not involve a very implausible unconditioned shift. These seem to provide no evidence whatsoever for RF's claims.

4. Aguirre's *Guaná* is not a direct ancestor of modern Terena

The first specific claim of a direct ancestor-descendant relationship advanced by RF involves the Guaná language or doculect, as documented in the late 18th century and modern Terena. As mentioned before (section **1**), of fundamental importance for RF's arguments for the late operation of **a > o* in the diverse branches of the Bolivia-Paraná subgroup is the supposed written testimony on late 18th century Guaná where *a* would be found matching modern Terena *o*. Before presenting some comparisons, RF remarked that:

> O vocabulário "guaná" cuidadosamente recolhido por Aguirre (1898), provavelmente elaborado por missionários, mostra claramente que a mudança **a > o* estava então em andamento em tereno. (Ramirez & França 2019: 15).

RF state they interpretation clearly: The comparisons would furnish evidence that the change **a > o* was then taking place in the language.[4]

The main problem with this interpretation is that Aguirre (1898 [1793]) is explicit about the provenance of his Guaná data: *it does not come from Terena speakers*. Aguirre (1898 [1793]:502) has the following to say in his 'Notes on the Guaná language' (bold characters indicating my emphasis):

> También es de notar, que esta lengua de los Chanes ó Uanas ó Vanas, no Guanas, como los llaman vulgarmente, admite y tiene varias diferencias, ya en la pronunciación, ya en la diversidad de voces, porque es general, pues los Chanes, conocidos de esta banda son cinco tolderías distintas que son: Caynocue, que quiere decir: gente que hace frente ó fronteriza; Chaavaraane, de pecho grande; Terenoe, gente de la rabadilla propriamente ó que está la última; Nicatisivoe, comedora de cierta especie de algarroba áspera; **y los Layyanas, que no tiene significación. Esta es mi gente**. Estas dos últimas convienen en la pronunciación y se diferencian de las otras. (Aguirre 1898 [1793]: 502).

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[3] RF's contact etymologies are no more grounded than their internal (Arawakan) ones. In addition to the flawed equation of the forms for 'axe', there are telling cases of claimed adoption of terms for flora and fauna from the local Spanish varieties. Thus, Trinitario *wnono* and Baure *wunun*, both meaning 'duck', are given as loans from (one presumes) Spanish *wanana*. This is a striking claim in view of the fact that RF was prepared originally as a chapter in Ramirez's 2020 'encyclopedia of Arawakan languages', and, in said work, data from Manao (Ramirez 2020: 136), Cariaí (Ramirez 2020: 137) and Marawá and Waraiku (Ramirez 2020: 161) strongly suggest that *wanana* is, in fact, a term of Arawakan provenance, not a Spanish loan.

[4] Note that, under RF's own account this is not a surprising finding, after all. Since their **a > o* follows no phonetic conditioning whatsoever and is not chronologically bound (can take place at any time), we can be sure that it was operating at any given period in the history of any Bolivia-Paraná language. Obviously, any 'prediction' or 'confirmation' based on this account carries very little weight. I also note that asterisk preceding the etymological vowel, which would be strictly unnecessary since it is *attested* (supposedly so) in the Aguirre materials. This is a frequent misuse of established notational conventions in RF's work.

Aguirre is thus as explicit as possible in noting not only that there were differences in the language spoken by the different Guaná partialities but also that the data published together with these notes were sampled from Layana, not Terena individuals. In this dense passage, he even remarks on the fact that the speech of the Layana, as well as that of the Nicatisivoe, differs from those of the other groups, including the Terena (his <Terenoe>).

As we lack any evidence on the distinguishing features of the dialects spoken by the different Guaná partialities or subgroups (see Carvalho 2016), I cannot share RF's certainty (see Ramirez & França 2019: 36) that the Guaná vocabulary of Aguirre is 'obviously identical to Terena', as opposed to, say, showing the hallmarks of isoglosses that separated Terena from other varieties, or even that it comes from a dialect that died out without leaving any living descendant among modern southern Arawakan languages. As far as the testimony of Aguirre himself goes, we have, on the contrary, reasons to believe not only that RF's certainty is misplaced and unwarranted but also that their more specific claim about a lineal ancestry relationship between Aguirre's Guaná and modern Terena is incorrect.

Now, even if one chooses to ignore these explicit observations that cast serious doubts on RF's assumption of direct ancestry, there is another major issue with the RF interpretation of the Guaná vocabulary of Aguirre (1898 [1793]). Ramirez & França (2019: 15), when discussing the supposed diachronic correspondences between Aguirre's Guaná and modern Terena, offer a comparison of the verbs meaning 'to cook' in the two lects, but RF's actual comparison is between a modern Terena verbal *root*, *-ojé-*, and a segmented part of the Guaná verb, which RF present as *aye-*. The reader, which is nowhere told of this segmentation of the original material, remains unaware of the fact that there is, in fact, a correspondence between Guaná *<o>* and Terena *o* in the exact same set, more precisely in the part that has been (silently) excised from the comparison by RF, as shown by a comparison of the full verb forms given in Aguirre's Guaná source, *<Ayecoti>* 'cocinar' (Aguirre 1898 [1793]: 497), and the Terena base form *ojéʔeko* 'to cook'. The reader is unaware, as well, that, unlike the other vocalic correspondences discussed by RF, this one can have a critical role in tilting the scales *against* a direct ancestry relationship between the two lects, as I show now.

As noted by Ramirez & França (2019: 12-13), there is an older, likely Proto-Bolivia-Parana, system of ablaut involving *a* and *o* as the markers of a TAM distinction in verbs, one that is variously described as 'realis - irrealis' or 'factual - nonfactual'. One example is modern Terena *-ojéʔek**o*** 'to cook (realis, factual)' vs. *-ojéʔek**a*** 'to cook (irrealis, nonfactual)', with the ablauting *o ~ a* in bold. Now, the bulk of the forms showing a correspondence between *<o>* in the 18th century Guaná corpus and *o* in modern Terena comes exactly from the 'thematic' suffixes where this TAM-marking ablaut occurs, although none of these comparisons feature in RF's discussion of the Aguirre source. Table **2** presents a series of comparisons pairing Guaná verbs from Aguirre (1793) with their modern Terena equivalents:

Table 2. Correspondence between TAM marking *<o>* in Guaná and *o* in modern Terena

Aguirre (1793)	Modern Terena
<Parechoasi> 'dar'	*-poreʃo-*
(Aguirre 1793: 497)	(Ekdahl & Butler 1969: 46)
<Echoasi> 'conocer'	*-eʃo-a*
(Aguirre 1793: 497)	(Ekdahl & Butler 1969: 8)
<Ayecoti> 'cocinar'	*-oje-ʔe-ko*
(Aguirre 1793: 497)	(Ekdahl & Butler 1969: 42)
<Amecoati> 'oler'	*-omeho-*
(Aguirre 1793: 497)	(Ekdahl & Butler 1969: 40)
<Nzocoati> 'matar'	*-isuko-*
(Aguirre 1793: 497)	(Ekdahl & Butler 1969: 19)
<Tocoati> 'hacer'	*-itúko-*
(Aguirre 1793: 497)	(Ekdahl & Butler 1969: 20)

Under RF's 'explanation', these just happen to be cases where *a > o* took place early enough to show up as such in this early corpus (not a particularly telling account, as *a > o* can apply, or fail to apply, at anytime, anywhere; see footnote **4**). However, this cannot be the case, since the *o ~ a* ablaut system, which is found in Baure and Mojeño in essentially the same form, is certainly older. On an alternative, and preferable account of these correspondences, modern Terena would retain all cases of *o* inherited from Proto-Bolivia-Parana, and the Guaná dialect of the Layana (the one sampled by Aguirre, as noted above) was subject to a merger of **o* and **a* just like Ignaciano but has blocked this merger in exactly those cases where the contrast *o* vs. *a* has a morphological function, thus instantiating a case of morphological or grammatical blocking of sound change (Campbell 1996:78-80). Layana Guaná is thus more innovative than modern Terena is in relation to non-TAM-coding **o*, as these were merged with the reflexes of **a*. It then follows that, unless we are prepared to accept the view that the secondary Layana *a* (< **o*) were changed again back to *o* in modern Terena, we cannot accept the claim that modern Terena is a lineal descendant from Aguirre's Guaná. The alternative account proposed here explains the restriction of Guaná *<o>* : Terena *o* correspondences in verb endings alone, which is entirely accidental under RF's account. What is more important, though, is the fact that it removes yet another layer of putative evidence for a **a > o* change.

5. Old Mojeño and modern Mojeño varieties

As advanced, the core of this paper concerns the different interpretations RF and CR have for the historical phonology of vocalic segments in the Mojeño varieties. The former arrived at their claims from a more general attempt at understanding the history of the entire Bolivia-Paraná subgroup of the Arawakan family, while CR did so within a bottom-up reconstruction of Proto-Mojeño from its attested varieties. We argue, in this section, that the CR proposal of a late, dialect-specific merger of **o* and **a* in Ignaciano only is to be preferred.

The controversy can be described as follows: Carvalho & Rose (2018: 18) identify, in the cognate material of the three Mojeño varieties (Old Mojeño, Ignaciano and Trinitario), the two correspondences in (a) and (b), plus a third correspondence (c):

(**4**) *Three Mojeño correspondences in Carvalho & Rose (*2018*)*:

(a)   Old Mojeño *o* : Ignaciano *a* : Trinitario *o*
(b)   Old Mojeño *a* : Ignaciano *a* : Trinitario *a*
(c)   Old Mojeño *a* : Ignaciano *a* : Trinitario *o*

CR, in their task of reconstructing Proto-Mojeño phonology in a strictly bottom-up manner, consider (a) and (b) the two main correspondences and, given the absence of any context for a split either in OM or in Trinitario (the two languages contrasting *o* and *a*), reconstruct PM **o* and **a*, which appear merged as *a*, after PM **o > a*, in Ignaciano (see Carvalho & Rose 2018 for details). Correspondence (c), which is characterized by Old Mojeño *a* matching *o* in Trinitario, is regarded as a minor correspondence by CR, one that can be explained as an interference of the regular patterns - those whereby Old Mojeño and Trinitario show identity correspondences, as in (a) and (b) - by the force of dialect borrowing or diffusion.

RF disagrees with the above interpretations and reconstructions of CR, claiming instead that the main correspondence is the one in (c), where Old Mojeño *a* matches Trinitario *o*. To strengthen their proposal and to reject CR's interpretation of (c) as a minor correspondence attributable to dialect borrowing, RF claims that correspondence (c) is somewhat primary for being attested in 'basic vocabulary':

> Em 1.3., demos 30 cognatos recolhidos no vocabulário básico, onde a vogal **a** de Marbán corresponde à vogal **o** do trinitario atual. (Ramirez & França 2010: 55)

This interpretation is particularly central to RF proposals for one reason: RF *assumes* that Old Mojeño and Trinitario stand in a direct ancestor-descendant relationship:

> (...) a forma com asterisco (*) sendo a forma registrada pelo padre Marbán no fim do século XVII, que pode ser considerada como o ancestral do mojeño falado atualmente na região de Loreto e de Trinidad (Bolívia)." (Ramirez & França 2019: 6)

> Comparando o Mojeño de Marbán (M), do fim do século XVII, com um dos seus dois descendentes diretos, o trinitário (T). (Ramirez & França 2019: 14)

As discussed in greater detail below (see section **6**), this is a risky assumption, even more so when it is used as a straitjacket within which attested correspondences are interpreted. Note that if this ancestor-descendant relation between OM and Trinitario is assumed as a premise, then the correspondence in (c) is no longer a comparative correspondence but a *diachronic correspondence*, that is, a development *o > a*. The consequences are all too clear, as we have here, by the force of this lineal ancestry assumption, the materialization of another instance of RF's **o > a* change, so important for RF's account (see section **1**). As I show now, however, RF's claims and assumptions can be dismantled one by one, and after that, Carvalho & Rose's (2018) interpretation emerges not only as a better alternative but actually strengthened, as we show in the end when considering the lexical stratification of the correspondences in (**4**) above.

First, note that if we take the Old Mojeño data at our disposal (mainly, Marbán (1702), but see below) at face value, then it is the case that Old Mojeño prosody had quite often word-final accentuation, mainly in verbs but also in nouns, as pointed out by Marbán (1702: 1-2) himself. In terms of the Proto-Mojeño reconstruction advanced by CR, which neatly accounts for the accentuation of Ignaciano and for the diachronic syncope that operated throughout Trinitario, the Old Mojeño accentual system can only be understood as innovative (see Carvalho & Rose 2018 for details). Since Trinitario and Ignaciano, like Proto-Mojeño, do not give any evidence of a rule of word-final accentuation, Old Mojeño is an improbable candidate for a direct, lineal ancestor of either

dialect. To insist on this point is tantamount to believing that, between the late 17th century when Marbán's work was composed and the 20th century attestations of the modern Mojeño dialects, the Old Mojeño oxytone accentual system has reverted again to the Proto-Mojeño state and from that gave rise to that attested in Trinitario. This is not impossible, of course, but adds to the bulky burden of proof that must be met by RF in proposing this alternative scenario and certainly makes for a less simple historical phonology.[5]

A second problem is that RF has ignored another source of data on OM: The vocabulary (and grammatical) information provided by the Jesuit Javier Iraisos (or Iraizos) to Fillippo Salvadore Gilij, which appears in the third volume of Gilij's landmark *Saggio di Storia Americana* and which consists, among other things, of the pioneering demonstration of the existence of the Arawakan language family. There is very little information on Iraisos, except that he was originally from Cochabamba and that he lived in the missions of Moxos until his death in 1763 (Salamanca 2015: 381). Since there is also a map dated to 1717, whose authorship has been assigned to Iraisos as well (Clemente Ferreira 2011: 19), it is a fair bet the language documented by him was almost contemporaneous to the Old Mojeño recorded by Marbán. This is a significant fact in itself, since a comparison of the meager Iraisos source in Gilij to the more extensive documentation in Marbán's materials is enough to show that Old Mojeño was in fact dialectally heterogeneous and, in particular, **that it was so in relation to the correspondences involving the vowels *a* and *o*** (more on this below). This is as direct as possible, a confirmation of Carvalho & Rose's (2018) two-pronged claim that (a) OM was dialectally heterogeneous and (b) at some of the dialectal isoglosses involved *a* in one or more dialects matching *o* in one or more dialects. Before tackling the vocalic correspondences more directly, it is interesting to note, in view of the preceding discussion on the derived nature of Marbán's OM accentual pattern (a finding that complicates an interpretation of this lect as a direct ancestor of modern Trinitario), that the two OM sources differ in terms of the placement of accentual marks, as shown in Table **3**.

Table 3. Accentual mismatches in the two Old Mojeño sources

	Marbán	Iraisos
mouth	*<nuhacà>*	*<nujàca>*
tongue	*<nunenê>*	*<nunène>*
path	*<achenè>*	*<accéne>*
bird	*<cayurè>*	*<caiùre>*
rain	*<tiquibó>*	*<tichíbo>*
sun	*<saachê>*	*<sácce>*
moon	*<cohè>*	*<cóje>*
white	*<tihapú>*	*<tijàpu>*
red	*<tizí>*	*<tìsi>*
canoe	*<pacuré>*	*<pacùre>*
tobacco	*<sabarè>*	*<sabàre>*

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[5] Note that the PM accentual pattern reconstructed in Carvalho & Rose (2018) is supported by more than the account it offers of the development of the Mojeño lects, including the widespread syncope processes in Trinitario. In a broader comparison of Bolivia-Paraná languages, Carvalho (2018: 412) shows that the PM accentual pattern offers a precise account for a series of correspondences involving the affrication of *ts* in Proto-Mojeño (see Carvalho 2018: 412). Other external evidence is discussed in Carvalho (2021), where the PM accentual patterns in agreement with Carvalho & Rose (2018) help accounting for a process of vowel loss (aphaeresis) in Terena (Carvalho 2021).

Taken at face value - that is, assuming that the accentual marks or diacritics in the OM forms in Table **3** truly represent indications of word-level accentuation - the Iraisos data indicate a pattern of accentuation that is entirely in line with the pattern reconstructed for PM in Carvalho & Rose (2018) and that differs, as mentioned above, from the mainly oxytone pattern reported by Marbán for his OM materials. This is yet another layer of evidence in favor of the idea that OM was dialectally heterogeneous and is entirely consistent with an interpretation alternative to that favored by RF: That Marbán's OM may constitute a variety of Mojeño that has left no attested descendants among modern Mojeño varieties (see section **6** for further discussion of direct ancestry claims and the comparative method).

Setting aside, however, all these difficulties, it may be relevant to pause for a moment and look at the purely phonological problem of reconstructing from the correspondences in (**4**), whose existence is accepted both by CR and by RF. As anticipated, RF is particularly certain that a correspondence matching Old Mojeño *a* to Trinitario *o* is an important aspect of the *vertical* relationship between Mojeño lects, and not, as claimed by Carvalho & Rose (2018), an interference caused by dialect borrowing, and the asserted exemplification of this correspondence by basic vocabulary is deemed crucial by the authors. Since the claimed attestation of said correspondence in 'basic vocabulary' is of pivotal importance for RF's arguments, a detailed discussion of this is in order.

In RF's view, Carvalho & Rose's (2018) statement that the correspondence between Trinitario *o* and Old Mojeño *a* (= (**4**c)) is a *minor* correspondence in comparison to the identity correspondences for **o* and **a*, which amounts to saying that it is relatively less frequent and is not instantiated in more basic layers of the vocabulary, is essentially incorrect (see also section **6** of the present paper). In contrast, RF asserts that "it is very common in the entire (sic) Mojeño lexicon" (Ramirez & França 2019: 54)[6] and claims to have shown, in section 1.3 of their paper, evidence from "30 cognates gathered from basic vocabulary" for the basicness of this correspondence. In addition to not offering any precise figures showing that the correspondence is "very common" in the "entire Mojeño lexicon" (a difficult notion in itself), it turns out, upon closer examination, that RF has a peculiar notion of what constitutes basic vocabulary. The 30 Old Mojeño-Trinitario comparisons showing OM *a*: Trinitario *o* given in Ramirez & França (2019: 15), which they describe as involving 'basic vocabulary' include the following meanings (Portuguese labels of the original, followed by English translations): 'testa' (forehead), 'lábio' (lip), 'pênis' (penis), 'irmão' (brother), 'arco-íris' (rainbow), 'lago' (lake), 'noite' (night), 'branco' (white), 'doer' (to hurt), 'voz' (voice), 'esperar' (to wait), 'remo' (oar/paddle), 'jibóia' (Boa snake), 'caracol' (snail), 'flecha' (arrow), 'orelha' (ear), 'defecar' (to defecate), 'avô' (grandfather), 'ave' (bird), 'rio' (river), 'beira' (edge), 'frio' (cold), 'azedo' (sour), 'velho' (old), 'soprar' (to blow), 'cerca' (fence), 'vassoura' (broom), 'vespa' (wasp), 'certa palmeira' (a kind of palm tree), 'ambaúba' (ambaúba, a tree species).

Right from the outset, 15 of these meanings can be excluded as not being within any known basic vocabulary list: 'a kind of palm tree', 'ambaúba', 'broom', 'fence', 'boa snake', 'oar/paddle', 'arrow', 'voice', 'rainbow', 'snail', 'penis', 'forehead', 'lip', 'edge', 'ear hole'.[7] If one looks in a more detained manner to the meanings present in any of the

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[6] In the original: "(…) quando se considera o léxico mojeño inteiro, ela então torna-se extremamente comum" (Ramirez & França 2019: 54).

[7] See that although RF use in their list the gloss 'ear' ('orelha'), the forms appearing under this gloss, Trinitario <*giño*> and Old Mojeño <*nuquiña*>, actually mean 'ear hole' ('oído'), and not 'ear', which are Trinitario <*choca*>, Old Mojeño <*Chocarè, nuchoca*> (Marbán 1702: 462, 589; Gill 1993: 29). This indicates the existence of other, possibly undetected semantic problems in the way RF has amassed its list

known basic vocabulary lists, such as 100 first items of the Leipzig-Jakarta list (Tadmor et al. 2010), Swadesh's 100 items list, Dolgopolsky's list (Dolgopolsky 1986), the ASJP 40 items list (Holman et al. 2008), or Lohr's 61 basic vocabulary list (Lohr 1998), the following meanings can also be excluded: 'wasp', 'grandfather', 'brother', 'rainbow', 'to hurt', 'lake', 'to wait', 'river'. Of the total set of 30 comparisons that RF claim to belong to a basic vocabulary stratum, only seven remain as represented in at least one published and empirically supported proposal for a list of basic meanings: 'white', 'bird', 'defecate', 'to blow', 'old', 'night', and 'cold'.

We can, however, do better than RF. The latter basically *assert* the basic character of a set comparisons of *unsourced* forms, seeing in this support for what they claim is, in some unclear sense, a main correspondence.[8] I have examined a list of cognate sets for 214 basic and nonbasic meanings across the two relevant Mojeño varieties (Old Mojeño and Trinitario alone, as Ignaciano, showing *a* throughout, is irrelevant for addressing the status of the correspondences in (**4**) above). The meanings sampled represent a variety of semantic domains and were culled from a variety of basic meanings lists, including the 100 first items of the Leipzig-Jakarta list (Tadmor et al. 2010), the Lohr list of 61 basic glosses (Lohr 1998) and the list of basic meanings of Aharon Dolgopolsky (Dolgopolsky 1986). Since our goal is that of assessing the distribution in of the correspondences in (**4**) in Trinitario and in Old Mojeño, only meaning glosses for which cognate elements can be found for these two lects were included. The reader can examine the list by him/herself (see **Appendix**), and doing so reveals that the following meaning glosses are found for each of the three correspondences in (**5**) (glosses found in basic vocabulary lists are highlighted in bold):

(**5**) *Glosses instantiating each of the three correspondences under discussion*

(a)   TRIN *a*: OM *a*

Mouth; Jaw1; Jaw2; **Ear**; **Thigh**; Shin; Tears; Egg; Animal; Tapir; Wasp; **Sky**; **Light**; **Sun**; **Shadow/shade**; **Stone**; Mud (white); **Ashes**; **Name**; **Hard**; **Black**; **New**; **Go**; **Hear**; **Grind/crush**; Arrow; Garden; Tobacco; **Person**; Husband; Father; Sibling, older 1; Son/Daughter; Sibling, younger; **3.SG.M. PRO**; **What**; **Two**; **Over**.

(b)   TRIN *o*: OM *o*

Body; Face; Eyelashes; **Tooth**; **Hair**; **Ear**; **Arm**; **Fingernail**; Throat; Rib; Chest; **Stomach**; **Liver**; Waist; **Skin**; **Bone**; **Fish**; Pet; Animal; **Wing**; Peccary; Deer; Tapir; **Snake**; Cayman; Monkey; **Sky**; **Wind** (northern); **Wind** (southern); Rainbow; **Moon**; **Rain**; **Smoke**; Fog; Cloud; Earth; **Soil**; **Big**; **Heavy**; **Bitter**; **Black**; Yellow; **Thick**; Be/stay; **Go**; **Run**; **Fall**; **Eat**; **Drink**; Sing; **Cry**; Bathe; **Know**; **Know2**; **See**; **Hear**; Fear; **Give**; **Take**; Steal; **Say**; Weed out; **Die**; **Hit/beat**; **Bite**; **Kill**; Urinate; **House**; Nest; Bow; Village; Axe; **Root**; **Leaf**; Forest, Maize; Sugarcane; Woman; Wife; Mother; Man; Young man; **Child**; Sibling, older1; Sibling, older2; **One**; **Three**; **Not**; **Yesterday**

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of supposed lexicostatistical (semantically matched) cognates.

[8] See that the usual differentiation in historical linguistics between *main* or *principal* sound correspondences (those resulting from the regular reflexation of given proto-phonemes, even if conditioned), and *minor* correspondences, that usually result from interfering factors such as analogy, borrowing or other, sporadic developments, makes little sense under RF's peculiar methodological assumptions. Given that RF operate with a 'change' *o* > *a* that can operate without any conditioning factor, at any point in time and anywhere, the distinction breaks down and it is not even clear what the reasons were behind their selection of (c) in (**4**) as the main correspondence. As shown ahead, RF's concerns with 'basic vocabulary' have been merely rhetorical.

(c)   TRIN *o*: OM *a*
        Forehead; Lip (lower); Ear hole; Shin; **Bird**; Lake; River; **Night**; Mud (white); Painful; Acid/sour; **Heavy**; **Old**; White; Canoe; **Child**.

As shown in table **4** below, the correspondence having Trinitario *o* matching Old Mojeño *a* (i.e., correspondence **4**c) has close to a third of its supporting sets contained in any of the basic meanings lists considered, while the identity correspondences for PM **o* and **a* (i.e., correspondences **4**a, b) have more than half of their supporting sets in glosses that belong into one or more than of the same lists of basic meanings.

Table 4. Proportion of sets in basic meaning lists for each correspondence

	Total number of sets	Number of sets in basic vocabulary	Proportion of sets in basic vocabulary
TRIN *o* : OM *o*	89	49	55%
TRIN *a* : OM *a*	38	21	55%
TRIN *o* : OM *a*	16	5	31%

The total number of forms showing the correspondence of Trinitario *o* to Old Mojeño *a* is much less than the other two, and the *proportion* of glosses featuring this correspondence, which can be plausibly deemed as part of the 'basic vocabulary', is also much smaller: While more than half of the glosses featuring the identity correspondences Trinitario *o*: Old Mojeño *o*, and Trinitario *a*: Old Mojeño *a*, are found in basic vocabulary items, only a third of the forms instantiating the correspondence favored by RF belong to the same basic layer of vocabulary.[9] This fact not only delivers a fatal blow to RF's assumption that the correspondence of Trinitario *o* to Old Mojeño *a* is somehow 'primary' due to its attestation in items with "basic meanings", as it is also entirely consistent with CR's claim that this correspondence is best explained as the result of dialectal diffusion.

Additionally, supportive of Carvalho & Rose's (2018) account is the fact that evidence for dialectal variation along the lines of these correspondences is evident in a comparison of the two Old Mojeño sources. Thus, while Marbán has a root for 'hand' with *a* (<*nu-baupê*> 'Mano'; Marbán 1702: 375), the Iraisos data have *o* instead (<*nu-bòu*> 'Mano'; Gilij 1780: 371), and this same *a: o* correspondence between the two lects appears elsewhere, as in the form for 'child', with Marbán (1702: 289) <*amoya*> 'Niño o niña', and Iraisos <*amòjo*> 'Bambino' (Gilij 1780: 367). Added to the evidence just considered on the less basic character of the correspondence matching Trinitario *o* to (Marbán's) Old Mojeño *a*, these facts are more than enough to provide a decisive vindication for CR's interpretation of correspondence (**4**c) as being the result of dialectal borrowing. I conclude that CR's interpretation of the relevant correspondences (see section **1**), in terms of a late merger of PM **a, *o > a* in Ignaciano, only remains the best account of the relevant correspondences.

6. Methodological epilogue

Many of the claims and arguments offered by RF in favor of their own proposals and, often, against the views expressed by CR, are marred by a series of fundamental methodological misconceptions on how to conduce historical linguistic research within the purview of the comparative method. Since the first author of RF is an influential linguist whose views, in particular on Arawakan languages, are often taken as

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[9] We have deemed it unnecessary, in view of the manifold problems in RF's account discussed here, to provide an explicit, statistical assessment of the significance of these differences.

authoritative by researchers whose expertise lies elsewhere, it is necessary to seize the opportunity and, in this closing section, to critically expose these shortcomings.

Mischaracterizations of the proposals advanced by CR are found throughout RF's piece. Consider, for instance, what the authors have to say on the Carvalho & Rose (2018) reconstruction of a palatal nasal stop *ɲ for PM, where RF claims to have spotted yet another problem:

> Os autores afirmam também que *ɲ pode ser reconstruído para o protomojeño. Aqui há um erro de lógica grave: o fato que ɲ seja um fonema em ignaciano, em trinitario e em Marbán (i.e., com oposição e pares mínimos n/ɲ) não significa necessariamente que ele estava presente em protomojeño. (Ramirez & França 2019: 54)

RF's claim that the palatal nasal was not *necessarily* present in Proto-Mojeño is, of course, trivially correct. More to the point, however, a reading of the relevant section of Carvalho & Rose (2018: 12-14, section 3.1) shows that the modalizer 'necessarily' **is nowhere employed by CR**, which makes RF's observations a vacuous assertion aimed at a strawman characterization of CR's claims. Nor is it the case, as RF suggests, that a palatal nasal stop *ɲ is reconstructed for PM based simply on the fact that the inventories of all three Mojeño varieties under comparison include this element. The reconstruction is based, of course, on regular correspondences involving the reflexes of PM *ɲ and its contrasting segment within the set of coronal segments in the nasal series, PM *n, in all three varieties. Moreover, the same correspondences are attested in palatalizing contexts (adjacent to the PM vowels *i and *e), where one could expect the contrast to be neutralized in favor of a palatal articulation. Finally, the reconstruction is also based on parallels external to the Mojeño lects, such as PM *-kiɲo 'ear hole' vs. *-eɲo 'mother', in comparison to Terena -kêɲo 'ear hole' vs. -êɲo 'mother' (see Carvalho & Rose 2018: 14).

RF also further states that CR applies the comparative method 'simplistically', projecting a protosegment for every correspondence attested (Ramirez & França 2019: 54). Again, this hardly merits any discussion, as a simple reading of Carvalho & Rose (2018) will show that this is not the case, most obviously in the case of the reconstruction of phonological splits (see Carvalho & Rose 2018: 30-32 for the split of PM *k into k and ç in Trinitario), which, of course, depends on projecting *two* correspondences to a *single* proto-segment.

Another take by RF, which is, again, revealing of a limited understanding of the methodology of historical linguistic investigation, consists of a strongly critical evaluation of CR's invocation of dialectal borrowing as a way to deal with the minor vocalic correspondence involving Trinitario and Old Mojeño, a proposal that is regarded as *ad hoc* by RF (Ramirez & França 2019: 53-54). Far from being a sleight of hand aimed at salvaging a pet hypothesis, the idea that instances of dialect borrowing are revealed by correspondence patterns that cannot be accounted for as the normal reflexes of the relevant proto-segments, or by analogical modifications, is, in fact, so fundamental to the method that it is the stuff of textbooks (e.g., Campbell 1999: 198-200) and is actually enshrined in the century-long controversy (more apparent than real; see Labov 1994: 472-476) between dialect geography and the neogrammarian foundations of the comparative method. Sound change, as defined by the neogrammarians and as a pivotal element of the comparative method, operates regularly *within a dialect*, exceptions to regular sound change being one of the ways dialectal diffusional phenomena can be identified in the first place. One could hardly improve on the authoritative formulation of Hermann Paul:[10]

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[10] In the original: "Wenn wir daher von konsequenter Wirkung der Lautgesetze reden, so kann das nur heissen, dass bei dem Lautwandel **innerhalb desselben Dialektes** alle einzelnen Fälle, in denen die gleichen lautlichen Bedingungen vorliegen, gleichmässig behandelt werden. Entweder muss also, wo früher

> When we speak of systematic effect of sound laws, we can only mean that given the same sound change **within the same dialect** every individual case in which the same phonetic conditions are present will be handled the same. Therefore, either wherever earlier the same sound stood, also in the later stages the same sound is found or, where a split into different sounds has taken place, then a specific cause – a cause of a purely phonetic nature like the effects of surrounding sounds, accent, syllabic position, etc. – should be provided to account for why in the one case this sound, in the other that one has come into being. (Paul 1880: 69; translation and emphasis ours)

Therefore, dialect borrowing, similar to analogy and regular (phonetically conditioned) sound change, is part of this interlocking edifice first erected by the neogrammarians and later perfected in the 20th century, which we call 'the comparative method'. It is not surprising that RF cannot make any sense of the notion of dialectal borrowing, as they operate with a "sound change" that lacks any regularity at all, an aspect of RF's work to which we now turn.

It would be needlessly tiresome, if not perverse, to discuss here in depth why RF's proposal of the *a > o* "sound change", unbounded as it is by linguistic or chronological factors, amounts to a pre-19th century approach to language comparison. RF's attempt to assign some respectability to their proposal by christening it as a case of "drift" (*deriva*, in the original) simply does not work as intended. Presumably, their vacuous assertion that *a* can shift to *o* at any time in any of the Bolivia-Paraná languages is thought of as parallel to, say, the independent occurrences of umlaut in Germanic languages (other than Gothic), the 'conspiring' developments deriving open syllables in Slavic, or syllable reduction in Cariban languages. Germanic umlaut is, in fact, the example discussed by Sapir (1921: 141-158) in what is arguably the first published exposition of the concept of drift under this label, and a closer look at Sapir's original presentation will reveal the vacuous nature of RF's appeal to this notion. First, as duly noted by Sapir (1921: 149), phonetic or phonological drift describes a pattern in the occurrence of *regular* sound changes, or at least of changes that are recognized as a result of applications of the comparative method, thus relying seriously and unequivocally on the assumption of the regular character of phonetically conditioned sound change.[11] Sapir (1921: 143-144) notes, for instance, that the "coloring" of a stem vowel such as *o* or *u* by a suffixal front vowel, the phonetic precursor of the umlaut chain of events, was a regular sound change. This means that merely applying the label 'drift' to a proposed development that lacks the hallmarks of a regular sound change will not, in any sense, rehabilitate this proposal.[12] Second, Sapir (1921: 150-158) notes, again, correctly that drift denotes neither a *type* of language change nor an explanatory principle but *a pattern in need of explanation*, for which linguists have come up with many alternative proposals. In this regard, there seems to be general agreement that 'initial conditions', of a phonetic, phonological or morphosyntactic nature, in a given ancestral language prompt convergent yet independent developments in descendant languages well after the dissolution of the original dialect

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einmal der gleiche Laut bestand, auch auf den späteren Entwicklungsstufen immer der gleiche Laut bleiben, oder, wo eine Spaltung in verschiedene Laute eingetreten ist, da muss eine bestimmte Ursache und zwar eine Ursache rein lautlicher Natur wie Einwirkung umgebender Laute, Akzent, Silbenstellung u. dgl. anzugeben sein, warum in dem einen Falle dieser, in dem anderen jener Laut enstanden ist."

[11] It is telling, in fact, that Sapir's (1921) classical discussion of the concept of drift takes place as part of his more general discussion of 'sound laws'.

[12] The reader should remember at this point that RF's proposal that the putative *a > o* change lacks any kind of conditioning does not rest on a difficulty of uncovering the correct conditioning factors, a position that leaves it open as a possibility that at some point in the future these conditioning factors may be in fact discovered (this is Payne's position on the matter, as seen in section **1**). RF believe, instead, that the change is essentially unconditioned by any factors.

linkage (see Greenberg 1957: 46; Blevins 2004: 297-299).[13] In the specific case of the Germanic umlauts, Sapir (1921) notes that the fixation, in the first stem syllable, of the once mobile Proto-Indo-European accent in the Germanic languages set the conditions for the weakening of suffixal syllables, the second necessary step in the path to the system of morphologically relevant stem vowel alternations observed in the late Germanic languages. To the best of our knowledge, there is no parallel proposal for the development postulated by RF. In sum, the fact that no 'facilitating conditions' (let alone, conditioning) for the operation of the *a > o* shift is at any point established by RF (conditions that, one assumes, were not operative in the history of Ignaciano) adds to the impression that calling it a *drift* is just a wordplay, an ill-conceived approach to salvage what is in essence an oversimplistic account of a complex or messy pattern of correspondences.

A core part of the arguments leveled by RF against diverging views of the historical phonology of Bolivian Arawakan languages is the accusation that studies such as Carvalho & Rose (2018) have misconstrued the relation between attested lects. According to RF, these studies have ignored the fact that OM and Trinitario stand in a relation of ancestor (OM) and direct or lineal descendant (Trinitario). Not surprisingly, these considerations have played a central role in RF's effort, as discussed in sections **4** and **5** above. The general methodological lesson is expressed by the authors as follows:

> (…) em geral, é arriscado reconstruir línguas sem considerar suas etapas anteriores, especialmente quando fontes escritas estão disponíveis. (Ramirez & França 2019: 6)

> [(...) in general, it is risky to reconstruct languages without taking into account its antecedent stages, especially when written sources are available]

The crucial element above is, clearly, the expression '*etapas anteriores*' (antecedent stages), which illustrates the *assumption* that specific lects are direct ancestors of specific modern languages or varieties. That is, RF starts from the assumption that certain relations of lineal, direct ancestry exist between lects, as if these relations were trivially established by the relative dates of the existing documents and by the rough geographic superposition of the relevant populations. From this, any linguistic interpretation of the comparative patterns is subjected, or, better yet, *constrained*, by the lineal ancestry assumption. Moreover, RF show a lot of confidence, which is usually lacking even in researchers of well-documented historical periods and regions, and claim, peremptorily, that dialectal mixture involving the "O-dialects" and "A-dialects" of Old Mojeño is a "bizarre" idea (see Ramirez & França 2019: 54). At this point, after the discussion of the differences between the two existing sources on Old Mojeño in section **5** and of the relatively infrequent correspondences that involve, plausibly, mixing of "O-dialects" and "A-dialects", the reader is convinced, I suppose, that no reasonably cautious researcher could so confidently put forward an assertion such as this.

What RF seem to ignore is that even in the best cases - that is, of those language groups for which copious attestation of earlier stages exist - it is very difficult to impose such external constraints on the chronology, and it is not clear that, even when matters are not *that* difficult, that this is a productive move. The case of the Romance languages - for which, supposedly an attested ancestor exists - is of paramount importance in showing that applying RF's methodological guideline is difficult, even in such a well-documented case. It is well known that the usual assumption of a straight, linear ancestor-descendant relationship between classical Latin, Vulgar Latin and Proto-Romance is too

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[13] Sapir himself acknowledges that "(…) These dialectic parallels cannot be accidental. They are rooted in a common, predialectic drift" (Sapir 1921: 149).

simplistic. Hall (1950) pointed out certain aspects (as in the inflection of *cuius, -a, -um* 'whose' as an adjective) in which Classical Latin, which lacks this feature and only has invariable *cuius*, is more innovative than Proto-Romance, which retains this conservative feature attested only in older stages of Latin, a finding that makes it impossible to assume that Classical Latin is the direct ancestor of modern Romance languages. Classical Latin is then best considered either as an acrolect (a socially differentiated codialect of the vernacular Proto-Romance) or as a sister dialect of it.[14] In view of these uncertainties, the course of action for many modern Romanists has been to recognize that, although Classical Latin has an irrevocable place for comparison within Indo-European at large, it is far from clear that in relation to its presumed descendants, that is, within the purview of Romance etymology, forms from Classical Latin can be taken at face value as Proto-Romance etyma. In fact, Classical Latin seems to be more often than not simply taken as another witness, much like attested Romance languages, with Classical Latin properties being reconstructed for Proto-Romance only in those cases these constitute archaisms or retentions not found elsewhere (see Dworkin 2016 and references therein, Kümmel 2016 for similar issues in another Indo-European branch, Indo-Iranian).

Outside of the Indo-European domain but still within western Europe is the case of modern Basque and the older onomastic corpus of Aquitanian. As noted by Campbell (2018):

> Although the attestations of Aquitanian are sufficient to confirm that modern Basque and Aquitanian are connected in some way, they also show differences from Basque sufficient to suggest the possibility that Aquitanian is not Basque's direct ancestor (…) that possibly Aquitanian and Basque are sister languages representing two branches of an original proto-language. (Campbell 2018: 2)

The surest way to proceed whenever chronologically distant yet clearly related lects are attested is to *evaluate* the hypothesis that these lects stand in an ancestor-descendant relationship on the basis of the available data. Even so, in many cases, this cannot be established, or rejected, on a permanent basis, and what the comparative method can do, in fact, is tell us which structures, elements, patterns or forms (regardless of when they were attested) are *primitive* and which are *derived*. Moreover, resolving the possibly unsolvable issue of whether chronologically distinct lects do or do not stand in an ancestor-descendant relationship is in no sense a prerequisite to the proper application of the comparative method, which is not required to first determine which lects are ancestral and which are derived *before* its application, and this is true, *contra* RF, in Europe, as it is in the Americas. No one has, for instance, waited until a credible lineal descendant of Classical Nahuatl was found to engage in comparative historical work on Uto-Aztecan languages; the work is done, and Classical Nahuatl is simply entered as another language to be compared (e.g., Campbell & Langacker 1978).

On a more general methodological level, the whole idea, so dear to RF, of externally imposing chronological relations misses the crucial point that *ancestor-descendant* relations, as a special kind of *relationship*, are derived from applications of the comparative method - as opposed to acting as constraints on its application. This point is raised in a typically concise manner by Henry Hoenigswald:

> The comparative method has one rather paradoxical use which is based on the following consideration. Let two related languages, A and B, of unspecified (relative) chronology be given. By applying the comparative method to all observable correspondences, we obtain a

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[14] Additionally, as discussed by Hall (1950), the traditional identification between Proto-Romance and Vulgar Latin (as attested, say, in the epigraphic corpus) is difficult as well.

reconstruction of their common ancestor X. In the most general case, as we know, X is different from both A and B, both A and B having gone through their respective innovations. It is, however, possible that only one, say B, has innovated in any way. We know this to be the case whenever X is found to be identical to A (except for the choice of phonological symbols and the like). Since change is, however, a never-ceasing condition, this must mean that A is older than B and that, specifically, A is the ancestor or 'older stage' of B. Thus, contrary to what is often held, *relationship is a more primitive notion than descent; descent is a special case of relationship, discoverable by the comparative method.* Nor is this an abstract formulation: actual controversies on the subject of direct and collateral descent (e.g., on whether the Romance languages are or are not daughter languages of Latin as known from the documents) can be shown to have been argued on these very grounds" (italic ours). (Hoenigswald 1973: 60)

In a related manner, although in a discussion of separate issues, Joseph (2004: 54) notes that claims about lineal relationships between linguistic forms are not given beforehand or based on the chronological or other external relations between documents but only as a result of the application of the comparative method, that is, with the aid of regular correspondences. What truly matters then is not the fact that Old Mojeño was attested three centuries before Trinitario, but what is linguistically innovative/derived or archaic/retained about their differences - and constraining the analysis by assuming from the start that Old Mojeño is less innovative (and, hence, that Old Mojeño *a* matching Trinitario *o* implies a diachronic correspondence *a > o*) is ill-advised, to say the least. Moreover, we saw in section **5** that some evidence suggests that the accentual system of Marbán's Old Mojeño is *more innovative* than that of the modern Mojeño lects, a finding that, if true, would constitute a definitive, fatal blow to RF's assumed lineal relationship.

The attentive reader might remember that these same considerations played a role back in section **2** when we established the derived nature of certain changes in (modern) Baure by reference to Old Baure. The core issue here is that contrary to the way RF conceptualizes the relation between Old Mojeño and Trinitario, it is not necessary to weigh in on the question of whether Old Baure is or is not a direct ancestor of modern Baure. The reasoning only demands that, in a comparison of Old Baure *eteno* 'woman' and modern Baure *eton(o)* 'woman', the Old Baure form stands for a more conservative pattern, one presumably reconstructible for Proto-Baure. That is, even if we reject, *ex hypothesis*, the assumption of a direct ancestry relation, it is clear that *eteno: eton(o)* can be promptly understood as reflexes of **eteno*, with contextual rounding of medial **e* triggered by the following **o* (a form of 'labial umlaut' or 'rounding harmony'), and that the external evidence from Proto-Mojeño **eseno* 'woman' (Carvalho & Rose 2018: 47) provides additional support for this.

7. Conclusions

A thorough critical evaluation of the rather extensive and ambitious paper authored by RF would have a lot to dwell on, including the massive amount of references ignored by the authors (most notably the extensive work published by Françoise Rose on the Trinitario variety of Mojeño), their nonstandard use of terminology and notation (such as the use of asterisks for attested forms), and the almost jaw-dropping fact that forms from 7 or 8 different Arawakan languages are presented without any clear, specific reference to sources, unless these happen to come from pre-20th century materials, which, as we saw in section **4** in relation to Aguirre's (1793) Guaná, RF often approach without the necessary rigor.

I have opted, however, to focus on a narrower set of claims. I have argued, in sum, that none of the criticisms leveled by Ramirez & França (2019) against the picture provided by Carvalho & Rose (2018) of the historical phonology of vowels in the diversification of Proto-Mojeño stands a closer scrutiny and that much of their alternative

proposals suffer from innumerable empirical and methodological drawbacks. The idea that a (thus far poorly understood) conditioned shift *a > o characterizes the diversification of the Bolivia-Paraná Arawakan languages, a hypothesis first advanced by Payne (1991) on tentative and limited grounds, still stands. However, RF's idea of sporadic change that can apply at any time in any language to any form is, first, unsupported by the arguments presented by them (sections **4** and **5**) and depends on a series of misunderstandings of the basic operation of the comparative method (section **6**). For the phonological diversification of the Mojeño dialects specifically, CR's idea of a late unconditioned merger of PM *o and *a in Ignaciano and their claim that the correspondence of Old Mojeño a to Trinitario o is best explained as a result of dialectal borrowing remains, to date, the best account of the relevant correspondence patterns.

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APPENDIX

This appendix presents a total of 214 cognate sets for the two Mojeño varieties that are relevant to the issue at hand: Trinitario and Old Mojeño, the latter from two sources: Marbán (1702) and the data provided by Father Iraisos to Filippo S. Gilij (these were published in Gilij 1780 and appear in the table below followed by (G80)). Ignaciano contributes nothing to the historical interpretation of the phonological correspondences under discussion, as this Mojeño lect shows *a* uniformly for the three correspondences discussed in the paper.

The goal here is to assess the distribution of the relevant vocalic correspondences in the Mojeño basic vocabulary. Cognate sets in the table below are introduced by semantic glosses, which are split into two groups. The first group includes meanings featuring in at least one of a set of basic vocabulary lists: the first 100 items in the Leipzig-Jakarta list (Tadmor et al. 2010); the ASJP list (Holman et al. 2008); Arahon Dolgopolsky's list (Dolgopolsky 1986) and Lohr's 61-item list (Lohr 1998). The second group includes glosses not found in any of these lists, and these are considered, for the purpose of the present study, nonbasic vocabulary items. In the comparative table below, every cognate set that features at least one instance of any of the three correspondences is highlighted with cell shading. Meanings from basic vocabulary lists are indicated in bold font.

The data from the two Old Mojeño sources are presented in the original orthography between angled brackets, with the sole addition of morphological boundaries in the Marbán (1702) forms, where person-indexing prefixes, in particular *<nu->* 'first person singular', are often excised. Data from the Trinitario dialect have been silently adapted from source transcription into IPA-compliant transcription.

Some of the comparisons raise issues of interpretation that must be discussed but that do not affect the overall conclusions of the comparison. For the meaning 'Wind', two comparisons are offered, as the Mojeño dialects have separate items for boreal and for southern winds, and both have been included here. For 'Hand', distinct correspondences can be established depending on which Old Mojeño source is used. In any case, the set for 'Hand' is more important for showing divergence between the two Old Mojeño sources in terms of the quality, *o* or *a*, of the vowel (see section **5**) and does not provide any useful Trinitario comparison, as the cognate in this lecture shows the syncope of the relevant vowels (an alternative explanation is that Trinitario *u* in this case derives from the coalescence of *o + u*, as it does in *topono < *to-upono* 'liver'). The verb meaning 'Go' introduces a grammatical dimension to the comparison, which relates to the Bolivia-Paraná ablaut system mentioned in section **4**: Trinitario *o* matches Old Mojeño *o* in the realis/factual form (PM *-jono*), but an identity correspondence *a : a* is found instead in the comparison of irrealis/nonfactual forms (PM *-jana*). For 'Ear hole', although a comparison showing Trinitario *o* matching Old Mojeño *a* has been computed, the data from Marbán (1702) itself shows an ablaut *o ~ a*, while (what looks like) an independent form of the lexeme shows *o* instead. A similar paradigmatic alternation is observed in 'Path', which has an absolute/nonpossessed form but *o* in the possessed stem, in Old Mojeño. Finally, some internal etymological relations also interfere with the interpretation of the correspondences. Although different correspondences are attested in the sets for 'Big' and 'Old', Trinitario *o* : Old Mojeño *o*, and Trinitario *o* : Old Mojeño *a*, respectively, the two sets are likely related by sharing a common root: Trinitario -*ʔʧo-pe* 'grande, grueso' (Gill 1993: 51): Old Mojeño *<acho-pe>* 'Grande' (Marbán 1702: 243); Trinitario *ʔʧo-si* 'viejo' (Gill 1993: 43): Old Mojeño *<Echa-si>* 'Viejo, vieja' (Marbán 1702:357).

In (a-c) below, we compare the three relevant vocalic correspondences, each followed by a list of the meaning glosses where the correspondence is attested. Meanings that are present in any of the basic vocabulary lists considered appear in bold.

(a) TRIN *a* : OM *a*
Mouth; Jaw1; Jaw2; **Ear**; **Thigh**; Shin; Tears; Egg; Animal; Tapir; Wasp; **Sky**; **Light**; **Sun**; **Shadow/shade**; **Stone**; Mud (white); **Ashes**; **Name**; **Hard**; **Black**; **New**; **Go**; **Hear**; **Grind/crush**; Arrow; Garden; Tobacco; **Person**; Husband; Father; Sibling, older 1; Son/Daughter; Sibling, younger; **3.SG.M. PRO**; **What**; **Two**; **Over**.

(b) TRIN *o* : OM *o*
Body; Face; Eyelashes; **Tooth**; **Hair**; **Ear**; **Arm**; **Fingernail**; Throat; Rib; Chest; **Stomach**; **Liver**; Waist; **Skin**; **Bone**; **Fish**; Pet; Animal; **Wing**; Peccary; Deer; Tapir; **Snake**; Cayman; Monkey; **Sky**; **Wind** (northern); **Wind** (southern); Rainbow; **Moon**; **Rain**; **Smoke**; Fog; Cloud; Earth; **Soil**; **Big**; **Heavy**; **Bitter**; **Black**; Yellow; **Thick**; Be/stay; **Go**; **Run**; **Fall**; **Eat**; **Drink**; Sing; **Cry**; Bathe; **Know**; **Know2**; **See**; **Hear**; Fear; **Give**; **Take**; Steal; **Say**; Weed out; **Die**; **Hit/beat**; **Bite**; **Kill**; Urinate; **House**; Nest; Bow; Village; Axe; **Root**; **Leaf**; Forest, Maize; Sugarcane; Woman; Wife; Mother; Man; Young man; **Child**; Sibling, older1; Sibling, older2; **One**; **Three**; **Not**; **Yesterday**

(c) TRIN *o* : OM *a*
Forehead; Lip (lower); Ear hole; Shin; **Bird**; Lake; River; **Night**; Mud (white); Painful; Acid/sour; **Heavy**; **Old**; White; Canoe; **Child**.

MOJEÑO COMPARATIVE VOCABULARY

	Trinitario	Old Mojeño (Marbán)	Old Mojeño (Iraisos)
1. Body	-ˈoçʔe 'cuerpo' (G93:11)	-	<nu-òchie> 'Corpo' (G80:370)
2. **Head**	-ˈʧuti 'cabeza' (G93:8)	<nu-chuti> 'Cabeça' (M02:164)	<nu-ciùti> 'Capo' (G80:370)
3. Forehead	-ˈnoʔu 'frente' (G93:19)	<nu-naù> 'La frente' (M02:538)	-
4. Skull	ˈʧti-re 'calavera' (G93:8)	<chuti-rà> 'Calavera' (M02:468)	-
5. Face	-ˈmiro 'cara' (G93:8)	<nu-miro> 'Cara' (M02:170)	<nu-mìru> 'Gote' (G80:370)
6. **Nose**	-ˈsiri 'nariz' (G93:28)	<nu-siri> 'Nariz' (M02:288)	<nu-sìri> 'Naso' (G80:370)
7. **Mouth**	-ˈhaka 'boca' (G93:7)	<nu-hacà> 'Boca' (M02:160)	<nu-jàca> 'Bocca' (G80:370)
8. Lip (lower)	-ˈʧejo 'labio' (G93:23)	<nu-cheya> 'Labio de abajo' (M02:263)	<nu-ccèja> 'Labbro di sotto' (G80:370)
9. Lip (upper)	-hiː-ˈsumu 'bigote, en labio (G93:7)'	<nu-sumu> 'Labio de arriba' (M02:263)	<nu-sùmu> 'Labbro (di sopra)' (G80:370)

10. Jaw1	-ˈpani 'quijada' (G93:34)	*<nu-pani>* 'Quixada' (M02:321)	-
11. Jaw2	-ˈmama 'barba' (G93:6)	*<nu-mama>* 'La barba' (M02:155)	-
12. **Tongue**	-ˈnene 'lengua' (G93:24)	*<nu-nenê>* 'Lengua' (M02:265)	*<nu-nène>* 'Lingua' (G80:370)
13. **Eye**[15]	-ˈuçʔa 'ojo' (G93:29)	*<nu-uqui>* 'Ojos' (M02:293)	*<n-uchi>* 'Occhi' (G80:370)
14. Eyelashes	-ˈmotsi-pa 'pestañas' (G93:31)	*<mozicò>* 'Pestaña' (M02:307)	-
15. **Tooth**	-ˈoʔe 'diente' (G93:15)	*<nu-oe>* 'Diente' (M02:208)	*<nu-òi>* 'Dente' (G80:370)
16. **Hair**[16]	-ˈhijo-ʔo 'cabello de cuerpo' (G93:8)	*<nu-hiyoò>* 'Pelo del cuerpo' (M02:303)	-
17. **Ear**	-ˈʧoka 'oreja' (G93:29)	*<nu-choca>* 'Oreja' (M02:295)	*<nu-cióca>* 'Orecchio' (G80:370)
18. Ear hole	-ˈçiɲo 'oído' (G93:28)	*<nu-quiña, quiño>* 'Oydos' (M02:589)	-
19. Elbow	-ˈtsutsu 'codo' (G93:10)	*<nu-zuzu>* 'Codo' (M02:174)	-
20. **Shoulder**	-hiʔu 'hombro' (G93:22)	*<nu-hiu>* 'Ombro' (M02:295)	-
21. **Arm**	-ˈpowçi 'brazo' (G93:7)	*<nu-poboqui>* 'Brazo' (M02:163)	*<nu-bourè>* 'Braccio' (G80:370)
22. **Hand**[17]	-ˈwu-pe 'mano' (G93:25)	*<nu-baupê>* 'Mano' (M02:275)	*<nu-bòu>* 'Mano' (G80:371)
23. Finger	-ˈwu-çi 'dedo' (G93:13)	*<nu-bouqui>* 'Dedo de la mano' (M02:196)	-
24. **Fingernail**	-ˈhipɲo 'uña' (G93:42)	*<nu-hipoñó>* 'Uña' (M02:489)	*<nu-jipogno>* 'Unghia' (G80:371)

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[15] The final syllable in the Trinitario form is a classifier -ʔa for oval-shaped objects (see Olza Zubiri *et al.* 2002: 226 and references therein).

[16] *-ʔo is a classifier meaning 'body'. See Ignaciano -*hija-mama* 'beard' (cf. -*mama* 'chin, jaw'), -*hija-ʔa* 'body hair' (Olza Zubiri et al. 2002: 219).

[17] PM *ou > u in Trinitario (see also 'liver'). The forms in Trinitario and Old Mojeño (Marbán) arguably have a classifier -*pe* for flat or blade-shaped objects (Olza Zubiri et al. 2002: 275-277), suggesting the meaning of PM *-woʔu-pe* was 'palm of the hand'. See also 'finger' for the use of the base *-woʔu-* with a different classifier, *-ki* 'stick-like' (Olza Zubiri et al. 2002: 288-302). The same classifier appears in *-powo-ki* 'arm' and possibly in *-mitsu-ki* 'spine' as well.

25. **Neck**	-ˈpiçienu 'pescuezo' (G93:31)	*<nu-piquienù>* 'Pescuezo' (M02:307)	-
26. Throat	-ˈereno 'garganta' (G93:20)	*<n-eerenò>* 'Garganta' (M02:240)	-
27. Spine	-ˈmitsçiiçi 'espinazo' (G93:18)	*<nu-mizuqui>* 'El espinazo' (M02:515)	-
28. Rib	*-hiːmone* 'costillas' (G93:11)	*<nu-hirumonerepà>* 'Costilla' (M02:184)	-
29. **Back**, lower	-ˈçieku 'espalda (parte baja)' (G93:18)	*<nu-quiecu>* 'Espalda' (M02:229)	-
30. Chest	-ˈtupo 'pecho' (G93:30)	*<nu-tupo>* 'Pecho' (M02:302)	*<nu-tùpo>* 'Petto' (G80:370)
31. **Breast**	-ˈʧene 'teta' (G93:40)	*<nu-chene>* 'Pecho de la muger' (M02:302)	-
32. **Stomach**	*-omi* 'estómago' (G93:32)	*<Nuomi>* 'Estomago' (M02:232)	-
33. **Liver**	-ˈtopono 'hígado' (G93:21)	*<tauponó>* 'Hígado' (M02:252)	-
34. **Leg**	-ˈpueçie 'pierna' (G93:31)	*<to-paequiè>* 'Pierna de animal' (M02:308)	-
35. **Thigh**	-ˈpaʔe 'muslo' (G93:27)	*<nu-pae>* 'Muslo' (M02:287)	*<nu-pàe>* 'Gamba' (G80:371)
36. Shin	-ˈtsano 'espinilla' (G93:18)	*<nu-çanaqui>* 'Mi pierna' (M02:438)	-
37. **Foot**[18]	-ˈihpe 'pie' (G93:31)	*<n-ibopè>* 'Pie' (M02:308)	*<n-ibopè>* 'Piede' (G80:371)
38. **Knee**	-ˈpujusi 'rodilla' (G93:36)	*<nu-puyu>* 'Rodilla' (M02:330)	-
39. Waist	-ˈɲoʔe 'espalda (a la altura del cinturón)' (G93:31)	*to-noe* 'el principio de algo, los cimientos' (M02:545)	-
40. Belly	-ˈɲuri 'barriga' (G93:6)	*<nu-ñuri>* 'Barriga' (M02:156)	-

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[18] The change of *w* to *h* in Trinitario, preceding *p*, is a regular process (see Gill 1957: 15). Note that the *terminus a quo* for PM **-iwope* is arguably **-iwo-pe* 'sole of the foot', as shown by external comparanda such as Paunaka *-ibu* 'foot'. The morpheme *-pe* is a classifier for flat or plank-like objects (Olza Zubiri et al. 2002: 275-277).

41. **Navel**	*-tuju* 'ombligo' (G93:28)	*<Nutuyu>* 'Ombligo' (M02:295)	
42. **Skin**	*-ˈummo* 'piel' (G93:31)	*<to-umomò>* 'Piel' (M02:308)	-
43. **Flesh**	*-ˈeʧe* 'carne (de animal, persona)' (G93:9)	*<n-eechè>* 'Carne' (M02:172)	*<n-ece>* 'Carne' (G80:370)
44. **Bone**	*-ˈopera* 'hueso' (G93:22)	*<nu-ope>* 'Huessos', *<nu-ope-ra>* 'Huessos de comida'	-
45. **Blood**	*ˈiti, -ˈit-ne* 'sangre' (G93:36)	*<iti, n-iiti-ne>* 'Sangre' (M02:333)	-
46. Urine	*-ˈsene, ˈsne-ti* 'orina' (G93:29)	*<nu-sene>, <sene-ti>* 'Orina' (M02:296)	-
47. Tears	*-ˈtsera-(a)mo* 'lágrimas' (G93:24)	*<zerare>* 'Lagrima' (M02:264)	-
48. Egg	*sípa-ʔa* 'huevo de piyu' (G93:22)	*<Toà>* 'Guevo' (M02:245)	
49. **Horn**	*-ˈhiʔu* 'cuernos, astas, ombros' (G93:11)	*<ta-hiu>* 'Las astas del animal' (M02:491)	-
50. **Tail**	*-ˈihçi* 'cola' (G93:10)	*<ta-hiqui>* 'Cola de animal' (M02:175)	-
51. **Wing**	*-powo* 'ala' (G93:2)	*<Topobo>* 'Ala del ave' (M02:128)	
52. Animal	*ˈsorare* 'animal' (G93:3)	*<sorare>* 'Animal comestible' (M02:610)	*<soràre>* 'Animale' (G80:369)
53. Pet	*-ˈpero* 'animal (de montar)' (G93:3)	*<nu-pero>* 'Animal, ó ave casera, manza' (M02:570)	-
54. **Fish**	*ˈhimo* 'pescado' (G93:31)	*<himo>* 'Pege' (M02:303)	*<simo>* 'Pesce' (G80:369)
55. Lizard	*ˈkhiure* 'lagarto' (G93:24)	*<cahiurè>* 'Lagarto grande del rio' (M02:263)	-
56. **Snake**	*ˈççiore* 'víbora' (G93:43)	*<quichore>* 'Culebra' (M02:187)	-
57. Cayman	*meˈromero* 'caiman' (G93:8)	*<meromero>* 'Caiman, ó cocodrilo' (M02:263)	*<mèromèro>* 'Caimano' (G80:370)

58. **Bird**	ˈkojre 'pájaro' (G93:29)	<cayurè> 'Paxaro' (M02:302)	<caiùre> 'Uccello' (G80:369)
59. Bat	ˈwite 'murciélago' (G93:27)	<vitê> 'Murcielago, que pica' (M02:287)	-
60. Jaguar	ˈʔʧìni 'tigre' (G93:49)	<Ychini> 'Tigre' (M87:347)	<iccìni> 'Tigre' (G80:369)
61. Tapir	ˈsamo 'anta' (G93:38)	<samo> 'Anta' (M02:596)	<samo> 'Danta' (G80:370)
62. Deer	ˈkhowo 'ciervo (animal)' (G93:3)	<cohobo> 'Ciervo' (M02:445)	<cojòbo> 'Cervo' (G80:370)
63. Anteater	ˈʔtikre 'oso bandera' (G93:52)	<aticurè> 'Oso' (M02:296)	<aticurè> 'Orsetto' (G80:370)
64. Peccary	ˈsmoru 'puerco' (G93:39)	<simorû> 'Puerco' (M02:317)	<simòru> 'Porco' (G80:370)
65. Monkey	ˈijo 'mono' (G93:25)	<iyo> 'Mono pardo' (M02:284)	<io> 'Scimia' (G80:370)
66. Monkey (spp.)	ˈpere 'mono, cuatro ojo' (G93:34)	<yperè> 'Mono, que anda de noche' (M02:284)	-
67. Fox	ˈʧuje 'zorro' (G93:11)	<chuye> 'Un género de zorillo' (M02:468)	<ciúje> 'Volpe' (G80:370)
68. **Ant**	ˈkʧiru 'hormiga' (G93:3)	<cachirû> 'Hormiga' (M02:254)	<cacìru> 'Formica' (G80:370)
69. Termite	ˈpusi 'turiro' (G93:35)	<pusi> 'Hormigas que comen la madera' (M02:254)	-
70. **Louse**	-ˈiɲe 'piojo' (G93:23)	<yñerè, niyñe> 'Piojo' (M02:308)	-
71. Mosquito	ˈʔniʔu 'mosquito' (G93:52)	<añiu> 'Mosquito, zancudo' (M02:285)	-
72. **Fly (n.)**	ˈʔʧuwe 'mosca' (G93:51)	<chube> 'mosca' (M02:285)	
73. Wasp	ˈhane 'peto' (G93:25)	<hane> 'Abispa' (M02:481)	-
74. Chigoe flea	ˈsture 'nigua' (G93:40)	<siturè, nisitû> 'Nigua' (M02:289)	-
75. North, northern **wind**	ˈkhoʔo 'norte' (G80)	<cohoó> 'Norte, viẽto'	-

	(G93:3)	(M02:290)	
76. South, Southern **wind**	ˈwono 'sur' (G93:47)	*<boono>* 'Viento sur' (M02:401)	-
77. **Sky**	aˈnumo 'cielo' (G93:9)	*<anumô>* 'Çielo' (M02:378)	*<anumó>* 'Cielo' (G80:367)
78. **Light**	-háraku 'claro (como luna, ˌlámpara) (G93:25)	*<Tiharai>* 'Luz' (M02:269)	-
79. Rainbow	ˈoʔe 'arco-iris, dueño del agua, la lluvia' (G93:33)	*<oe>* 'El arco iris' (M02:550)	-
80. **Star**	ˈhreːçi 'estrella' (G93:27)	*<harayriqui>* 'Estrella' (M02:232)	*<jaráirichi>* 'Stella' (G80:367)
81. **Sun**	ˈsatʃe 'día, sol' (G93:38)	*<saachê>* 'Sol' (M02:339)	*<sácce>* 'Sole' (G80:367)
82. **Moon**	ˈkohe 'luna, mes' (G93:4)	*<cohè>* 'Luna' (M02:268)	*<cóje>* 'Luna' (G80:367)
83 **Shadow/shade**	-awi 'sombra, abrigo' (G93:38)	*<Nucaabi>* 'Ponerse a la sombra' (M02:340)	-
84. **Water**	ˈune, -ˈunera 'agua' (G93:43)	*<une>* 'Agua' (M02:126)	*<une>* 'Acqua' (G80:368)
85. Lake	ˈkoçiure 'laguna' (G93:3)	*<caquiurè>* 'Lago' (M02:264)	*<cachiùre>* 'Lago' (G80:368)
86. River	ˈkhokre 'río' (G93:3)	*<cahacuré>* 'Rio' (M02:329)	*<cajacuré>* 'Fiume' (G80:368)
87. **Fire**	ˈjuku, -ˈjukne 'fuego' (G93:49)	*<yucu, nu-iucu-nè>* 'Fuego' (M02:239)	*<jùcu>* 'Fuoco' (G80:368)
88. **Night**	ˈjoti 'noche, de noche' (G93:48)	*<yati>* 'Noche' (M02:290)	*<jatti>* 'Notte' (G80:367)
89. **Rain**	-ˈçiwo 'llover' (G93:18)	*<ti-quibó>* 'Lluvia' (M02:271)	*<ti-chíbo>* 'Pioggia' G80:368)
90. Cloud	ˈukohi 'nube' (G93:43)	*<ucô>* 'Nuve' (M02:291)	*<ucóji>* 'Nuvola' (G80:368)
91. Fog	ˈʔjoru 'sereno, rocío, neblina' (G93:53)	*<yoru>* 'Neblina' (M02:288)	-
92. **Smoke**	çhoreʔĩ 'humo' (G93:18)	*<quihorê>* 'Humo' (M02:256)	

93. **Stone**	ˈmari 'piedra' (G93:27)	<mari> 'Piedra' (M02:308)	-
94. Mud (white)[19]	-ˈpatsa-tʃo 'pintar' (G93:33)	<pazo> 'Barro blanco' (M02:156)	-
95. Earth	ˈʔpoçʔe 'abajo, bajo, tierra, mundo' (G93:52)	<epoquiè> 'Suelo' (M02:341)	-
96. **Soil**	ˈmotehi 'tierra' (G93:29)	<motehi> 'Barro' (M02:156)	<motejí> 'Terra' (G80:367)
97. **Path**	ʔtʃene, -otʃenekra 'camino' (G93:51)	<achenè, nuoche> 'Camino' (M02:169)	<accéne> 'Strada' (G80:368)
98. **Ashes**	ˈtsmapa 'ceniza' (G93:43)	<çima, çimapa> 'Çeniza' (M02:189)	-
99. **Name**	-ˈihare 'nombre' (G93:28)	<niharè> 'Nombre de hombre' (M02:290)	-
100. **Hard**	ˈmraka 'duro, fuerte' (G93:15)	<muraca> 'Dura cosa' (M02:211)	-
101. **Big**	-ˈʔtʃope 'grande, grueso' (G93:51)	<achope> 'Grande' (M02:243)	-
102. **Small**	ʔtʃiʔtʃu 'pequeño' (G93:51)	<Achipichu> 'Pequeña cosa' (M02:304)	
103. Painful	-ˈkoti 'doler' (G93:15)	<ti-cati> 'Doler' (M02:210)	-
104. **Heavy**	-hitakore 'pesado' (G93:31)	<Tihitocore> 'Pesado ser' (M02:307)	
105. **Old**	ʔtʃosi 'viejo' (G93:43)	<Echasi> 'Viejo, vieja' (M02:357)	
106. **New**	ʔrajru 'nuevo' (G93:28)	<Arairú> 'Nueva cosa' (M02:291)	
107. Acid/sour	-ˈkotsi 'agria, acido' (G93:7)	<ti-cazi> 'Agria cosa' (M02:126)	<ti-càsi> 'Agro' (G80:369)
108. **Bitter**	ˈsukore, -skore 'amargo' (G93:40)	<ti-sucorè> 'Amarga cosa' (M02:133)	-

[19] Trinitario form means 'to paint'. Note that Marbán (1702) records a verb derived from this noun with the meaning 'to paint using the <pazo> mud'.

109. **Sweet**	-ˈitwe 'dulce' (G93:24)	<ti-tibe> 'Dulçe' (M02:211)	<ti-tibe> 'Dolce' (G80:369)
110. **Good**	-ˈuri 'bueno' (G93:44)	<nu-uri> 'Bueno ser' (M02:163)	-
111. **Red**	ˈt-itsi 'rojo' (G93:36)	<t-izí> 'Bermellón' (M02:158)	<t-ìsi> 'Rosso' (G80:369)
112. **Black**	-ˈsiso ~ -ˈçiso 'negro' (G93:28)	<nu-quisoò> 'negro color' (M02:289)	<ti-chiso> 'Nero' (G80:369)
113. White	-ˈhopu 'blanco' (G93:7)	<ti-hapú> 'Blanco' (M02:159)	<ti-jàpu> 'Bianco' (G80:369)
114. Yellow	-ˈjokko 'amarillo' (G93:3)	<ti-yococò> 'Amarillo' (M02:133)	<ti-ococò> 'Giallo' (G80:369)
115. **Long**	-u- 'largo' (G93:43)	<tiumo> 'largo paño' <tiuqui> 'largo palo' (M02:264)	-
116. **Wide**	-siku 'largo' (G93:39)	<Tisicu> 'Ancho' (M02:135)	-
117. **Far**	ewire 'lejos' (G93:24)	<Eboiré> 'Lejano' (M02:265)	-
118. **Thick**	-ʔtʃope 'grande, grueso' (G93:51)	<Achope> 'grueso' (M02:144)	-
119. Be/stay	-ˈow-ʔo- 'estar' (G93:32)	<nu-obo> 'Estar, habitar' (M02:551)	-
120. **Go**	-ˈjono, -jana 'ir' (G93:48)	<nu-yana> 'Yrse' (M02:640)	-
121. **Come**	-ˈuteko 'venir' (G93:44)	<nu-utaicò> 'Venir' (M02:638)	-
122. **Run**, flee	-ˈhunopo 'correr' (G93:27)	<nu-hunopo> 'Correr' (M02:497)	-
123. **Fall**	-ˈwenopo 'caerse' (G93:8)	<nu-benopô> 'Caer' (M02:166)	-
124. **Eat**	-ˈniko 'comer, morder, picar' (G93:10)	<nu-nicó> 'Comer, morder' (M02:542)	-
125. **Drink**	-ero 'tomar: líquido, alcohol' (G93:16)	<n-eerò> 'Beber' (M02:157)	-

126. **Stand** up	-ˈetʃepuko 'levantarse' (G93:11)	<n-echepucò> 'Levantarse' (M02:265)	-
127. Sing	-ˈhiro 'cantar, leer' (G93:26)	<nu-hirò> 'Cantar' (M02:490)	-
128. **Cry**	-íjoʔo 'llorar' (G93:25)	<niiyó> 'Llorar' (M02:271)	-
129. **Suck**	-ʧuʧko 'chupar' (G93:12)	<Nuchuchucó> 'Chupar' (M02:192)	-
130. **Hide**	-jumruko 'esconder' (G93:17)	<Nuyumuruco> 'Esconder' (M02:227)	-
131. Bathe (oneself)	-ˈkowo 'bañarse' (G93:6)	<nu-cobô> 'Bañarse' (M02:155)	-
132. Look for	-ˈtan-ko 'buscar' (G93:7)	<nu-tanucò> 'Buscar' (M02:614)	-
133. **Know**	-ˈitko 'saber' (G93:36)	<n-itucô> 'Saber hazer algo' (M02:331)	-
134. **Know2**	-eʧo 'saber, acordar' (G93:36)	<ne-echò> 'saber' (M02:331)	-
135. **See**	-ˈimʔo 'ver' (G93:42)	<n-imoó> 'Ver algo' (M02:356)	-
136. **Hear**	-ˈsamo 'oír' (G93:28)	<nu-samo> 'Oir' (M02:596)	-
137. Fear	-ˈpiko 'tener miedo de algo' (G93:34)	<nu-pico> 'Temer á outro' (M02:571)	-
138. **Give**	-ˈihroko 'dar' (G93:20)	<n-ihorocô> 'Dar' (M02:494)	-
139. **Take**	-ˈomo 'llevar' (G93:32)	<nu-omo> 'Llevar, traer' (M02:558)	-
140. **Carry**	-ˈjereko 'cargar' (G93:9)	<nu-yareco> 'acarrear' (M02:642)	-
141. Steal	-ˈomeʧo 'robar' (G93:32)	<nu-omechò> 'Hurtar, hacer algo a escondidas' (M02:557)	-
142. **Say**	-ˈkoʔe 'decir, hacer' (G93:8)	<nu-coê> 'Dezir, determinar' (M02:207)	-

143. **Grind/crush**	-ˈjuwako 'moler' (G93:50)	<nu-yubacó> 'Moler' (M02:283)	-
144. Roast	-ˈsuː-ko 'freir' (G93:40)	<nu-suruquió> 'Tostar granos' (M02:612)	-
145. Weed out	-ˈisoʔo 'carpir' (G93:23)	<n-iso> 'Carpir' (M02:608)	-
146. **Bite**	-niko 'morder, comer, picar' (G93:27)	<nunicô> 'morder' (M02:284)	-
147. **Hit/beat**	eʾo 'pegar' (G93:30)	<n-eo> 'dar, castigar' (M02:193)	-
148. **Die**	-ˈepeno 'morirse' (G93:15)	<n-eepenò> 'Morir' (M02:284)	-
149. Kill	-ˈkopa-ko 'matar' (G93:5)	<nu-coparaicô> 'Matar' (M02:277)	-
150. **Burn (intr)**	-ihku-ʔo 'quemar' (G93:33)	<t-ihure> 'Quemar el fuego' (M02:320)	-
151. **Sleep**	-ˈimko 'dormir' (G93:20)	<n-imocò> 'Dormir' (M02:210)	-
152. Urinate	-ˈhoʔo 'orinar' (G93:27)	<nu-hoò> 'Orinar' (M02:296)	-
153. **House** (Poss.)	-ˈpeno 'casa, cueva' (G93:34)	<nu-peno> 'Casa' (M02:172)	-
154. **House** (Abs.)	ˈpeti 'casa, cueva' (G93:34)	<peti> 'Casa' (M02:172)	<peti> 'Casa' (G80:368)
155. Nest	ta-ˈmoko 'nido' (G93:28)	<ta-moco> 'Nidal' (M02:289)	-
156. Property, belongings	-ˈjeʔe 'pronombre posesivo' (G93:48)	<nu-yeè> 'Mio' (M02:10)	-
157. Bow	-ˈetspoːku 'arco' (G93:17)	<n-eziporocû> 'Ballesta' (M02:155)	<eziporocù> 'Arco' (G80:368)
158. Arrow	-ˈtaçriçi 'flecha' (G93:19)	<taquiriqui> 'Flecha' (M02:236)	<tajirichi> 'Freccia' (G80:368)
159. Thread	ˈʔtsepi 'hilo' (G93:21)	<n-ezepirâ> 'Hilo delgado' (M02:478)	-
160. Village	ˈʔwosare, -ˈowsa 'pueblo' (G93:33)	<obosarê> 'poblado' (M02:553)	-

161. Axe	ˈjwo-ti, -ˈjowo 'hacha' (G93:21)	*<yobo-ti, nu-yobo>* 'Hacha' (M02:647)	-
162. Pitcher, jug	ˈjupi 'cántaro' (G93:49)	*<yupi, nu-yupi>* 'Iarro, cantaro' (M02:653)	*<jùpi>* 'Brocca' (G80:368)
163. Canoe	-ˈpokre, ˈpkure 'canoa' (G93:8)	*<pacuré>* 'Barca' (M02:155)	*<pacùre>* 'Canoa' (G80:368)
164. Paddle	ˈnoːpe 'remo' (G93:35)	*<nu-nauropè>* 'Remo' (M02:538)	-
165. **Tree/wood**	ˈjkuçi 'árbol, palo, madera' (G93:5)	*<yucuqui>* 'Arbol' (M02:143)	*<jucúchi>* 'Albero' (G80:368)
166. **Root**	-pore 'raíz' (G93:34)	*<toporè>* 'Raiz' (M02:323)	
167. **Leaf**	ˈpoko-hi 'hoja' (G93:22)	*<to-poco-hi>* 'las hojas' (M02:574)	
168. Forest	ˈsmeno 'monte' (G93:27)	*<simeno>* 'Monte de arboles' (M02:603)	*<siméno>* 'Bosco' (G80:368)
169. Garden	-ˈesane, ˈʔsanti 'chaco' (G93 :12)	*<esane-ti, n-esane>* 'Chacra' (M02:475)	*<esànati>* 'Campo seminato' (G80:368)
170. Tobacco	saware 'tabaco' (G93:38)	*<sabarè>* 'Tabaco' (M02:595)	*<sabàre>* 'Tabacco' (G80:369)
171. Pepper	ˈʔʧeti 'ají' (G93:51)	*<acheti>* 'Agi' (M02:369)	*<accèti>* 'Peperone' (G80:369)
172. Maize	ˈsponi 'maíz' (G93:25)	*<seponi>* 'Maiz' (M02:272)	*<sepòni>* 'Granturco' (G80:369)
173. Potato	ˈkəere 'camote' (G93:2)	*<coere>* 'Camotes' (M02:444)	*<coère>* 'Batàta' (G80:369)
174. Peanut	ˈkriçre 'maní' (G93:8)	*<curiquiere>* 'Mani' (M02:274)	*<curichierè>* 'Maní' (G80:369)
175. Yuca	ˈkuhpa, -kuhˈpa-ra 'yuca' (G93:8)	*<cuhu>* 'Yuca' (M02:451)	*<cujù>* 'Juca' (G80:369)
176. Sugarcane	ˈʔkuteno 'caña' (G93:50)	*<ecuteno>* 'Caña dulce' (M02:469)	*<ecùteno>* 'Cannamele' (G80:369)
177. **Person**	ˈʔʧane 'gente, hombre, persona' (G93:51)	*<achanè>* 'Hombre, vivo' (M02:368)	*<nù-acciànebò>* 'Anima' (G80:367)

178. Woman	ˀseno 'hembra, mujer' (G93:52)	\<eseno\> 'Muger' (M02:286)	\<esèno\> 'Donna' (G80:367)
179. Wife	-ˈjeno 'esposa' (G93:48)	\<nu-yeno\> 'Mi esposa' (M02:645)	\<nu-jèno\> 'Moglie' (G80:367)
180. Mother	-ˈeno 'madre' (G93:14)	\<peeno\> 'Tu madre' (M02:272)	-
181. Man	ˀhiro 'hombre, macho' (G93:51)	\<ehoiro\> 'Varón' (M02:471)	-
182. Husband	-ˈima 'marido' (G93:20)	\<n-iyma\> 'Marido' (M02:276)	\<n-íma\> 'Marito' (G80:367)
183. Father	-ija, ˈija-re 'padre' (G93:25)	\<pi-iyà\> 'Tu padre' (M02:297)	-
184. Young man	ˀmoperu 'chico(a)' (G93:51)	\<amoperú\> 'Muchacho' (M02:374)	-
185. **Child**	ˀmojo 'niño pequeño' (G93:51)	\<amoya\> 'Niño o niña' (M02:289)	\<amòjo\> 'Bambino' (G87:367)
186. Sibling, older1	ˈporape 'hermano(a) mayor' (G93:35)	\<nu-porape\> 'Mi hermano' (M02:579)	-
187. Sibling, older2	-ˈetʃowi 'hermano(a) mayor' (G93:12)	\<n-echobi\> 'Hombre de edad y mayor, que outro' (M02:469)	-
188. Sibling, younger	-ˈati 'hermano, hermana menor' (G93:2)	\<ati\> 'Hermano menor' (M02:387)	-
189. Son/Daughter	ˈtʃitʃa 'hijo(a)' (G93:21)	\<nu-chicha\> 'Hijo o hija' (M02:460)	\<nu-cíccia\> 'Figlio', 'Figlia' (G80:367)
190. Nephew/Niece	-ˈtʃehi 'sobrina' (G93:9)	\<nu-chehi\> 'Mi sobrino' (M02:459)	-
191. Boyfriend	ˀrajeno 'novio, ya casado' (G93:52)	\<nu-arayeno\> 'Mi mujer de segundo matrimonio' (M02:386)	-
192. Girlfriend	ˀrema 'novia, casada' (G93:52)	\<nu-araima\> 'Mi marido de segundo matrimonio' (M02:385)	-
193. Grandmother	-ˈotse 'abuela' (G93:33)	\<nu-oze\> 'Aguela' (M02:127)	-

194. Grandfather	-ˈotʃko 'abuelo' (G93:32)	<nu-achuco> 'Aguelo' (M02:127)	-
195. Grandson	-amri 'nieto' (G93:1)	<nu-amori> 'Mi nieto' (M02:374)	-
196. Son-in-law	-ˈtʃina, ˈtʃna-re 'yerno' (G93:10)	<china-re, nu-china> 'Mi yerno' (M02:461)	-
197. Daughter-in-law	-ˈtʃineno, ˈtʃneno-ko 'nuera, cuñada' (G93:10)	<chineno-ré, nu-chineno> 'Nuera' (M02:461)	-
198. Mother-in-law	-ˈimse 'nuera, suegra' (G93:22)	<n-imosè> 'Suegra' (M02:341)	-
199. Father-in-law	-ˈimtʃuko 'suegro' (G93:20)	<n-imachucò> 'Suegro' (M02:341)	-
200. **1SG.PRO**	nuti 'yo' (G93:43)	<nuti> 'yo' (M02:360)	<nuti> 'io' (G80:239)
201. **2SG.PRO**	piti 'usted, tu, vos' (G93:42)	<piti> 'tu' (M02 :352)	<piti> 'tu' (G80 :239)
202. **3SG.F.PRO**	esu 'ella' (G93:16)	<esu> 'Ella' (M02:213)	<esu> 'quella' (G80:239)
203. **3SG.M.PRO**	ema 'él (hombre hablando)' (G93:16)	<ema> 'El' (M02:213)	<ema> 'quello' (G80:239)
204. **3SG.M.PRO**	eɲi 'él (mujer hablando)' (G93:16)	<eñi> 'El, esse' (M02:6)	<egni> 'quello' (G80:369)
205. **Who?**	naha 'quién' (G93:34)	<mahaze> 'quien' (M02:321)	-
206. **What?**	taha 'qué (es)' (G93:33)	<taha> 'Que?' (M02:319)	-
207. **One**	étona 'uno' (G93:41)	<Eto> 'uno' (M02:87)	-
208. **Two**	apina 'dos' (G93:15)	<Api> 'dos' (M02:87)	-
209. **Three**	mopona 'tres' (G93:41)	<Mopo> 'tres' (M02:87)	-
210. **Four**	-	<Ticahiri> 'cuatro' (M02:87)	-
211. **Not**	woʔĩ 'no, negación' (G93:28)	Voi 'No' (M02:289)	<voi> 'non' (G80:242)

212. **In**	*ʔtʃene-ku* 'en camino' (G93:16)	*<cu>* 'En' (M02:217)	-
213. **Over**	*ína ʎu* 'encima' (G93:16)	*<Ninaû>* 'Sobre mi' (M02:338)	-
214. **Yesterday**	*kope* 'ayer' (G93:6)	*<Coope>* 'ayer' (M02:152)	-

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