

# 1 Otomanguean historical linguistics: past, present and prospects for the future

## 2 **Abstract**

3 Among the linguistic lineages of Mesoamerica, the Otomanguean family is the most diverse  
4 and most widely spread. Long occupying a central position in one of the cradles of human  
5 civilization, speakers of Otomanguean languages have played important roles in the region,  
6 about which their languages have much to tell. However, Otomanguean is perhaps the least  
7 understood of the major Mesoamerican language families, due to its great diversity, the  
8 remarkable structural complexity of Otomanguean languages, and the history of the field of  
9 Otomanguean historical linguistics, which has seen great achievement alternating with periodic  
10 controversy and doubt. With a focus on the higher levels and more ancient time depths of the  
11 family, this article surveys Otomanguean historical linguistic work and presents a state of the  
12 art perspective on Otomanguean classification, reconstruction, linguistic prehistory, remaining  
13 challenges, and prospects for the future.

## 14 **1 Introduction**

15 Otomanguean is an expansive language family that has been centered around the core of the  
16 Mesoamerican cultural (Kirchhoff 1967[1943]) and linguistic area (Campbell et al. 1986) for  
17 as long as we can detect. It extends a little beyond the northern limits of Mesoamerica into the  
18 state of San Luis Potosí, Mexico (Pame), and it previously reached as far south as the Gulf of  
19 Nicoya along the Pacific slope of Costa Rica (Mangue). While the family still occupies a wide  
20 range, it now falls entirely within Mexico, not counting recent emigration. Its ancient and  
21 central, yet widespread, position in one of the cradles of civilization, where agriculture,  
22 complex states, elaborate monuments, and even writing were developed, make Otomanguean  
23 linguistic history important for understanding not only Mesoamerican (pre)history but also  
24 human history and cultural development more generally.

25 No other accepted Mesoamerican language family is as diverse as Otomanguean, and it  
26 remains the Mesoamerican family about which we know the least (Kaufman & Justeson 2010:

27 226–227), at least relative to its diversity. While this diversity itself may be one reason for this,  
28 another reason is that Otomanguean languages present remarkable complexity in their sound  
29 systems and word structure, which has made them challenging to analyze, describe, and  
30 compare, but which also makes them of general synchronic, diachronic and aesthetic interest.

31 The name “Otomanguean” is attributed to Schmidt (1977 [1926]), who listed an “Otomanguean”  
32 group on his map of North and Middle American languages, and the name was later  
33 reduced to “Otomangue” by Jiménez Moreno (1936; 1962: 62).<sup>1</sup> These are just two of the many  
34 names that have been used to refer to Otomanguean, and these authors are only two of the many  
35 voices that have played roles in the long, contentious, and challenging process of determining  
36 that Otomanguean is a genetic unit, which languages belong to it, and how those languages are  
37 more or less closely related to each other.

38 The most reliable means for answering these questions is the comparative method of  
39 historical linguistics. Its basis in the regularity of sound change enables us to reconstruct the  
40 sounds and words of unattested earlier stages of languages, which in turn provide a foundation  
41 for handling less regular morphosyntactic and semantic change, and which all together may be  
42 leveraged for identifying changes due to language contact and for exploring human intellectual,  
43 social, and cultural prehistory in coordination with other fields such as archaeology,  
44 ethnohistory, epigraphy, and genetics.

45 This article is a critical account of past and present historical linguistic research on  
46 Otomanguean languages and has three primary goals: (i) to provide an informative and  
47 reference-rich resource for students and scholars of the many fields for which historical

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<sup>1</sup> Otomanguean is sometimes written with a hyphen: “Oto-Manguean.” The hyphenless spelling reflects that the name does not indicate a coordination of two genetic groupings, like Sino-Tibetan, Mixe-Zoquean, or Oto-Pamean, or even two geographic regions, as in Afro-Asiatic or Indo-European.

48 linguistics is relevant, (ii) to shed light on interesting or problematic aspects of Otomanguean  
 49 historical linguistics, and (iii) to offer suggestions for future work. The scope of this article is  
 50 largely limited to topics involving the higher-level phylogeny of Otomanguean; a companion  
 51 article dealing with Otomanguean's major subgroups will follow. In §2 the current  
 52 classification of Otomanguean languages is presented, and the history of scholarship and  
 53 supporting evidence is surveyed. A few points of interest in the structure of Otomanguean  
 54 languages are outlined in §3. Topics in language and prehistory are discussed in §4, and  
 55 proposals for long distance relationship in §5. Conclusions are provided in §6.

## 56 **2 Classification and reconstruction**

57 This section presents the currently most recognized classification of Otomanguean languages  
 58 (§2.1), references to earlier classification proposals (§2.2), a summary of research on  
 59 Otomanguean comparative reconstruction and subgrouping (§2.3), and a recent challenge to  
 60 Otomanguean as an established language family (§2.4).

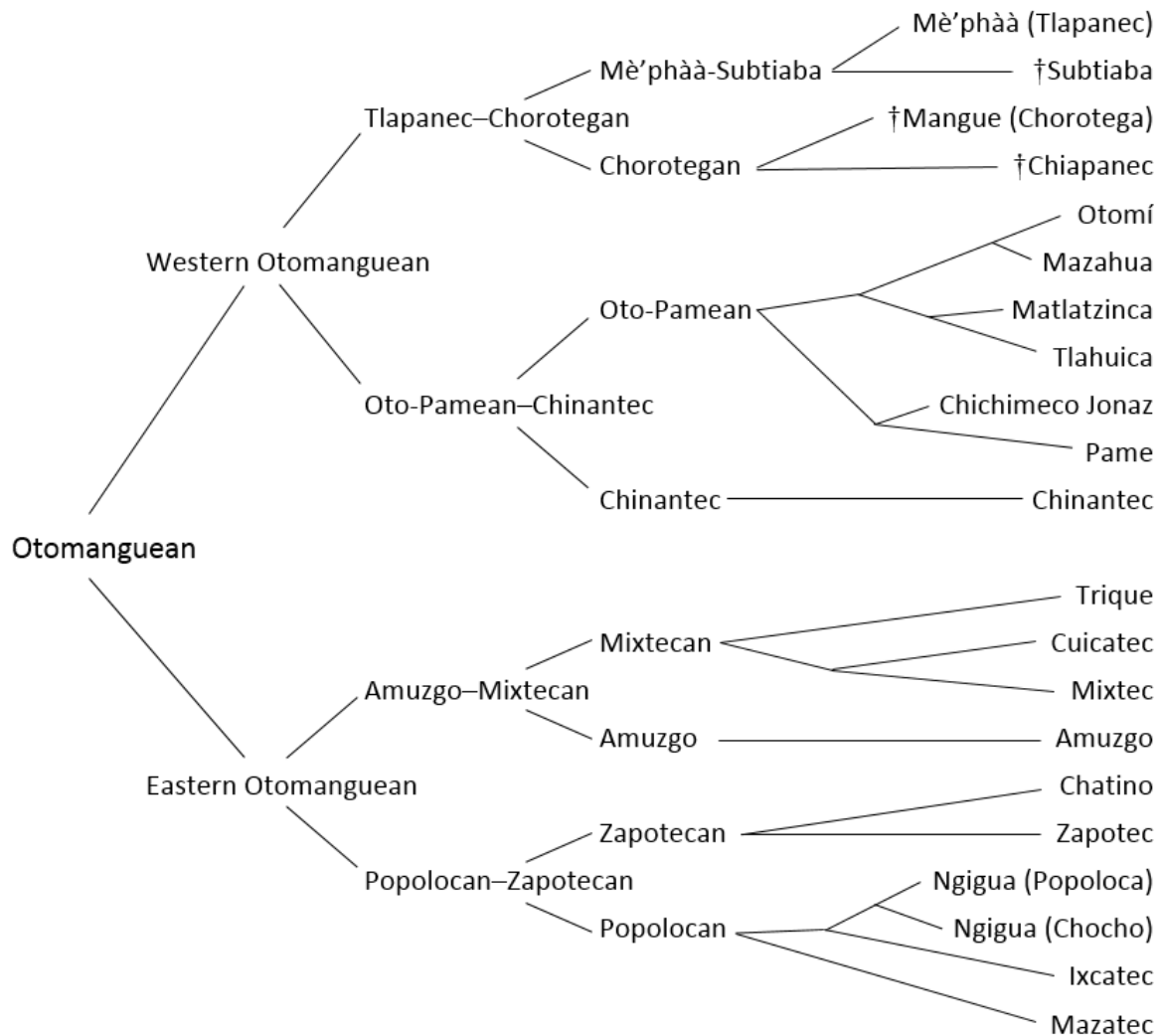
### 61 **2.1 Current Otomanguean language classification**

62 The most widely recognized Otomanguean language classification is Kaufman's (1988, 2006a,  
 63 2015a, 2016b). He first divides the family into Western Otomanguean and Eastern  
 64 Otomanguean, which each split into two subgroups. Those four subgroups each bifurcate,  
 65 yielding eight MAJOR SUBGROUPS, which are roughly on the order of Indo-European subgroups  
 66 such as Romance, Germanic, Indo-Iranian, Balto-Slavic, etc. Kaufman's high-level binary  
 67 branching is shown in Figure 1. The rightmost part of the figure reflects the internal structure  
 68 of the eight major subgroups, which is detailed in the sequel article to this,<sup>2</sup> and is shown here

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<sup>2</sup> Line length in the diagram does not necessarily reflect relative time depth.

69 only down to the level of the ETHNOLINGUISTIC GROUPING (INALI's 2009 *agrupación*  
70 *lingüística*).<sup>3</sup>



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Figure 1. Otomanguean classification (based on Kaufman 1988)

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<sup>3</sup> Some names and spellings used here differ from those found in other sources. Kaufman's dehispanicized spellings reflect the Mayan indigenous academic tradition (Mateo Toledo 2003), but no such agreement across Otomanguean groups yet exists. Some groups have recently established autonymic standards, rejecting names of external or derogatory origin: e.g. Tlapanec → Mè'phàà (Carrasco 2006). Other groups are increasingly using endonyms, e.g. Mixtec → Tu'un Savi (Guadalupe Joaquina 2014), but these may vary depending on the variety: *tnu'u<sup>23</sup> dau<sup>23</sup>* (Ramírez Pérez 2014). Names and spellings are important, sensitive, dynamic, and political. An attempt is made here to reflect community desires in clearer cases, but when in doubt, or when there is risk of privileging one variety over others, more standard names and spellings are used.

73 Some Otomanguean ethnolinguistic groupings are single languages with minor variation  
 74 (e.g. Tlahuica,<sup>4</sup> Chichimeco Jonaz, Ixcatec). Others consist of multiple languages, which may  
 75 have their own internal variation (Otomí, Trique, Chatino, Mazatec), and still others are  
 76 diversified themselves almost enough to be considered families in their own right (Zapotec,  
 77 Mixtec, Chinantec). In striking contrast to the Mayan language family, which has seen over 30  
 78 years' relative consensus that there are 31 Mayan languages (Campbell & Kaufman 1985: 188;  
 79 Law 2013: 143), there is nothing near a consensus for the number of Otomanguean languages.  
 80 In some areas variation may be so great but too gradual to ever count “languages.”<sup>5</sup> In most  
 81 cases, communities within ethnolinguistic groupings share some broader identity or recognize  
 82 some degree of collective history, and refer to themselves or their languages with cognate  
 83 autonyms (see e.g. Merrifield 1966: 581 for Chinantec).

## 84 **2.2 Early Otomanguean classification proposals**

85 Otomanguean has long been considered a genealogical linguistic grouping, but its name and  
 86 membership have frequently changed over time. The many proposed Otomanguean  
 87 classifications preceding Rensch's (1966) proto-Otomanguean reconstruction will not be  
 88 detailed here, but the primary references are provided in the next paragraph. Summaries of the  
 89 early work can be consulted in Fernández de Miranda & Weitlaner (1961: 6–9), Rensch (1976:  
 90 1–8), and especially Jiménez Moreno's (1962: 54–85) detailed account.

91 Early Otomanguean classificatory work can be roughly split into four periods according to  
 92 the methodologies used. Works during the earliest period (1864-1911) were largely  
 93 impressionistic, though nonetheless foundational (Orozco y Berra 1864: 25-29; Pimentel 1875;

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<sup>4</sup> Martínez Ortega (2012: 43-45) argues for using the name “Tlahuica” or the autonym *pjyékakjó* instead of “Ocuiltec(o).”

<sup>5</sup> Kaufman (1988) lists 48 virtual or emergent languages and “language areas” for Otomanguean, while Lewis et al. (2015) list 57 “languages” for Zapotec alone, and 52 for Mixtec.

94 Brinton 1891, 1892; León 1902; Belmar 1905; Thomas and Swanton 1911). Most proposals of  
95 the second period (1912-1937) had some basis in closer examination of lexical and grammatical  
96 data, with a tendency toward splitting languages into separate families (Mechling 1912;  
97 Lehmann 1920; Angulo 1926a, 1926b; Angulo & Freeland 1935; Mendizábal & Jiménez  
98 Moreno 1937; Soustelle 1937: 441; cf. Jiménez Moreno 1936). Works of the third period (1939-  
99 1944) drew on comparison of typological features, which led to the more inclusive proposals  
100 of Ecker (1939) and Weitlaner (1941)<sup>6</sup> (see also Mason 1940; Radin 1944; cf. McQuown 1955).  
101 During the fourth period (1959-1964), most works were based on lexicostatistics and  
102 glottochronology (Swadesh 1950, 1952; Lees 1953) and included claims of longer-range  
103 relations (see §5) (Fernández de Miranda et al. 1959; Swadesh 1959, 1960, 1964b). These  
104 works provoked strong but respectful criticism for their lack of methodological rigor (Longacre  
105 1960, 1961; Olmstead 1961; Callaghan & Miller 1962; Kaufman 1988), and lexicostatistics  
106 and especially glottochronology are widely considered problematic methods for language  
107 classification (Hojjer 1956; Bergsland & Vogt 1962; Matisoff 2000).

108 If one thing were shared by all of the works just mentioned, it would be their lack, either  
109 entire or relative, of argumentation based on careful application of the comparative method.

### 110 **2.3 Comparative reconstruction(s)**

111 While new approaches for establishing or refining language relationships continue to be  
112 explored, the gold standard is still the comparative method, which requires systematic  
113 comparison of large lexical data sets, identification of regular sound correspondences,

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<sup>6</sup> Weitlaner's (1941) "Macro-Otomangue" group included an OLMEC family that consisted of the Popolocan and Mixtecan families. The term "Olmec" refers to the earliest monumental Mesoamerican civilization (Jiménez Moreno 1942; Stirling 1968; Coe 1968), situated along the Gulf Coast of modern Veracruz and Tabasco states, whose population likely spoke a Mixe-Zoquean, not Otomanguean, language (Campbell & Kaufman 1976).

114 reconstruction of protolanguages, and tracing of changes and shared innovations in and among  
 115 daughter languages. The strongest proposals are those that are reinforced by evidence from  
 116 multiple or idiosyncratic grammatical correspondences, and all details of an analysis should be  
 117 carefully examined with consideration of likely or common pathways of change and  
 118 similarities due to language contact (Hock 1991: 556–580; Rankin 2003; Campbell & Poser  
 119 2008: 162–223; Crowley & Bowerman 2010: 108–117). The remainder of this sub-section surveys  
 120 comparative reconstruction of Otomanguean major subgroups before Rensch (1966) (§2.3.1),  
 121 Rensch’s own contributions (§2.3.2), and Kaufman’s comparative Otomanguean (§2.3.3).

### 122 **2.3.1 Subgroup reconstruction before Rensch (1966)**

123 Comparative reconstruction of Otomanguean subgroups began with Swadesh’s (1947)  
 124 proto-Zapotec. In Oto-Pamean, Newman and Weitlaner (1950a) reconstructed part of proto-  
 125 Otomí and then added Mazahua (Newman and Weitlaner 1950b). Weitlaner (1953) added  
 126 Matlatzinca, and Bartholomew (1959) later added Pame. Fernández de Miranda (1951)  
 127 reconstructed proto-Popoloc (Popoloca, Chocho and Ixcatec), and Gudschinsky (1956) proto-  
 128 Mazatec. After Longacre (1955, 1957) reconstructed proto-Mixtecan, things took off: proto-  
 129 Popolocan (Gudschinsky 1959; Longacre 1962), proto-Mixtec (Mak & Longacre 1960), proto-  
 130 Chorotegan (Fernández de Miranda & Weitlaner 1961), proto-Chinantec (Rensch 1963, 1968),  
 131 proto-Chatino (Upson & Longacre 1965), and extensive reconstructions of proto-Oto-Pamean  
 132 (Bartholomew 1965) and proto-Mazatec (Kirk 1966).

133 Some of these works included the first systematic comparisons and preliminary  
 134 reconstructions across major subgroups: Gudschinsky’s (1959) 112 proto-Popotecan  
 135 reconstructions (proto-Popolocan and proto-Mixtecan); Fernández de Miranda & Weitlaner’s  
 136 (1961) 100 proto-Popoloca-Mangue reconstructions with proto-Mixtecan comparisons; and  
 137 Bartholomew’s (1965) proto-Oto-Pamean and proto-Popotecan sound correspondences and  
 138 cognate sets. Swadesh (1964a) provides about 200 reconstructions of his “proto-Oaxacan” (i.e.

139 Eastern Otomanguean plus Huave, the latter of which is no longer widely considered to be  
 140 related to Otomanguean). Other works contributed to the reconstruction of proto-Otomanguean  
 141 kinship terminology (Harvey 1963; Merrifield 1981) and the kinship system in the abstract  
 142 (Casasa García 1979).

### 143 **2.3.2 Rensch's comparative Otomanguean phonology**

144 Rensch (1966, 1976) modified the major subgroup reconstructions listed above, excluding  
 145 Swadesh's proto-Zapotec (1947), and reconstructed final syllables of 427 proto-Otomanguean  
 146 forms. He did not include Subtiaba or Mè'phàà, which had been excluded from most  
 147 Otomanguean discussion following Sapir's (1925a, 1925b) influential classification of  
 148 Subtiaba as Hokan—a relation now only possible if much more remote (see §5). Rensch  
 149 reconstructs proto-Otomanguean phonology and devotes chapters to developments within each  
 150 of the seven included major subgroups. His appendix includes his 427 cognate sets, which  
 151 consist mostly of his reworking of the major subgroup reconstructions listed in §2.3.1 and the  
 152 primary data that they are based on. While many of his sets or reconstructions (with superscript  
 153 numerals representing tone), such as *\*\*(h)k<sup>w</sup>en* 'mountain' (Set 167) and *\*\*(n)(h)k<sup>w</sup>e(h)(n)<sup>3</sup>*  
 154 'straw mat' (Set 181), might appear phonologically and/or semantically loose, his work  
 155 received considerable praise from other Otomangueanists (Longacre 1977: 122; Suárez 1980;  
 156 Kaufman 1983: 38). Rensch (1977a) subsequently added Mè'phàà-Subtiaba as an eighth major  
 157 subgroup and traced its historical phonology from proto-Otomanguean, which was revised but  
 158 enthusiastically endorsed by Suárez (1979) and later expanded by Kaufman (2016a).

159 Both Rensch (1976; 1977a) and Longacre (1977: 101) placed the seven, later eight, major  
 160 subgroups all coordinate within Otomanguean. In another study, Rensch (1977b) highlighted  
 161 phonological isoglosses and shared innovations across major subgroups that implied multiple  
 162 population movements and frequently emerging and dissolving contact zones. The picture  
 163 remained cloudy, and Rensch put forth no proposal for higher-level subgrouping. The other



164 major gap in Rensch's work, and in Otomanguean historical linguistics of the time, was the  
 165 lack of evidence from comparative morphology.

166 While Suárez (1979) was convinced by Rensch that Mè'phàà was Otomanguean, there were  
 167 skeptics (e.g. Bright 1978). In response, Suárez (1986) brought to light evidence from  
 168 idiosyncratic morphophonological alternations shared between Mè'phàà and other  
 169 Otomanguean languages, and he identified a significant amount of cognate morphology and  
 170 grammatical particles across major Otomanguean subgroups.

### 171 **2.3.3 Kaufman's comparative Otomanguean**

172 Kaufman's two main Otomanguean monographs deal with comparative phonology  
 173 (Kaufman 1983) and comparative morphology (Kaufman 1988); they remain unpublished. Two  
 174 recently web-published monographs contain some of their details: one on Otomanguean  
 175 linguistic prehistory (Kaufman 2015a) and the other on the Otomanguean affiliation of  
 176 Mè'phàà-Subtiaba and potential affiliation of Otomanguean with Hokan (2016a).

177 For comparative Otomanguean phonology, Kaufman (1983), like Rensch, worked through  
 178 the major subgroup reconstructions listed in §2.3.1, adding additional work on Zapotec  
 179 (Swadesh 1947; Suárez 1973) and Mixtec (Bradley & Josserand 1982). His revised analyses of  
 180 the major subgroup phonologies and their discrepancies with earlier work are summarized in  
 181 his appendices. He expands the cross-subgroup sound correspondences and significantly  
 182 revises Rensch's proto-Otomanguean phonology and the historical developments in the major  
 183 subgroups. He advances two main arguments: (i) the consonant alternations proposed for proto-  
 184 Mixtecan (Longacre 1957; Rensch 1976), proto-Popolocan (Gudschinsky 1959) and proto-  
 185 Oto-Pamean (Bartholomew 1965) need not be analyzed as such nor reconstructed for proto-  
 186 Otomanguean, and (ii) Longacre's (1962: 35) theory of coda nasals having affected vowel  
 187 quality was incorrect, and proto-Otomanguean instead had 9 vowels, not 4 as Rensch proposed.

188 Kaufman (1983) mentions that his working file contained 480 Otomanguean cognate sets,  
189 but his monograph and other publications do not include all of them or indicate exactly how  
190 they relate to his sound correspondences.<sup>7</sup> Instead, he refers to Rensch's numbered cognate  
191 sets, which from there can be traced back to the primary data that went into the major subgroup  
192 reconstructions or worked forward through Kaufman's revised historical phonologies of the  
193 subgroups and Rensch's proto-Otomanguean phonology. What this means is that one will not  
194 find all of the primary data, intermediate reconstructions, and proto-Otomanguean  
195 reconstructions laid out together in Kaufman's monographs, and one will not find reference to  
196 all of Rensch's reconstructions that Kaufman considered to be flawed or too semantically  
197 lenient. However, Kaufman (1983) does include his revisions of 83 of Rensch's monosyllabic  
198 reconstructions and cognate sets that can only be accounted for in light of his own revised  
199 Otomanguean phonology. Kaufman also includes 18 bisyllabic proto-Otomanguean forms and  
200 cognate sets. In his web-published work on Otomanguean prehistory, Kaufman (2015a)  
201 includes 173 proto-Otomanguean reconstructions, 14 more for Western Otomanguean, 26 for  
202 Eastern Otomanguean, 15 for Oto-Pamean-Chinantec, 3 for Popolocan-Zapotecan, 14 for  
203 Amuzgo-Mixtecan, and 1 more particular to Tlapanec-Chorotegan, but without references to  
204 Rensch's sets.

205 For Kaufman's (1988) second major Otomanguean monograph he sifted through all  
206 grammatical descriptions of Otomanguean languages available at the time. Using his cross-  
207 subgroup sound correspondences, he presents his reconstruction of about 27 proto-  
208 Otomanguean tense, aspect, mood, voice, and nominalization markers and their positions of  
209 occurrence in the verbal templates of each major subgroup protolanguage. From there he  
210 reconstructs proto-Otomanguean verbal morphology, tracing function shifts and other

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<sup>7</sup> Kaufman's cognate sets file has been deposited for ingestion into the Archive of the Indigenous Languages of Latin America.

211 innovations in order to propose his higher-level phylogeny of the family. The innovations  
 212 defining Kaufman's (1988, 2016a) high-level subgrouping are listed below:<sup>8</sup>

213

214 Western Otomanguean: *\*ai* merged with *\*a*, *\*mu* HYPOTHETICAL, *\*kwa* 'go/come to'  
 215 auxiliary, *\*kwi* 'get up to', *\*ci* NEGATIVE,

216 Tlapanec-Chorotegan: *\*kkwa* ~ *\*kkwau* CAUSATIVE, *\*wai* IMPERSONAL, *\*ha*  
 217 IMPERATIVE, *\*tau* OPTATIVE, and maybe *\*ni* 'being'

218 Oto-Pamean–Chinantec: *\*ia* > *\*u*, monosyllabification of all roots, *\*mi* IMPERFECT,  
 219 *\*rV* STATIVE/PERFECTIVE

220 Eastern Otomanguean: *\*ia* merged with *\*i*, *\*ea* merged with *\*a*, *\*kwe* animal classifier,  
 221 maybe *\*se* CAUSATIVE

222 Amuzgo-Mixtecan: *\*ts* and *\*s* merged, *\*i*= INDEFINITE > DURATIVE; *\*kwe*  
 223 COMPLETIVE > POTENTIAL, causative and optative  
 224 constructions reformed as auxiliaries followed by main verb  
 225 in Potential Mood

226 Popolocan-Zapotecan: *\*au* merges with *\*u*, pOM *\*r* or *\*θ* > *\*t*, *\*(Y)ti* PERFECT >  
 227 PROGRESSIVE

## 228 2.4 Brown's challenge to Otomanguean

229 Brown (2015a) has reviewed some of the published Otomanguean major subgroup  
 230 reconstructions and Kaufman's (1983) monograph and concludes that Otomanguean is not  
 231 convincingly demonstrated as a genetic unit because the cross-subgroup sound  
 232 correspondences are not cross-referenced to cognate sets there or in Rensch's work, and  
 233 otherwise the evidence is not sufficient to rule out chance or extensive areal diffusion as reasons  
 234 for cross-subgroup lexical similarities (Brown 2015b). Since Otomanguean is a deep and highly  
 235 diversified family, and several Otomanguean subgroups have undergone significant  
 236 phonological change (§3), cognates across major subgroups are indeed difficult to recognize.

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<sup>8</sup> The reader may consult Kaufman (2016a) for proto-Otomanguean morphemes lost at each node and also for the innovations that define the major subgroups after the immediately higher level subgroups, e.g. from proto-Tlapanec-Chorotegan to proto-Mè'phàà-Subtiaba and from proto-Tlapanec-Chorotegan to proto-Chorotegan.

237 Furthermore, since most proto-Otomanguean lexical reconstructions are only single syllables  
238 of \*(C)CV shape, the potential for chance resemblance is relatively high (Ringe 1999),  
239 especially if the semantics of compared forms are not exact, as in many of Rensch's cognate  
240 sets. Kaufman's (1988) reconstructed morphemes and verbal template through the various  
241 levels of the family are crucial evidence in support of Otomanguean unity, but Brown's  
242 challenge will likely remain unresolved until somebody publishes further comparative  
243 phonological evidence illustrating regular sound correspondences across major groups that are  
244 cross-referenced to semantically tight cognate sets that yield more solid and numerous proto-  
245 Otomanguean reconstructions.

### 246 **3 Some typical Otomanguean features**

247 All Otomanguean languages appear to be tonal, and it is probable that proto-Otomanguean  
248 was tonal. Although Fernández de Miranda & Weitlaner (1961) maintained some doubt about  
249 Chiapanec and Mangué, Brinton (1886: 244) wrote that the Mangué "words for bird, snake and  
250 flower are the same; but Albornoz gives this very example to illustrate the importance of accent,  
251 *nolō*, a snake, *nolô*, a flower."

252 Tones seem to change faster than segments do, and they are more challenging to confidently  
253 reconstruct. Jossierand (1983: 243) states that "tone is among the first features to vary between  
254 towns speaking similar varieties of Mixtec," and Bartholomew (1994: 351) ran into "problems  
255 because the two contrastive tones of Matlatzinca seemed to correspond to any and all of the  
256 three or four contrastive tones of the other" Oto-Pamean languages. Despite such challenges,  
257 preliminary tonal reconstructions have been put forth for proto-Mixtecan (Longacre 1957),  
258 proto-Mixtec (Dürr 1987), proto-Chinantec (Rensch 1968), proto-Oto-Pamean (Bartholomew  
259 1965), proto-Mazatec (Gudschinsky 1959; Kirk 1966), proto-Popolocan (Gudschinsky 1959),  
260 proto-Zapotec (Benton 2001), proto-Chatino (Campbell & Woodbury 2010), and to some  
261 extent proto-Otomanguean (Rensch 1976).

262 The partly segmental and partly suprasegmental patterning of laryngeals or laryngealization  
 263 poses challenges in the synchronic analysis of some Otomanguean languages (Macaulay &  
 264 Salmons 1995; Golston & Kehrein 1998; Campbell 2014), especially when laryngeals interact  
 265 with tone (Bradley & Josserand 1982: 283; Silverman 1997; DiCanio 2012). These challenges  
 266 are only compounded in comparative studies (Longacre 1957: 75; Kirk 1966: 48; Fernández  
 267 de Miranda 1951: 72), and such complexities make Otomanguean an important and intriguing  
 268 case for understanding the diachrony of laryngeals, tone, and their interaction.

269 Contrastive vowel nasality is widespread in Otomanguean but absent in Zapotec, and  
 270 Matlatzinca and Tlahuica both lost it, though independently (Pérez 2007: 235). Kaufman  
 271 (2006a: 122) attributes these losses to ancient contact with non-Otomanguean prestige  
 272 languages. Vowel nasality is also reportedly mostly lost in Mazahua of San Miguel Tenoxtitlan  
 273 (Newman & Weitlaner 1950b), and Fernández de Miranda & Weitlaner (1961: 18) doubted that  
 274 there were nasal vowels in Chiapanec. While nasal vowel correspondences are robust across  
 275 Chatino languages, they are weak in Mixtecan (Longacre 1957: 30) and Mè'phàà (Suárez 1979:  
 276 372). Cross-family vowel nasality correspondences are likewise weak, and this has inspired  
 277 proposals of post-vocalic nasal consonants, and not nasal vowels, in proto-Otomanguean  
 278 (Rensch 1976: 38; Kaufman 1983).

279 Most Otomanguean languages lack rhythmic stress, but prosodic prominence falls on either  
 280 final or penultimate syllables of stems, with most roots being historically bisyllabic. Kaufman  
 281 (1983: 61) says that Zapotec, Mixtec and Cuicatec “shifted stress to the first syllable of stems.”  
 282 In Mixtec, the greatest degree of phonological contrast occurs in final syllables (Longacre  
 283 1957: 113), which probably reflects the earlier position of prominence. In Trique and Amuzgo,  
 284 prominence falls on final syllables (Josserand 1983: 140), suggesting that that was the proto-  
 285 Mixtecan pattern. Proto-Mazatec is reconstructed with final-syllable prominence (Gudschinsky  
 286 1956: 7; Kirk 1966: 9, 167). In Mè'phàà, long vowels, nasal vowels, and multiple tones occur

287 only in final syllables (Suárez 1983: 6; Carrasco Zúniga 2006: 68), and while the Chiapanec  
 288 records remain ambiguous for tone or accent, any traces of these are always on final syllables  
 289 (Fernández de Miranda & Weitlaner 1961: 18). While Muntzel (1986: 45) reports that in  
 290 Tlahuica polysyllabic words always have stress on initial syllables, Kaufman (1983: 61)  
 291 cautions that Oto-Pamean, Chinantec and Amuzgo preserve only one syllable of what in proto-  
 292 Otomanguean were perhaps up to four-syllable words or stems with clitic(s). The weight of  
 293 evidence thus suggests that proto-Otomanguean had final-syllable prominence: fewer changes  
 294 are implied than in the reverse direction, and nobody has suggested any explanation for  
 295 prominence shifts onto final syllables as Kaufman has proposed for the reverse.

296 Otomanguean languages have head-initial syntax and predominantly head-marking  
 297 morphology. Verbs may consist of multiple phonological words but tend to have a fairly fixed  
 298 templatic structure and consist minimally of a root with some aspect or mood inflection.  
 299 Kaufman's (1988) reconstructed proto-Otomanguean (pre-)verbal template is shown in Figure  
 300 2. The preverbal slots may be prefixes, proclitics or particles, depending on the language.

NEG	POS 4	POS 3	POS 2	POS 1	DERV	root
negation	tense and time adverbs	aspect and mood	plural subject	auxiliary or higher predicate	deriv- ation	<b>verb</b> root

301 Figure 2. proto-Otomanguean verbal template (Kaufman 1988)

302 While the verbal template has been reduced in some Otomanguean subgroups (e.g. Amuzgo,  
 303 see Apostol Polanco 2014) and restructured in others (Oto-Pamean, Kaufman 2015a: 10), it has  
 304 remained relatively stable across the family, even if the prosodic status of some of the positions  
 305 may vary across subgroups or languages. The Zochina Zapotec example in (1) shows an initial

306 aspect prefix (position 3), a causative prefix in the auxiliary slot (position 1), a verb root, and  
 307 subject and object enclitics.<sup>9</sup>

308 (1) Zochina Zapotec (López Nicolás 2009: 42)

309 *sh-w-âw=â=băʔ*

310 ICPL-CAUS-eat=S.1SG=O.3INF

311 ‘I feed him.’

312 The Mè’phàà example in (2) shows aspect in position 3, a causative marker in the derivational  
 313 slot, the verb root, and an adverbial enclitic among the post-verbal person markers. Such  
 314 adverbial enclitics are found widely throughout Otomanguean: e.g. Mazatec (Pike 1948: 124),  
 315 Chinantec (Anderson 1990: 109), Zapotec (López Cruz 1997: 82), and Chatino (Rasch 2002:  
 316 139).

317 (2) Malinaltepec Mè’phàà (Navarro Solano 2012: 58)

318 *ni<sup>l</sup>-tsi<sup>2</sup>-kh-a<sup>2</sup>=maʔ<sup>3</sup>=laʔ<sup>l</sup>=ne*

319 CPL-CAUS-burn-A.3SG.INAN=already=E.2PL=that

320 ‘You (pl.) already burned that.’

321 The Chalcatongo Mixtec example in (3) shows a temporal adverbial prefix (position 4), an  
 322 aspect prefix (position 3) that is cognate to the Mè’phàà one in (2), a marker of plural subject  
 323 (position 2), and verb root.

324 (3) Chalcatongo Mixtec (Macaulay 1996: 74)

325 *a-ni-ka-xáʔñā=Ø*

326 already-CPL-PL-cut=3

327 ‘They already cut (it).’

328 Otomanguean languages are noted for having impressively complex verbal inflectional  
 329 classes, with rich allomorphy in person or aspect/mood inflection (usually position 3 and/or

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<sup>9</sup> A = absolutive, CAUS = causative, CPL = Completive Aspect, E = ergative, ICPL = Incompletive Aspect, INAN = inanimate, INF = informal, O = object, PL = plural, S = subject, SG = singular

330 tone change on the stem) (Smith Stark 2002; Wichmann 2006; Campbell 2011a; Palancar  
331 2011).

#### 332 **4 Language and prehistory**

333 From Otomanguean's great time depth, spread, and central position in Mesoamerica we can  
334 imagine that Otomanguean groups played important roles in the development of Mesoamerican  
335 civilization. A key component of that development was agriculture, particularly the nutritious  
336 and productive triad of maize, beans, and squash (Kirchhoff 1967[1943]; Gasco et al. 2007).  
337 After "squash seed, and cobs of wild or incipiently domesticated maize" were excavated from  
338 a cave in the Tehuacán Valley of southern Puebla, carbon dated at  $5560 \pm 250$ , and then older  
339 remains were found there (Crane & Griffin 1962: 200), the Tehuacán Archaeological-Botanical  
340 Project was formed (Byers 1967; MacNeish 1967). Besides maize and squash, the Tehuacán  
341 Project found remains of beans, gourds, domesticated and wild avocado, black and white  
342 sapote, guava, hog plum, cotton, chili pepper, amaranth, maguey, and more.

343 Since Rensch (1966) had reconstructed proto-Otomanguean words for maize, beans, squash,  
344 chili, avocado, and cotton, and the Tehuacán Valley is located centrally in Otomanguean  
345 territory, Tehuacán seems a likely early Otomanguean center (Amador Hernández & Casasa  
346 García 1979). Glottochronological calculations, though now largely considered unreliable, had  
347 placed proto-Otomanguean contemporaneous with the Coxcatlán phase of the Tehuacán  
348 sequence (Hopkins 1984), and the Coxcatlán phase showed evidence for cultivation and greater  
349 sedentism (MacNeish 1967: 23). These findings led to the hypothesis that the location of the  
350 Otomanguean homeland, or *Urheimat*, was in or around the Tehuacán Valley. Kaufman (2015a:  
351 53) finds that reconstructed proto-Otomanguean vocabulary is "compatible with a somewhat  
352 dry highland habitat after the domestication of some plants and before the rise of full-blown  
353 agriculture and village life," which fits the Tehuacán profile. Since most of the same vocabulary  
354 is reconstructed for proto-Mayan (Kaufman 1976) and proto-Mixe-Zoquean (Campbell &



355 Kaufman 1976), the geographic component is essential to the hypothesis of the Tehuacán  
356 Valley as Otomanguean homeland. Not only is Tehuacán in Otomanguean territory, but it is  
357 occupied or surrounded by languages of several major subgroups of the family (Popolocan,  
358 Chinantec, and Mixtecan). Thus from the perspectives of linguistic “centre of gravity” (Sapir  
359 1916: 79–82,) and a fewest moves model of language spread (Dyen 1956), Tehuacán remains  
360 a viable candidate for the Otomanguean homeland.

361 Winter et al. (1984: 68) point out that “the Tehuacán Valley is not the only center of early  
362 agriculture nor was it necessarily more important than other centers.” Evidence for  
363 domesticated maize and squash that predates Coxcatlán has since been found in the Guilá  
364 Naquitz Cave near Mitla, Oaxaca (Piperno & Flannery 2000) and near Iguala, Guerrero in the  
365 Central Balsas River Valley (Ranere et al. 2009; Piperno et al. 2009), where the wild ancestors  
366 of maize (teosinte) and squash occur. Therefore, while Tehuacán is still an important site, it is  
367 no longer considered to be the place where maize and squash domestication began.

368 Since Otomanguean is more diversified and presumably temporally deeper than Mayan,  
369 Mixe-Zoquean, and Totonacan, one may wonder if Otomanguean language speakers were the  
370 innovators of Mesoamerican agriculture. With Otomanguean’s great spread, in Mesoamerican  
371 terms at least, this would accord with the farming/language dispersal hypothesis (Bellwood  
372 1991; Bellwood & Renfrew 2002; Diamond & Bellwood 2003). However, speakers of widely  
373 spread language groups are not always the innovators of the agricultural practices that may  
374 enable their spread (Nichols 1997: 375; Comrie 2002), and it is difficult, but worth trying, to  
375 correlate linguistic evidence with archaeological evidence for incipient agriculture. Recent  
376 “paleobiolinguistic” research has suggested that Otomanguean terms for maize, beans, squash,  
377 and chili pepper are some of the oldest reconstructable words for those crops (Brown et al.  
378 2013a, 2013b, 2014a, 2014b), but Brown (2015a) later cautions that inferences based on those  
379 findings should be viewed as tentative because Otomanguean has not yet been demonstrated to

380 be a language family in any published thorough application of the comparative method (Brown  
381 2015b).

382 Kaufman (2015a: 11-12) suggests possible homelands for the Otomanguean major  
383 subgroups, all of which fall within the wider reach of the Tehuacán tradition. His hypotheses  
384 are based on evidence from linguistic geography, his Otomanguean high-level subgrouping  
385 (Kaufman 1988), and language contact, either among Otomanguean groups or between  
386 Otomangueans and non-Otomangueans. In one case, a toponym provides some evidence: since  
387 the Mangues “were also known as Chorotegas (Nawa /cholol-te:ka-h/ ‘people from /cholol-  
388 la:n/’; /cholol-la:n/ is Cholula) it seems feasible to locate the Mang[u]ean homeland in the  
389 valley of Puebla, whose main center was Cholula” (Kaufman 2015a: 11).

390 While ethnonyms and toponyms may hold such clues for identifying the language of earlier  
391 inhabitants of an area (Vennemann 2003), toponymical evidence for Mesoamerican prehistory  
392 is complicated by a widespread and enduring practice of calquing, or loan translation. For  
393 example, the Spanish name of the town Tututepec, near the coast of Oaxaca, is from Nahuatl  
394 *to:to:tl tepe:-k* ‘bird hill-on’. In colonial Mixtec it was *yucu-dzaa* ‘mountain-(of)bird’ (Jiménez  
395 Moreno 1962: 98), and in Zenzontepec Chatino it is *kē kinī* ‘mountain (of)bird.’ Since the  
396 Nahuas were likely a late arrival to Mesoamerica (Fowler 1983: 245; Kaufman & Justeson  
397 2010)—though that is still disputed (Hill 2001, 2012)—we might tentatively rule out Nahuatl as  
398 the original source of the name. Linguistic evidence suggests that Mixtecs expanded towards  
399 the coast from near San Juan Mixtepec (Bradley & Josserand 1982: 293, 297; Josserand et al  
400 1984: 156), and the Mixtec Lord 8 Deer “Jaguar Claw” ruled the Coastal kingdom of Tututepec  
401 around 1000-1100 C.E. (Smith 1963; Spores 1993; Joyce et al. 2004). We might therefore  
402 tentatively rule out Mixtec and infer that the name originated in Chatino; some epigraphic  
403 (Urcid 1993) and physical anthropological (Christensen 1998) evidence suggests earlier  
404 occupation of the region by Chatinos. However, the inability to linguistically determine the

405 directionality of the calquing between Mixtec and Chatino, and the possibility that one or both  
406 of those groups might have calqued the name from yet another language group, leave some  
407 doubt about the name's ultimate origin. Nevertheless, this type of converging evidence from  
408 different fields enables us to posit Chatino as the earliest detectable source. While probing  
409 ancient prehistory in toponyms presents some challenges, toponyms may provide more  
410 transparent evidence that bears on historical linguistic or ethnohistorical questions of the more  
411 recent past (Merrifield 1966; Doesburg & Swanton 2011).

412 Language contact offers a window onto prehistory, but relatively little such work exists for  
413 Otomanguean languages. Kaufman & Justeson (2010: 222) note that in "Mesoamerica, lexical  
414 borrowing among languages occurs at fairly low levels, so its occurrence reflects a serious  
415 amount of interaction," which is what they claim for cases of borrowing from Mixe-Zoquean  
416 into Zapotecan and other Mesoamerican languages under Olmec influence (Kaufman &  
417 Justeson 2007: 200). A couple of other reported cases involve proto-Oto-Pamean-Chinantec  
418 words borrowed into proto-Uto-Aztecan (Hill 2012) and Mixtec borrowings in Chatino  
419 (Campbell 2013: 414).

420 If lexical borrowing is rare in Mesoamerica, perhaps grammatical influence is a more  
421 common outcome of language contact, as in the Vaupés region of the northwest Amazon  
422 (Sorensen 1967; Aikhenvald 2002; Epps 2006). Quite a few cases have been reported, both  
423 between Otomanguean groups and between Otomangueans and others. Kaufman (1988)  
424 proposes a Central Otomanguean contact area in which Popolocan borrowed several  
425 grammatical markers from Chiapanec-Mangue, presumably before the latter migrated south:  
426 *\*wi* IMPERSONAL, *\*o* plural subject, *\*tau* OPTATIVE, *\*ha* IMPERATIVE. Other reported cases  
427 include a Mixtec numeral classifier borrowed into Chatino (Sullivant 2012), Chatino  
428 phonological patterns transferred into Pochutec Nahua (Bartholomew 1980), noun classifiers  
429 borrowed from Chiapanec into Mayan languages (Hopkins 2012), and Mayan (Huastec)

430 influence on Otomían syntax (Kaufman 2015a). In an archaeological survey, Balkansky et al.  
431 (2000) conclude that “Monte Albán [Zapotec] and the Mixtec states arose together from an  
432 interacting nexus of pre-urban societies.” Such a proposal should impel linguists to search for  
433 parallel evidence from language contact. So far, not much evidence for contact between  
434 Zapotec and Mixtec has been found, though Kaufman (1988) identifies a pluralizer *\*kka* that  
435 is found only in those two groups (see example (3)).

436 Another important resource for Otomanguean historical linguistics and prehistory are  
437 ancient Mesoamerican writing systems and iconography, some of which were used by  
438 Otomanguean groups. Of these, the ancient Zapotec (Caso 1928; Urcid 2001; Marcus 2003)  
439 and Mixtec writing systems (Caso 1965; Smith 1973) are the best known, but the Ñuiñe script  
440 (Moser 1977) of the Mixteca Baja is another.

441 Though not from the prehistoric era, another valuable source for Otomanguean historical  
442 linguistics is the documentary and descriptive work carried out by Spanish friars in the colonial  
443 period. These works, often of good analytical quality, give us text translations and snapshots  
444 of the grammar and lexicon of earlier forms of Otomanguean languages from as early as the  
445 1550s. A few notable examples are Castro’s (1557) Matlatzinca vocabulary written in the  
446 margins of a copy of Molina’s Nahua dictionary; Córdova’s (1578a, 1578b) Antequera (Oaxaca  
447 City) Zapotec grammar and dictionary; and Reyes’ (1593) Mixtec grammar and Alvarado’s  
448 1962 [1593] Mixtec vocabulary. Perhaps even more valuable, and certainly more culturally  
449 rich, are the numerous ethnohistorical records of Otomanguean languages written by their  
450 speakers, which exist from all periods after the Conquest (Terraciano 2001; Restall et al 2005;  
451 Oudijk 2008; Doesburg & Swanton 2011). For good examples of incorporation of early post-  
452 Conquest data into reconstructions, see Josserand et al. (1984) for Mixtec and Pérez (2007) for  
453 Matlatzinca-Tlahuica.

## 454 **5 Proposals of external and long-distance relationship**

455 Using lexicostatistics and glottochronology, Swadesh (1959; 1960) relates Otomanguean not  
456 only to the isolate Huave but also to other neighboring language groups, particularly Purépecha  
457 (Tarascan), Miskito (Misumalpan) and Chibchan. He proposed a particularly close relationship  
458 with Huave (Swadesh 1960, 1964a, 1964b). Rensch (1977b: 164) accepted the Huave idea,  
459 Longacre (1977: 122) was cautiously receptive, Kaufman (1988) was skeptical, and not much  
460 has been heard about it since.

461 Witkowski & Brown (1978) state that Otomanguean belongs to a “Mesoamerican phylum”  
462 with Mayan, Mixe-Zoquean, Huave, Totonacan, Lencan, and Tol (Jicaque), but the only  
463 linguistic evidence they refer to is their proposed connection between Mayan and Mixe-  
464 Zoquean (Brown & Witkowski 1979), which was hotly debated for a time (Campbell &  
465 Kaufman 1980, 1983; Witkowski & Brown 1981). Mora-Marín (2016: 128) recently took a  
466 deeper look into the possible Mayan and Mixe-Zoquean connection using the comparative  
467 method, concluding that it “can be supported, tentatively,” but he does not consider any  
468 possible Otomanguean link.

469 Greenberg (1987: 123) placed Otomanguean in a “Central Amerind” group with Uto-  
470 Aztecan and Kiowa Tanoan. This was in turn part of his proposed Amerind macro-phylum,  
471 along with all of the indigenous languages of the Americas except for the Na Dené and Eskimo-  
472 Aleut families. Although a few Americanist linguists were receptive to Greenberg’s results  
473 (Golla 1987; Hymes 1987), Greenberg’s methodology of mass comparison was flawed (Ringe  
474 1992: 71–76), and his American languages classification has been heavily criticized (see e.g.  
475 Chafe 1987; Campbell 1988; 1997; Matisoff 1990; Rankin 1992). Crucially, Greenberg’s  
476 flawed classification of American languages should not be correlated with evidence about  
477 human prehistory from other disciplines, such as genetics (Bolnick et al. 2004), archaeology,  
478 or ethnohistory.

479 Since Sapir (1925a, 1925b) classified Subtiaba as Hokan, and Rensch later showed Subtiaba  
480 to be Otomanguean, it is worth considering whether Otomanguean and Hokan are ultimately  
481 related. While Hokan itself is not universally accepted (Campbell & Oltrogge 1980: 222; Poser  
482 1995; Campbell 1997: 295; Mithun 1999: 304), Kaufman (2006b: 366, 2015b: 1, 2016a) does  
483 believe Hokan is a family and that Otomanguean is related to it. More work is needed to explore  
484 this possible connection, but its time depth will approach the limits of the comparative method.

## 485 **6 Current trends and future directions**

486 From the late 1940s through the 1960s, significant historical linguistic work on Otomanguean  
487 languages was carried out, leading to reconstructions of parts of six of Otomanguean's eight  
488 major subgroups. This trajectory led Longacre (1964: 1016) to proclaim that the then  
489 forthcoming proto-Otomanguean reconstruction "will not be incomparable with the  
490 accomplishment of Indo-European scholarship." While the diversity of Otomanguean may  
491 rival that of Indo-European, and Rensch's proto-Otomanguean work was indeed a great  
492 accomplishment, the cavalry did not come, and few scholars aside from Kaufman have been  
493 working on historical linguistics at the higher levels of Otomanguean.

494 Several Otomanguean major subgroups have their internal subgrouping sketched out  
495 (Campbell, to appear), and we have seen additional important contributions to the  
496 reconstruction of some of the families and their subgroups, especially Mixtec (Josserand 1983),  
497 Zapotec (Fernández de Miranda 1995; Benton 1988; Kaufman 2016b), Chinantec (Rensch  
498 1989), Trique (Matsukawa 2005), and Chatino (Campbell & Cruz 2010; Campbell 2013, In  
499 press). These and future works should provide the basis for advancing the historical linguistics  
500 of the higher levels of the family. What is currently needed is a coming together of experts on  
501 the various lower-level families to further support or revise the higher-level classification and  
502 reconstructions. Further interdisciplinary work involving linguists, ethnohistorians,

503 archaeologists, and geneticists is also needed to gain a clearer picture of Otomanguean and  
 504 Mesoamerican prehistory.

505 Documentation and description of Otomanguean languages is rapidly expanding, as  
 506 evidenced by the biannual *Coloquio de Lenguas Otomangues y Vecinas* and the *Taller de Tonos*  
 507 and *Taller de Gramáticas Pedagógicas* at the Biblioteca Juan de Córdova in Oaxaca, supported  
 508 by Mexico's National Institute for Indigenous Languages (INALI) and the Harp Helú  
 509 Foundation. But this new era of Otomanguean linguistics has an important and transformative  
 510 difference from earlier ones: speakers of Otomanguean languages are now training as linguists  
 511 in greater numbers (several are cited in this article), especially in the graduate program at  
 512 CIESAS in Mexico. A new collaborative model with greater community participation and  
 513 leadership is propelling the current growth of Otomanguean linguistics, which has the potential  
 514 to significantly advance Otomanguean historical linguistics. Unfortunately, some  
 515 Otomanguean language groupings, such as Ixcatec, Chocho, Cuicatec, Matlatzinca, Tlahuica,  
 516 Chichimeco Jonaz, and Northern Pame remain sparsely documented or are facing serious  
 517 endangerment, and the vitality of other Otomanguean languages is declining as a result of 500  
 518 years of colonialism, marginalization and now neo-liberalism and its continued exploitation.  
 519 On the other hand, technological advances and linguistic expertise among community members  
 520 and educators in communities and in academia offers some potential to stabilize languages, or  
 521 at least better document them.

## 522 **References**

- 523 Aikhenvald, Alexandra Y. 2002. *Language contact in Amazonia*. Oxford: Oxford University Press.
- 524 Alvarado, Francisco de. 1962 [1593]. *Vocabulario en lengua mixteca* (Wigberto Jiménez Moreno, ed.).  
 525 México: Instituto Nacional de Antropología e Historia.
- 526 Amador Hernández, Mariscela & Patricia Casasa García. 1979. Un análisis cultural de juegos léxicos  
 527 reconstruidos del proto-Otomangue. In Nicholas A. Hopkins & J. Kathryn Josserand (eds.),

- 528 *Estudios lingüísticos en lenguas otomangues*, 13–19. México, D.F.: Instituto Nacional de  
529 Antropología e Historia.
- 530 Anderson, Judi Lynn. 1990. *Comaltepec Chonantec Syntax*. Dallas: Summer Institute of Linguistics.
- 531 Angulo, Jaime de. 1926a. The development of affixes in a group of monosyllabic languages of Oaxaca.  
532 *Language* 2(1): 46–61.
- 533 Angulo, Jaime de. 1926b. The development of affixes in a group of monosyllabic languages of Oaxaca  
534 (concluded). *Language* 2(2): 119–133.
- 535 Angulo, Jaime de, & L. S. Freeland. 1935. The Zapotecan linguistic group: A comparative study of  
536 Chinanteco, Chocho, Mazateco, Cuicateco, Mixteco, Chatino, and especially of Zapoteco proper  
537 and its dialects. *International Journal of American Linguistics* 8(1): 1–38.
- 538 Apóstol Polanco, Jair. 2014. Clases flexivas verbales en el amuzgo de Xochistlahuaca, Guerrero. M.A.  
539 thesis, Centro de Investigaciones y Estudios Superiores en Antropología Social, D.F.
- 540 Balkansky, Andrew K; Stephen A. Kowalewski; Verónica Pérez Rodríguez, Thomas J. Pluckhahn;  
541 Charlotte A. Smith; Laura R. Stiver; Dmitri Beliaev; John F. Chamblee; Verence Y. Heredia  
542 Espinoza & Roberto Santos Pérez. 2000. Archaeological Survey in the Mixteca Alta of Oaxaca,  
543 Mexico. *Journal of Field Archaeology* 27: 365–389.
- 544 Bartholomew, Doris Aileen. 1959. Proto-Otomi-Pame. MA thesis, University of Pennsylvania.
- 545 Bartholomew, Doris. 1965. The reconstruction of Otopamean (Mexico). PhD dissertation, The  
546 University of Chicago.
- 547 Bartholomew, Doris. 1980. Otomanguean influence on Pochutla Aztec. *International Journal of*  
548 *American Linguistics* 46: 106–116.
- 549 Bartholomew, Doris. 1994. Panorama of studies in Otopamean languages. In Leonardo Manrique;  
550 Yolanda Lastra & Doris Bartholomew (eds.), *Panorama de los estudios de las lenguas indígenas*  
551 *de México*, Tomo I, 335–377. Quito: Ediciones Abya-Yala.
- 552 Bellwood, Peter. 1991. The Austronesian dispersal and the origins of languages. *Scientific American*  
553 265(1): 88–93.



- 554 Bellwood, Peter & Colin Renfrew (eds.). 2002. *Examining the Farming/language Dispersal*  
 555 *Hypothesis*. Cambridge: McDonald Institute for Archaeological Research.
- 556 Belmar, Francisco. 1905. *Familia Mixteco-Zapoteca y sus relaciones con el Otomí. Familia Zoque-*  
 557 *Mixe. Chontal. Huave y Mexicano*. México: Imprenta Particular.
- 558 Benton, Joe. 1988. Proto-Zapotec phonology. Ms.
- 559 Benton, Joe. 2001. A reconstruction of the tone system of Proto Zapotec. Ms.
- 560 Bergsland, Knut & Hans Vogt. 1962. On the validity of glottochronology. *Current Anthropology* 3(2):  
 561 115–153.
- 562 Bolnick (Weiss), Deborah A.; Beth A. (Schultz) Shook; Lyle Campbell & Ives Goddard. 2004.  
 563 Problematic use of Greenberg's linguistic classification of the Americas in studies of Native  
 564 American genetic variation. *The American Journal of Human Genetics* 75(3): 519–522.
- 565 Bradley, C. Henry & J. Kathryn Josserand. 1982. El protomixteco y sus descendientes. *Anales de*  
 566 *Antropología* 19(2): 279–343.
- 567 Bright, William. 1978. Book notice for David Oltrogge & Calvin R. Rensch (1977). *Language* 54(2):  
 568 507–508.
- 569 Brinton, Daniel G. 1886. Notes on the Mangue: an extinct dialect formerly spoken in Nicaragua.  
 570 *Proceedings of the American Philosophical Society* 23(122): 238–257.
- 571 Brinton, Daniel G. 1891. *The American Race: A linguistic classification and ethnographic description*  
 572 *of the native tribes of North and South America*. New York: N. D. C. Hodges.
- 573 Brinton, Daniel G. 1892. On the Mazatec language of Mexico and its affinities. *Proceedings of the*  
 574 *American Philosophical Society* 30(137): 31–39.
- 575 Brown, Cecil H. 2015a. Paleobiolinguistics of New World crops and the Otomanguean language family.  
 576 *Ethnobiology Letters* 6(1): 189–191.
- 577 Brown, Cecil H. 2015b. Comparative Otomanguean: A review and evaluation. Ms., Northern Illinois  
 578 University.

- 579 Brown, Cecil. H.; Charles. R. Clement; Patience Epps; Eike Luedeling & Søren Wichmann. 2013a. The  
580 paleobiolinguistics of domesticated chili pepper (*Capsicum* spp.). *Ethnobiology Letters* 4: 104-1–  
581 11.
- 582 Brown, Cecil. H.; Charles. R. Clement; Patience Epps; Eike Luedeling & Søren Wichmann. 2014a. The  
583 paleobiolinguistics of domesticated maize (*Zea mays* L.). *Ethnobiology Letters* 5: 52–64.
- 584 Brown, Cecil. H.; Charles. R. Clement; Patience Epps; Eike Luedeling & Søren Wichmann. 2014b. The  
585 paleobiolinguistics of the common bean (*Phaseolus vulgaris* L.). *Ethnobiology Letters* 5: 104–115.
- 586 Brown, Cecil. H.; Eike Luedeling; Søren Wichmann & Patience Epps. 2013b. The paleobiolinguistics  
587 of domesticated squash (*Cucurbita* spp.). In Dana Lepofsky & Marsha Quinlan (eds.),  
588 *Explorations in Ethnobiology: The Legacy of Amadeo Rea*, 132–161. Denton, TX: Society of  
589 Ethnobiology.
- 590 Brown, Cecil H. & Stanley R. Witkowski. 1979. Aspects of the phonological history of Mayan-  
591 Zoquean. *International Journal of American Linguistics* 45(1): 34–47.
- 592 Byers, Douglas S. (ed.). 1967. *The Prehistory of the Tehuacan Valley*, Vol. 1: Environment and  
593 Subsistence. Austin, TX: University of Texas Press.
- 594 Callaghan, Catherine A. & Wick R. Miller. 1962. Swadesh's Macro Mixtecan hypothesis and English.  
595 *Southwestern Journal of Anthropology* 18(3): 278–285.
- 596 Campbell, Eric. 2011. Zenzontepec Chatino aspect morphology and Zapotecan verb classes.  
597 *International Journal of American Linguistics* 77(2): 219–246.
- 598 Campbell, Eric. 2013. The internal diversification and subgrouping of Chatino. *International Journal*  
599 *of American Linguistics* 79(3): 395–420.
- 600 Campbell, Eric W. 2014. Aspects of the Phonology and Morphology of Zenzontepec Chatino, a  
601 Zapotecan Language of Oaxaca, Mexico. PhD dissertation, University of Texas at Austin.
- 602 Campbell, Eric W. In press. Una mirada al desarrollo fonológico del protochatino. In: Lucero Meléndez  
603 Guadarrama; Cristina Buenrostro & Macela San Giacomo Trinidad (eds.), *Discusiones recientes*  
604 *en torno a la lingüística histórica indomexicana*. Mexico, D.F.: UNAM.

- 605 Campbell, Eric W. To appear. Otomanguean historical linguistics: exploring the subgroups. *Language*  
606 *and Linguistics Compass*.
- 607 Campbell, Eric & Emiliana Cruz. 2010. El sistema numérico del proto-chatino. In *Proceedings of the*  
608 *Conference on Indigenous Languages of Latin America-IV*. Austin, Texas: AILLA.
- 609 Campbell, Eric, & Anthony C Woodbury. 2010. The comparative tonology of Chatino: A prolegomenon.  
610 Paper presented at the Society for the Study of the Indigenous Languages of the Americas, Annual  
611 Meeting, Baltimore, MD.
- 612 Campbell, Lyle. 1988. Review article: *Language in the Americas*, by Joseph H. Greenberg, 1987.  
613 *Language* 64(3): 591–615.
- 614 Campbell, Lyle. 1997. *American Indian Languages: The historical linguistics of Native America*.  
615 Oxford: Oxford University Press.
- 616 Campbell, Lyle & Terrence Kaufman. 1976. A linguistic look at the Olmecs. *American Antiquity* 41(1):  
617 80–89.
- 618 Campbell, Lyle & Terrence Kaufman. 1980. On Mesoamerican linguistics. *American Anthropologist*,  
619 New Series 82(4): 850–857.
- 620 Campbell, Lyle & Terrence Kaufman. 1983. Mesoamerican historical linguistics and distant genetic  
621 relationship: getting it straight. *American Anthropologist*, New Series 85(2): 362–372.
- 622 Campbell, Lyle & Terrence Kaufman. 1985. Mayan linguistics: where are we now? *Annual Review of*  
623 *Anthropology* 14: 187–198.
- 624 Campbell, Lyle; Terrence Kaufman & Thomas C. Smith Stark. 1986. Meso-America as a linguistic area.  
625 *Language* 62: 530–570.
- 626 Campbell, Lyle & David Oltrogge. 1980. Proto-Tol (Jicaque). *International Journal of American*  
627 *Linguistics* 46(3) 205–233.
- 628 Campbell, Lyle & William J. Poser. 2008. *Language Classification: history and method*. Cambridge:  
629 Cambridge University Press.

- 630 Carrasco Zúñiga, Abad. 2006. Los procesos morfofonológicos de la lengua Mè'phàà. MA thesis, Centro  
631 de Investigaciones y Estudios Superiores en Antropología Social, D.F.
- 632 Casasa García, Patricia. 1979. Parentesco proto-otomangue: reconstrucción en base al análisis  
633 componencial. In Nicholas A. Hopkins and J. Kathryn Josserand (eds.), *Estudios lingüísticos en*  
634 *lenguas otomangues*, 25–30. México, D.F.: Instituto Nacional de Antropología e Historia.
- 635 Caso, Alfonso. 1928. *Las estelas zapotecas*. México: Talleres Gráficos de la nación.
- 636 Caso, Alfonso. 1965. Mixtec Writing and Calendar. In Gordon R. Willey & Robert Wauchope (eds.),  
637 *Handbook of Middle American Indians 3, Part 2: The archaeology of southern Mesoamerica*, 948-  
638 961. Austin, Texas: University of Texas Press.
- 639 Castro, Andres de. 1557. Vocabulario de la lengua matlatzinga. (In the margins of Molina's Vocabulario  
640 de la lengua castellana y mexicana, 1555). New York: Library of the Museum of the American  
641 Indian.
- 642 Chafe, Wallace. 1987. Review of *Language in the Americas*, by Joseph H. Greenberg, 1987. *Current*  
643 *Anthropology* 28(5): 652–653.
- 644 Christensen, Alexander F. 1998. Colonization and microevolution in Formative Oaxaca, Mexico. *World*  
645 *Archaeology* 30(2): 262–285.
- 646 Coe, Michael D. 1968. *America's First Civilization: Discovering the Olmec*. New York: American  
647 Heritage.
- 648 Comrie, Bernard. 2002. Farming dispersal in Europe and the spread of the Indo-European language  
649 family. In Peter Bellwood & Colin Renfrew (eds.), *Examining the Farming/language Dispersal*  
650 *Hypothesis*, 409–419. Cambridge: McDonald Institute for Archaeological Research.
- 651 Córdova, Juan de. 1578a. *Arte en lengua zapoteca*. Mexico: Casa de Pedro Balli. Republished by  
652 Nicolás León as *Arte del idioma zapoteco de Juan de Córdova* (Morelia, Michoacán: Imprenta del  
653 Gobierno en la Escuela de Artes, 1886). A facsimile edition of León's edition published as *Arte del*  
654 *idioma zapoteco* (Mexico City: Ediciones Toledo and INAH, 1987).
- 655 Córdova, Juan de. 1578b. *Vocabulario en lengua zapoteca*. México: Pedro Charre y Antonio Rodrigo.

- 656 Crane, H. R. & James B. Griffin. 1962. University of Michigan Radiocarbon Dates VII. *Radiocarbon*  
657 4: 183–203.
- 658 Crowley, Terry & Claire Bowern. 2010. *An Introduction to Historical Linguistics*, 4th ed. Oxford:  
659 Oxford University Press.
- 660 Diamond, Jared & Peter Bellwood 2003. Farmers and their languages: the first expansions. *Science* 300:  
661 597–603.
- 662 DiCanio, Christian T. 2012. Coarticulation between tone and glottal consonants in Itunyoso Trique.  
663 *Journal of Phonetics* 40: 162–176.
- 664 Doesburg, Bas van & Michael W. Swanton. 2011. Mesoamerican philology as an interdisciplinary  
665 study: the Chochon (Xru Ngiwa) “barrios” of Tamazulapan (Oaxaca, Mexico). *Ethnohistory* 58(4):  
666 613–652.
- 667 Dürr, Michael. 1987. A preliminary reconstruction of the proto-Mixtec tonal system. *Indiana* 11: 19–  
668 61.
- 669 Dyen, Isidore. 1956. Language distribution and migration theory. *Language* 32: 611–626.
- 670 Ecker, Lawrence. 1939. Relationship of Mixteca to the Otomian languages. *El México Antiguo* 4: 209–  
671 240.
- 672 Epps, Patience. 2006. The Vaupés melting pot: Tucanoan influence on Hup. In Alexandra Y. Aikhenvald  
673 & R. M. W. Dixon (eds.), *Grammars in Contact: A Cross-Linguistic Typology*, 267–289. Oxford:  
674 Oxford University Press.
- 675 Fernández de Miranda, María Teresa. 1951. Reconstrucción del protopopoloca. *Revista Mexicana de*  
676 *Estudios Antropológicos* 12: 61–93.
- 677 Fernández de Miranda, María Teresa. 1995. *El protozapoteco*. México, D.F.: El Colegio de México and  
678 Instituto Nacional de Antropología e Historia.
- 679 Fernández de Miranda, María Teresa; Morris Swadesh & Roberto J. Weitlaner. 1959. Some findings on  
680 Oaxaca language classification and culture terms. *International Journal of American Linguistics*  
681 25(1): 54–58.

- 682 Fernández de Miranda, María Teresa & Roberto J. Weitlaner. 1961. Sobre algunas relaciones de la  
683 familia Mangué. *Anthropological Linguistics* 3(7): 1–99.
- 684 Fowler, Catherine S. 1983. Some lexical clues to Uto-Aztecan prehistory. *International Journal of*  
685 *American Linguistics* 49(3): 224–257.
- 686 Gasco, Janine; Marilyn A. Masson; Robert M. Rosenswig & Michael E. Smith. 2007. Origins and  
687 development of Mesoamerican civilization. In Robert M. Carmack; Janine L. Gasco & Gary H.  
688 Gossen (eds.), *The Legacy of Mesoamerica: History and culture of a Native American civilization*,  
689 2<sup>nd</sup> ed., 38–76. New York: Routledge.
- 690 Golla, Victor. 1987. Review of *Language in the Americas*, by Joseph H. Greenberg, 1987. *Current*  
691 *Anthropology* 28(5): 657–659.
- 692 Golston, Chris & Wolfgang Kehrein. 1998. Mazatec onsets and nuclei. *International Journal of*  
693 *American Linguistics* 64(4): 311–337.
- 694 Greenberg, Joseph H. 1987. *Language in the Americas*. Stanford, CA: Stanford University Press.
- 695 Guadalupe Joaquina, Amadeo. 2014. Ndusu Tu'un Savi. Ve'e Tu'un Savi A.C 'Academia de la Lengua  
696 Mixteca.'
- 697 Gudschinsky, Sarah Caroline. 1956. Proto-Mazatec structure. MA thesis, University of Pennsylvania.
- 698 Gudschinsky, Sarah C. 1959. Proto-Popotecan: A Comparative Study of Popolocan and Mixtecan.  
699 Supplement to *International Journal of American Linguistics* 25(2). Indiana University  
700 Publications in Anthropology and Linguistics. Baltimore: Waverly Press.
- 701 Harvey, Herbert R. 1963. Términos de parentesco en el otomangué: reconstrucción preliminar de  
702 algunos sistemas de términos de parentesco en el grupo lingüístico otomangué. México: Instituto  
703 Nacional de Antropología e Historia.
- 704 Hill, Jane H. 2001. Proto-Uto-Aztecan: A community of cultivators in central Mexico. *American*  
705 *Anthropologist* 103(4): 913–934.
- 706 Hill, Jane H. 2012. Proto-Uto-Aztecan as a Mesoamerican language. *Ancient Mesoamerica* 23(1): 57–  
707 68.

- 708 Hock, Hans Henrich. 1991. *Principles of Historical Linguistics*, 2nd ed. Berlin: Mouton de Gruyter.
- 709 Hoijer, Harry. 1956. Lexicostatistics: a critique. *Language* 32(1): 49-60.
- 710 Hopkins, Nicholas A. 1984. Otomanguean linguistic prehistory. In J. Kathryn Josserand; Marcus Winter  
711 & Nicholas Hopkins (eds.), *Essays in Otomanguean Culture History*, 25–64. Nashville: Vanderbilt  
712 University Publications in Anthropology.
- 713 Hopkins, Nicholas A. 2012. The noun classifiers of Cuchumatán Mayan languages: a case of diffusion  
714 from Otomanguean. *International Journal of American Linguistics* 78(3): 411–427.
- 715 Hymes, Dell. 1987. Review of *Language in the Americas*, by Joseph H. Greenberg, 1987. *Current*  
716 *Anthropology* 28(5): 659–662.
- 717 INALI. 2009. Catálogo de las lenguas indígenas nacionales: variantes lingüísticas de México con sus  
718 autodenominaciones y referencias geoestadísticas. México: Instituto Nacional de Lenguas  
719 Indígenas.
- 720 Jiménez Moreno, Wigberto. 1936. Mapa lingüístico de Norte- y Centro-América. México: Museo  
721 Nacional.
- 722 Jiménez Moreno, Wigberto. 1942. El enigma de los olmecas. *Cuadernos Americanos* 1(5): 111–145.
- 723 Jiménez Moreno, Wigberto. 1962. Estudios mixtecos. In Fray Francisco de Alvarado, *Vocabulario en*  
724 *lengua mixteca*, 9–105. México: Instituto Nacional Indigenista e Instituto Nacional de  
725 Antropología e Historia S. E. P.
- 726 Josserand, Judy Kathryn. 1983. Mixtec dialect history. PhD dissertation, Tulane University.
- 727 Josserand, J. Kathryn; Maarten E. R. G. N. Jansen & María de los Ángeles Romero. 1984. Mixtec  
728 dialectology: inferences from linguistics and ethnohistory. In J. Kathryn Josserand; Marcus Winter  
729 & Nicholas Hopkins (eds.), *Essays in Otomanguean Culture History*, 141–225. Nashville:  
730 Vanderbilt University Publications in Anthropology.
- 731 Joyce, Arthur A.; Andrew G. Workinger; Byron Hamann; Peter Kroefges; Maxine Oland & Stacie M.  
732 King. 2004. Lord 8 Deer "Jaguar Claw" and the land of the sky: the archaeology and history of  
733 Tututepec. *Latin American Antiquity* 15(3): 273–297.

- 734 Kaufman, Terrence. 1976. Archaeological and linguistic correlations in Mayaland and associated areas  
735 of Meso-America. *World Archaeology* 8(1): 101–118.
- 736 Kaufman, Terrence. 1983. New perspectives on comparative Otomanguean phonology. Ms. University  
737 of Pittsburgh.
- 738 Kaufman, Terrence. 1988. Otomanguean tense/aspect/mood, voice, and nominalization markers.  
739 Unpublished monograph.
- 740 Kaufman, Terrence. 2006a. Oto-Mangean Languages. In Keith Brown (ed.), *Encyclopedia of Language*  
741 *& Linguistics* (2nd ed.) Vol. 9, 118–124. Oxford: Elsevier.
- 742 Kaufman, Terrence. 2006b. Hokan Languages. In Keith Brown (ed.), *Encyclopedia of Language &*  
743 *Linguistics* (2nd ed.) Vol. 5, 365–372. Oxford: Elsevier.
- 744 Kaufman, Terrence. 2015a. Early Oto-Mangean homelands and cultures: some premature hypotheses.  
745 Institute for Mesaoamerican Studies, University at Albany, State University of New York.  
746 [http://www.albany.edu/ims/PDLMA\\_publications\\_new.html](http://www.albany.edu/ims/PDLMA_publications_new.html).
- 747 Kaufman, Terrence. 2015b. A research program for reconstructing proto-Hokan: first gropings. Institute  
748 for Mesaoamerican Studies, University at Albany, State University of New York.  
749 [http://www.albany.edu/ims/PDLMA\\_publications\\_new.html](http://www.albany.edu/ims/PDLMA_publications_new.html).
- 750 Kaufman, Terrence. 2016a. Tlapaneko-Sutiaba, OtoMangean, and Hokan: where Greenberg went  
751 wrong. Institute for Mesaoamerican Studies, University at Albany, State University of New York.  
752 [http://www.albany.edu/ims/PDLMA\\_publications\\_new.html](http://www.albany.edu/ims/PDLMA_publications_new.html).
- 753 Kaufman, Terrence. 2016b. Proto-Sapotek(an) reconstructions. Institute for Mesaoamerican Studies,  
754 University at Albany, State University of New York.  
755 [http://www.albany.edu/ims/PDLMA\\_publications\\_new.html](http://www.albany.edu/ims/PDLMA_publications_new.html).
- 756 Kaufman, Terrence & John Justeson. 2007. The history of the word for cacao in Ancient Mesoamerica.  
757 *Ancient Mesoamerica* 18: 193–237.
- 758 Kaufman, Terrence & John Justeson. 2010. Historical linguistics and pre-Colombian Mesoamerica.  
759 *Ancient Mesoamerica* 20: 21–31.



- 760 Kirchoff, Paul. 1967[1943]. Mesoamérica: sus límites geográficos, composición étnica y caracteres  
761 culturales. *Suplemento 3 de la Revista Tlatoani*. México: Escuela Nacional de Antropología e  
762 Historia.
- 763 Kirk, Paul L. 1966. Proto-Mazatec phonology. PhD dissertation, University of Washington.
- 764 Law, Danny. 2013. Mayan historical linguistics in a new age. *Language and Linguistics Compass* 7(3):  
765 141–156.
- 766 Lees, Robert B. 1953. The basis of glottochronology. *Language* 29(2): 113–127.
- 767 Lehmann, Walter. 1920. *Zentral-Amerika*, Part I, Vol. II. Berlin: Verlag Dietrich Reimer (Ernst Vohsen).
- 768 León, Nicolás. 1902. Familias Lingüísticas de México: Carta lingüística de México y sinopsis de sus  
769 familias, idiomas y dialectos. México: Museo Nacional.
- 770 Lewis, M. Paul; Gary F. Simons & Charles D. Fennig (eds.). 2015. *Ethnologue: Languages of the World*,  
771 *Eighteenth edition*. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>.
- 772 Longacre, Robert Edmondson. 1955. Proto-Mixtecan. PhD dissertation, University of Pennsylvania.
- 773 Longacre, Robert E. 1957. *Proto-Mixtecan*. Indiana University Research Center in Anthropology,  
774 Folklore, and Linguistics 5. Bloomington, Indiana.
- 775 Longacre, Robert E. 1960. Review of Mapas de clasificación lingüística de México y las Américas, por  
776 Mauricio Swadesh, 1959. *Language* 36(3): 397–410.
- 777 Longacre, Robert E. 1961. Swadesh's Macro Mixtecan hypothesis. *International Journal of American*  
778 *Linguistics* 27(1): 9–29.
- 779 Longacre, Robert E. 1962. Amplification of Gudschinsky's proto-Popolocan-Mixtecan. *International*  
780 *Journal of American Linguistics* 28(4): 227–242.
- 781 Longacre, Robert E. 1964. Progress in Otomangean reconstruction. In Horace G. Lunt (ed.),  
782 *Proceedings of the Ninth International Congress of Linguists*, 1016–1025. The Hague: Mouton &  
783 Co.
- 784 Longacre, Robert E. 1977. Reconstruction of indigenous languages. In Thomas A. Sebeok (ed.), *Native*  
785 *Languages of the Americas*, Vol. 2, 99–139. New York: Plenum Press.

- 786 López Cruz, Ausencia. 1997. Morfología verbal del zapoteco de San Pablo Güilá. B.A. thesis, Escuela  
787 Nacional de Antropología e Historia.
- 788 López Nicolás. 2009. Construcciones de doble objeto en el zapoteco de Zoochina. MA thesis, Centro  
789 de Investigaciones y Estudios Superiores en Antropología Social, D.F.
- 790 Macaulay, Monica. 1996. A grammar of Chalcatongo Mixtec. Berkeley, CA: University of California  
791 Press.
- 792 Macaulay, Monica & Joseph C. Salmons. 1995. The phonology of glottalization in Mixtec.  
793 *International Journal of American Linguistics* 61(1): 38–61.
- 794 MacNeish, Richard S. 1967. An interdisciplinary approach to an archaeological problem. In Douglas S.  
795 Byers (ed.), *The Prehistory of the Tehuacan Valley*, Vol. 1: Environment and Subsistence, 14–24.  
796 Austin, TX: University of Texas Press.
- 797 Mak, Cornelia & Robert Longacre. 1960. Proto-Mixtec phonology. *International Journal of American*  
798 *Linguistics* 26(1): 23–40.
- 799 Marcus, Joyce. 2003. The first appearance of Zapotec writing and calendrics. In Kent V. Flannery &  
800 Joyce Marcus (eds.), *The Cloud People: Divergent evolution of the Zapotec and Mixtec*  
801 *civilizations*, 91–96. New York: Percheron Press.
- 802 Martínez Ortega, Aileen Patricia. 2012. Clases verbales, transitividad y valencia verbal en el *pjyɛkəkjó*,  
803 tlahuica de San Juan Atzingo. PhD dissertation, El Colegio de México.
- 804 Mason, J. Alden. 1940. The native languages of Middle America. In *The Maya and their Neighbors*.  
805 New York: D. Appleton-Century Company.
- 806 Mateo Toledo, B'alam. 2003. The use of language names: the Mayan case. *International Journal of*  
807 *American Linguistics* 69(2): 151–153.
- 808 Matisoff, James A. 1990. On megalocomparison. *Language* 66(1): 106–114.
- 809 Matisoff, James A. 2000. On the uselessness of glottochronology. In Colin Renfrew; April McMahon,  
810 & Larry Trask (eds.), *Time Depth in Historical Linguistics*, 333–371. Cambridge: The McDonald  
811 Institute for Archaeological Research.

- 812 Matsukawa, Kosuke. 2005. Preliminary reconstruction of Proto-Triqué. MA thesis, University at  
813 Albany, State University of New York.
- 814 McQuown, Norman A. 1955. The indigenous languages of Latin America. *American Anthropologist*,  
815 New Series 57(3): 501–570.
- 816 Mechling, William H. 1912. The Indian linguistic stocks of Oaxaca, Mexico. *American Anthropologist*,  
817 New Series 14(4): 643–682.
- 818 Mendizábal, Miguel O. de & Wigberto Jiménez Moreno. 1937. Distribución prehispánica de las lenguas  
819 indígenas de México. México: Secretaria de la Economía Nacional.
- 820 Merrifield, William R. 1966. Linguistic clues for the reconstruction of Chinantec prehistory. In *Summa*  
821 *Anthropologica en homenaje a Roberto J. Weitlaner*, 579–596. México: Instituto Nacional de  
822 Antropología e Historia.
- 823 Merrifield, William R. 1981. *Proto Otomanguean Kinship*. Dallas, TX: Summer Institute of Linguistics.
- 824 Mithun, Marianne. 1999. *The Native Languages of Native North America*. Cambridge: Cambridge  
825 University Press.
- 826 Mora-Marín, David F. 2016. Testing the proto-Mayan-Mije-Sokean hypothesis. *International Journal*  
827 *of American Linguistics* 82(2): 125–180.
- 828 Moser, Christopher L. 1977. *Ñuiñe Writing and Iconography of the Mixteca Baja*. Nashville: Vanderbilt  
829 University Publications in Anthropology.
- 830 Muntzel, Martha. 1986. The structure of Ocuilteco. PhD dissertation, State University of New York at  
831 Albany.
- 832 Navarro Solano. 2012. El patrón de alineamiento en el meʔ<sup>1</sup>phaa<sup>1</sup> de Malinaltepec, Guerrero. MA thesis,  
833 Centro de Investigaciones y Estudios Superiores en Antropología Social, D.F.
- 834 Newman, Stanley & Robert Weitlaner. 1950a. Central Otomian I: Proto-Otomi reconstructions.  
835 *International Journal of American Linguistics* 16(1): 1–19.
- 836 Newman, Stanley & Robert Weitlaner. 1950b. Central Otomian II: Primitive Central Otomian  
837 reconstructions. *International Journal of American Linguistics* 16(2): 73–81.

- 838 Nichols, Johanna. 1997. Modeling ancient population structures and movement in linguistics. *Annual*  
839 *Review of Anthropology* 26: 359–384.
- 840 Olmstead, D. L. 1961. Lexicostatistics as ‘proof’ of genetic relationship: the case of Macro Manguean.  
841 *Anthropological Linguistics* 3(6): 9–14.
- 842 Orozco y Berra, Manuel. 1864. Geografía de las lenguas y carta etnográfica de México. México: J. M.  
843 Andrade y F. Escalante.
- 844 Oudijk, Michel R. 2008. El texto más antiguo en zapoteco. *Tlalocan* XV: 227–238.
- 845 Palancar, Enrique L. 2011. Revisiting the conjugation classes of Eastern Highlands Otomi. *Language*  
846 *Typology and Universals* 64(3): 213–236.
- 847 Pérez, Nancy L. 2007. Synchronic and diachronic Matlatzinkan phonology. PhD dissertation, The  
848 University of Michigan.
- 849 Pike, Kenneth L. 1948. Tone languages: A technique for determining the number and type of pitch  
850 contrasts in a language, with studies in tonemic substitution and fusion. Ann Arbor: University of  
851 Michigan Press.
- 852 Pimentel, D. Francisco. 1875. *Cuadro descriptivo y comparativo de las lenguas indígenas de México*,  
853 Tomo III. México: Tipografía de Isidro Epstein.
- 854 Piperno, D. R. & K. V. Flannery. 2000. The earliest archaeological maize (*Zea mays* L.) from highland  
855 Mexico: New accelerator mass spectrometry dates and their implications. *Proceedings of the*  
856 *National Academy of Sciences* 98(4): 2101–2104.
- 857 Piperno, Dolores R.; Anthony J. Ranere; Irene Holst; José Iriarte; & Ruth Dickau. 2009. Starch grain  
858 and phytolith evidence for early ninth millennium B.P. maize from the Central Balsas River Valley,  
859 Mexico. *Proceedings of the National Academy of Sciences* 106(13): 5019–5024.
- 860 Poser, William J. 1995. Binary comparison and the history of Hokan comparative studies. *International*  
861 *Journal of American Linguistics* 61(1): 135–144.
- 862 Radin, Paul. 1944. The classification of the languages of Mexico. *Tlalocan* 1(3): 259–265.

- 863 Ramírez Pérez, Elodia. 2014. La predicación no verbal y las construcciones copulares en el *tñu'u<sup>23</sup>*  
 864 *dau<sup>23</sup>* de Santa María Peñoles, Etna, Oaxaca. MA thesis, Centro de Investigaciones y Estudios  
 865 Superiores en Antropología Social, D.F.
- 866 Ranere, Anthony J.; Dolores R. Piperno; Irene Holst; Ruth Dickau & José Iriarte. 2009. The cultural  
 867 and chronological context of early Holocene maize and squash domestication in the Central Balsas  
 868 River Valley, Mexico. *Proceedings of the National Academy of Sciences* 106(13): 5019–5024.
- 869 Rankin, Robert. 1992. Review: *Language in the Americas*, by Joseph H. Greenberg, 1987. *International*  
 870 *Journal of American Linguistics* 324–351.
- 871 Rankin, Robert L. 2003. The comparative method. In Brian D. Joseph & Richard D. Janda (eds.), *The*  
 872 *Handbook of Historical Linguistics*, 183–212. Oxford: Blackwell.
- 873 Rasch, Jeffrey Walter. 2002. The basic morpho-syntax of Yaitepec Chatino. PhD dissertation, Rice  
 874 University.
- 875 Rensch, Calvin Ross. 1963. Proto-Chinantec phonology. MA thesis, University of Pennsylvania.
- 876 Rensch, Calvin Ross. 1966. Comparative Otomanguean phonology. PhD dissertation, University of  
 877 Pennsylvania.
- 878 Rensch, Calvin Ross. 1968. *Proto Chinantec Phonology*. Papeles de la Chinantla VI. Mexico, D.F.:  
 879 Museo Nacional de Antropología.
- 880 Rensch, Calvin Ross. 1976. *Comparative Otomanguean Phonology*. Bloomington: Indiana University.
- 881 Rensch, Calvin R. 1977a. Classification of the Otomanguean languages and the position of Tlapanec.  
 882 In *Two studies in Middle American and comparative linguistics*, 53–108. Dallas: Summer Institute  
 883 of Linguistics.
- 884 Rensch, Calvin R. 1977b. Otomanguean isoglosses. In Thomas A. Sebeok (ed.), *Native Languages of*  
 885 *the Americas*, Vol. 2, 163–184. New York: Plenum Press.
- 886 Rensch, Calvin R. 1989. *An Etymological Dictionary of the Chinantec Languages*. Studies in Chinantec  
 887 languages 1. Dallas: Summer Institute of Linguistics.

- 888 Restall, Matthew; Lisa Sousa & Kevin Terraciano (eds.). 2005. *Mesoamerican Voices: Native-language*  
889 *writings from Colonial Mexico, Oaxaca, Yucatan, and Guatemala*. Cambridge: Cambridge  
890 University Press.
- 891 Reyes, Antonio de los. 1889 [1593]. *Arte en lengua Mixteca*: Casa de Pedro Balli. Publié par le Comte  
892 H. de Charencey.
- 893 Ringe, Donald A, Jr. 1992. Calculating the factor of chance in language comparison. *Transactions of*  
894 *the American Philosophical Society* 81, Part 1.
- 895 Ringe, Don. 1999. How hard is it to match CVC-roots? *Transactions of the Philological Society* 97(2):  
896 213–244.
- 897 Sapir, Edward. 1925a. The Hokan affinity of Subtiaba in Nicaragua. *American Anthropologist*, New  
898 Series 27(3): 402–435.
- 899 Sapir, Edward. 1925b. The Hokan affinity of Subtiaba in Nicaragua (Conclusion). *American*  
900 *Anthropologist*, New Series 27(4): 491–527.
- 901 Sapir, Edward. 1916. *Time perspective in aboriginal American culture: a study in method*. Ottawa:  
902 Government Printing Bureau.
- 903 Schmidt, P. W. 1977 [1926]. *Die Sprachfamilien und Sprachenkreise der Erde: Atlas von 14 Karten*.  
904 Hamburg: Helmut Buske Verlag.
- 905 Silverman, Daniel. 1997. Laryngeal complexity in Otomanguean vowels. *Phonology* 14(2): 235–261.
- 906 Smith, Mary Elizabeth. 1963. The Codex Colombino: a document of the south coast of Oaxaca.  
907 *Tlalocan* 4(3): 276–288.
- 908 Smith, Mary Elizabeth. 1973. *Picture Writing from Ancient Southern Mexico: Mixtec place signs and*  
909 *maps*. Norman, OK: University of Oklahoma Press.
- 910 Smith Stark, Thomas C. 2002. Las clases verbales del zapoteco de Chichicapan. In Zarina Estrada  
911 Fernández & Rosa María Ortiz Ciscomani (ed.), *Memorias del VI Encuentro Internacional de*  
912 *Lingüística en el Noroeste*, Vol. 2, 165–212. Hermosillo: Editorial UniSon.

- 913 Sorensen, Arthur P, Jr. 1967. Multilingualism in the Northwest Amazon. *American Anthropologist*  
914 69(6): 670–684.
- 915 Soustelle, Jacques. 1937. *La Famille Otomi-Pame du Mexique Central*. Paris: Institut d'Ethnologie
- 916 Spores, Ronald. 1993. Tututepec: a postclassic-period Mixtec conquest state. *Ancient Mesoamerica*  
917 4(1): 167–174.
- 918 Stirling, Matthew W. 1968. Early history of the Olmec problem. In Elizabeth P. Benson (ed.),  
919 *Dumbarton Oaks Conference on the Olmec*, 1–8. Washington D. C.: Dumbarton Oaks Research  
920 Library and Collection.
- 921 Suárez, Jorge A. 1973. On Proto-Zapotec phonology. *International Journal of American Linguistics*  
922 39(4): 236–249.
- 923 Suárez, Jorge A. 1979. Observaciones sobre la evolución fonológica del tlapaneco. *Anales de*  
924 *Antropología* 16: 371–386
- 925 Suárez, Jorge A. 1980. Review of Comparative Otomanguean Phonology, by Calvin R. Rensch (1976).  
926 *International Journal of American Linguistics* 46(1): 49–56.
- 927 Suárez, Jorge A. 1983. *La lengua tlapaneca de Malinaltepec*. Mexico, D.F.: Universidad Autónoma de  
928 México.
- 929 Suárez, Jorge A. 1986. Elementos gramaticales otomangues en tlapaneco. In Benjamin F. Elson (ed.),  
930 *Language in Global Perspective: Papers in honor of the 50<sup>th</sup> anniversary of the Summer Institute*  
931 *of Linguistics 1935-1985*, 267–284. Dallas: Summer Institute of Linguistics.
- 932 Sullivant, J. Ryan. 2012. *Tyaʔa*: el clasificador numérico del chatino de Tataltepec de Valdés.  
933 Proceedings of the Conference on Indigenous Languages of Latin America V. Austin, TX: AILLA.
- 934 Swadesh, Morris. 1947. The phonemic structure of Proto-Zapotec. *International Journal of American*  
935 *Linguistics* 13(4): 220–230.
- 936 Swadesh, Morris. 1950. Salish internal relationships. *International Journal of American Linguistics*  
937 16(4): 157–167.

- 938 Swadesh, Morris. 1952. Lexico-statistic dating of prehistoric ethnic contacts: with special reference to  
939 North American Indians and Eskimos. *Proceedings of the American Philosophical Society* 96(4):  
940 452–463.
- 941 Swadesh, Morris. 1959. *Mapas de clasificación lingüística de México y las Américas*. México:  
942 Universidad Autónoma de México.
- 943 Swadesh, Morris. 1960. The Oto-Manguean hypothesis and Macro Mixtecan. *International Journal of*  
944 *American Linguistics* 26(2): 79–111.
- 945 Swadesh, Morris. 1964a. Interim notes on Oaxacan phonology. *Southwest Journal of Anthropology*  
946 20(2): 168–189.
- 947 Swadesh, Morris. 1964b. Algunas problemas de la lingüística otomangue. *Anales de Antropología* 1(1):  
948 91–123.
- 949 Terraciano, Kevin. 2001. *The Mixtecs of Colonial Oaxaca: Ñudzahui history, Sixteenth through*  
950 *Eighteenth Centuries*. Stanford, CA: Stanford University Press.
- 951 Thomas, Cyrus & Swanton, John R. 1911. *Indian Languages of Mexico and Central America and their*  
952 *Geographical Distribution*. Washington D.C.: Government Printing Office.
- 953 Upson, B. W. & Robert E. Longacre. 1965. Proto-Chatino phonology. *International Journal of*  
954 *American Linguistics* 31(4): 312–322.
- 955 Urcid, Javier. 1993. The Pacific coast of Oaxaca and Guerrero: the westernmost extent of the Zapotec  
956 script. *Ancient Mesoamerica* 4(1): 141–165.
- 957 Urcid Serrano, Javier. 2001. Zapotec hieroglyphic writing. *Studies in Pre-Columbian Art and*  
958 *Archaeology* 34. Washington D.C.: Dumbarton Oaks Research Library and Collection.
- 959 Vennemann, Theo. 2003. Water all over the place: the Old European toponyms and their Vasconic  
960 origin. In Patrizia Noel Aziz Hanna (ed.), *Europa Vasconica – Europa Semitica*, 857–870. Berlin:  
961 Mouton de Gruyter.
- 962 Weitlaner, Roberto J. 1941. Los pueblos no nahuas de la historia tolteca y el grupo lingüístico macro  
963 otomangue. *Revista Mexicana de Estudios Antropológicos* 5: 249–269.



- 964 Weitlaner, Roberto J. 1953. Proto-otomi-matlatzinca: reconstrucciones del proto-otomi III. Memoria  
965 del Congreso Científico Mexicano XII: Ciencias Sociales. IV Centenario de la Universidad de  
966 México, 199–206.
- 967 Wichmann, Søren. 2006. Sandhi tonal interno en la morfología verbal tlapaneca. In Rosa María Ortiz  
968 Ciscomani (ed.), *Memorias del VIII Encuentro Internacional de Lingüística en el Noroeste*, Vol. 2,  
969 337–355. Hermosillo: Editorial UniSon.
- 970 Winter, Marcus C.; Margarita Gaxiola G. & Gilberto Hernández D. 1984. Archeology of the  
971 Otomanguean area. In J. Kathryn Josserand; Marcus Winter & Nicholas Hopkins (eds.), *Essays in*  
972 *Otomanguean Culture History*, 65–108. Nashville: Vanderbilt University Publications in  
973 Anthropology.
- 974 Witkowski, Stanley R. & Cecil H. Brown. 1978. Mesoamerican: A proposed language phylum.  
975 *American Antropologist*, New Series 80(4): 942–944.
- 976 Witkowski, Stanley R. & Cecil H. Brown. 1981. Mesoamerican historical linguistics and distant genetic  
977 relationship. *American Antropologist*, New Series 83(4): 905–911.