

A Lexico-Statistic Dating of the Separation of Huastec and Chol

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RÉSUMÉ

La détermination de la date de séparation des langues Huastec et Chol par l'analyse linguistique correspond très bien aux données de l'archéologie.

Glottochronology is the statistical method developed by Swadesh and Lees for determining the time-depth of separation of two related languages (Lees 1953; Swadesh 1955). The basic assumption in the application of this method is that the rate of change of items in a basic noncultural vocabulary list is approximately constant; thus by determining the percentage of cognates of this basic noncultural vocabulary list in two related languages one can determine the approximate time at which the languages separated or diverged from a common ancestral speech.

The Gulf Coast of Mexico offers an area of opportunity for the useful application of this method. In northeast Mexico, around the Tampico region and extending inland to San Luis Potosi, is a large bloc of Huastec speakers. Huastec is related to the Mayan languages of southern Mexico and Guatemala, and it is now separated from these other Mayan languages by blocs of Totonac and Nahuat speakers. It should be possible to determine the date of this separation by glottochronology.

Swadesh attempted a dating of the separation of Huastec and Yucatec Maya by lexico-statistical analysis and found a time-depth of 32 centuries (Swadesh 1953). However, the Choloid languages of western Guatemala and eastern Chiapas are believed by Kroeber (1939:112-114) and Mason (1940:70) to be more closely related to Huastec than are any of the other Mayan languages, so that in attempting to determine the date

of final separation of Huastec from the main Maya bloc it would seem better to use one of these languages. Accordingly I have chosen Chol to be compared with Huastec.

My principal source for the basic noncultural vocabulary of Chol was a dictionary of Chol compiled by Evelyn Woodward Aulie in 1948 (*in* McQuown 1949). A supplementary source for Chol was Anderson and Warkentin (1953). The source of the basic noncultural vocabulary for Huastec was materials on the Potosino dialect of Huastec spoken in the village of Tancanhuitz and on two farms in the mountains between Tancanhuitz and Tanlajas (San Luis Potosi) collected by Manuel J. Andrade in 1933 (Andrade 1946).

The procedure followed in my analysis was that outlined by Swadesh (1955). The first step was to obtain as many of the 200 basic noncultural vocabulary items as possible for Chol and Huastec. Altogether a total of 150 matchable pairs was tabulated. Forty-four of these 150 pairs were judged to be cognate; that is, 29.4 percent. Using Swadesh's formula, with t = time depth in millennia, C = percentage of cognates, and r = index of retention per 1000 years (81 percent), the time-depth of separation was calculated as follows:

$$\begin{aligned}
 t &= \log C \div \log r^2 \\
 t &= \log .294 \div \log .66 \\
 t &= \frac{9.46835-10}{9.81954-10} \\
 t &= 2.946
 \end{aligned}$$

The time of separation of Huastec and Chol is thus estimated to be about 29.5 centuries ago, \pm 400 years, using Lees' formula for 9/10 confidence.

It appears that the dates derived from glottochronology may be significantly correlated with archaeological evidence from the Gulf Coast area. During the early period of agricultural village life in Middle America, which is called the Preclassic period, the known archaeological cultures of the entire Gulf Coast region

from northern Veracruz to the Peten in Guatemala were evidently very closely related until around 1000 B.C. The ceramics of the Ponce phase in the Panuco area of northern Veracruz (MacNeish 1954), the Lower Tuxpan phase in central Veracruz (Ekholm 1953; MacNeish, personal communication), the Lower Tres Zapotes phase in southern Veracruz (Drucker 1943), and the Mamon phase at Uaxactun in lowland Guatemala (Smith 1955) are extremely similar in many details. In the areas where Maya is still spoken today — the Yucatan peninsula, Chiapas, northern Veracruz, and Guatemala — there is strong cultural continuity from these early phases into historic times, indicating long stability in population and language. As MacNeish (1954: 624-625) points out, it appears that during this early period the entire Gulf Coast region was a Maya-speaking culture area. Later, Totonac and Nahuatl were evidently intrusive into the central part of the Gulf Coast region.

The glottochronological evidence presented above seems to indicate that the separation of Huastec from the main bloc of Maya languages took place around 1000-900 B.C., and the available archaeological evidence also appears to indicate that the break-up of this Gulf Coast lowlands culture area was underway by this time. In southern Veracruz and western Tabasco the Lower Tres Zapotes phase was evidently immediately followed (with some overlap) by what may be called the La Venta phase, with the construction of impressive ceremonial centers characterized by the distinctive Olmec art style. On the basis of new radiocarbon dates from the ceremonial center of La Venta in western Tabasco, Berger, Graham, and Heizer (1967) date the site between 1000 and 600 B.C. The ceramic evidence from the various regions indicates that it is at the time of this La Venta horizon that the cultures of the Gulf Coast region begin to diverge; significantly, few specific similarities could be found between the Aguilar phase which follows Ponce in northern Veracruz and the Chicanel phase which follows Mamon in the southern Maya lowlands (MacNeish 1954).

Archaeological and glottochronological evidence, then, seem to correspond in dating the beginning of the separation of Huastec from the main Maya-speaking area at roughly around 1000-900

B.C. It is probable that further work on lexico-statistic dating of the separation of the various Maya languages and ultimate reconstruction of Proto-Maya speech will throw additional light on the early cultural history of the Maya area.

PRECLASSIC SEQUENCE IN THE GULF COAST AREA

	<i>Northern Veracruz</i>	<i>Central Veracruz</i>	<i>Southern Veracruz and Tabasco</i>	<i>Peten</i>
AD				
0				
BC	El Prisco		Middle Tres Zapotes	
	Chila			
500				
	Aguilar	El Trapiche		Chicanel
			La Venta	
1000				
	Ponce	Tuxpan	Lower Tres Zapotes	Mamom
1500				
	Pavon			

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BASIC NONCULTURAL VOCABULARY

(based on Swadesh 1955)

WORDS COGNATE:

<u>ENGLISH</u>	<u>CHOL/HUASTEC</u>	<u>ENGLISH</u>	<u>CHOL/HUASTEC</u>
wash	pok/pak'ʔ	night	ak'ʌlel/akal
one	jump'ejl/hún	two	cháp'ejl/tcaḅ
three	uxp'el/oc	five	jop'ejl/boʔ
six	wakp'el/aka'k	seven	wukp'el/buk
eight	waxʌkp'ejl/waci'k	nine	bolomp'ejl/bele'h
twenty	junk'al/huninik	hundred	jo'k'al/boʔ i'nik
salt	ats'am/at'ém	wind	ikʔ/ikʔ
cloud	tokal/tokou	water	ja'/'haʔ
stone	tun/túhu'ḅ	tree	té/teʔ
root	iwi'/'ibíl	louse	uch'/'utcʔ
man	winik/inik	bone	bʌbel/béklek
die	chʌmel/tcémetc	sleep	wʌyel/wáyal
wet	ach'/'atcʔ	I	joñon/naná'ʔ
thou	jatet/tata'ʔ	come	tilel/tal
ten	lujump'ejl/láhu	all	t'pejtelel/é'tal
star	ek'/'otʔ	blood	ch'ich'el/citcʔ
foot	ok/aka'n	eye	wut/wal
drink	uch'el/útcʔa	breathe	jak'ko/Θikokól
work	tronel/t'o'nal	cry	uk'el/uk'ín
black	i'ik'/'éhekni	red	chʌchʌk/tsakni
white	sʌsʌk/Θakni	yellow	k'ʌnk'ʌn/man
cold	tsʌnal/tsa'mai	kill	tsʌnsan/tcémta

WORDS POSSIBLY COGNATE:

ENGLISH	CHOL/HUASTEC	ENGLISH	CHOL/HUASTEC
day	k'in/k'itRā'	green	yajyāk/yacni'
*mother	na'/nána	*father	tat/ta'ta

* possibly Aztec or Spanish loanwords.

WORDS NOT COGNATE:

we	jononla/wawatʃik	he	jini/haha''
ye	jatetla/ʃaʃatʃik	they	jinob/haha'tʃik
who	majki/nítá	where	baki/hónti
what	chuki/honto'	when	che'/hátal
how	bajche'/hóntoni'	because	kome/ábal
there	ya'i/nahá'	far	najt/cub
near	lákʼAl/wélta	right	noj/ehát
here	ilayi/te	left	ts'ej/kwátáp
sit	buchtʼAl/k' wahat	fly	wejlel/húman
stand	wa'tʼAl/kube'i	fall	yajlel/kwa'lan
swim	nuxijel/ko'wa'l	turn	cha'tilel/wítʃi
walk	xʼAmbal/bélál	throw	chok/petna'
flow	lʼmuna/aθil	tie	kʼach/wik'a
hit	jats'/tc'atá	cut	xot'/mútc' i
dig	bok/la'k'uww	year	jab/tamu' b
four	chʼamp'ejl/tce	few	ts' ita/we?
many	kabʼAl/ed	wide	nuklel/tc'íkóθ
long	tam/nákát	thin	xejt'il/t'ili'l
narrow	lʼts'ʼAl/cíli	big	kolem/púlik

WORDS NOT COGNATE (continued):

<u>ENGLISH</u>	<u>CHOL/HUASTEC</u>	<u>ENGLISH</u>	<u>CHOL/HUASTEC</u>
small	bik'it/tc'íkál	short	p'ots/mutc' u
fish	chuy/to'ʔol	sky	panchan/k'ʔailál
smoke	buts' /pau	sand	ji' /kiθi' b
dust	ts'uben/póhoθ	lake	ñajb/le'hem
fog	mAkAl panimil/tcabál	leaf	yopol/séklek
flower	nichim/witc	seed	bAk' /θákpen
stick	bara/te'ché	worm	motso' /cum
snake	lukum/tcan	bird	kukx'uxep/tc' itci' n
woman	x'ixik/ucu'm	child	alAl/t'éle
ear	chikin/cutcu' n	tongue	ak' /lék' áb
tooth	cha'am/kamáp	egg	tumut/θak' tšok'
back	pat/kuc	tail	nej/weu
meat	bAk'tal/t'úlek	feather	tsutsel mut/húlek
skin	pAchilel/ot'	mouth	ejAl/wiʔ
nose	ni' /θam	wing	wic' /pabák
heart	pusik'al/its'itš	guts	soyta' /t' iθiθ
neck	bik' /nuk'	hair	tsutsel jol/ci'il
hear	ubin/ótc'a	see	k'el/tcu' u
live	kuxtiyel/kwaha't	eat	k'ux/hayu'l
know	ujil/tcóp	bite	ch'oj/tc' au
sing	k'Áyin/aha' t	speak	t'an/k' áwin
dry	tikin/wáyenék	good	uts'at/álwaʔ
new	tsijib/it	warm	tikAw/k' ak'
rotten	ok'benix/k' atcenek	bad	jontol/átas

WORDS NOT COGNATE (continued):

<u>ENGLISH</u>	<u>CHOL/HUASTEC</u>	<u>ENGLISH</u>	<u>CHOL/HUASTEC</u>
brother	winik bA la kijts 'in/o'koc ébál	sister	x'ixik bA lak chich/tRiθan ébál
wife	ijnam/ícal	name	k'aba'/bi
other	yambΛ/hun	burn	pulel/t'Ríká
blow	wujtan/hút'Ru	swell	sit'kuyel/málin
road	bij/bel	dog	ts'i'/'pik'ó'
sew	ts'is/tRúkui	hunt	chijtan/jwií
play	alas/uba't	dance	son/bicóm
fight	lembal/péhec		

WORDS NOT MATCHED IN CHOL AND HUASTEC:

and, if, at, in, with, this, give, hold, pull, that, float, lie, push, split, rub, scratch, squeeze, some, thick, ice, sea, snow, mountain, ashes, earth, fire, bark, grass, woods, berry, animal, person, hand, fat, belly, liver, leg, fear, think, vomit, laugh, suck, spit, old, river, rain, sharp, right, straight, smooth, dull, dirty, husband, not, freeze, rope, shoot, cook, clothing, spear, stab, fight.

SOME POSSIBLE SOUND CORRESPONDENCES

CHOL : HUASTEC

ok:ak'	pok/pak'u , ok/ak'an
ch:tc	uch'/utc' , ach'/'atc'
Λ:a	wAyel/wayal , chΛchΛk/tsakni
s:θ	sΛsΛk/θakni
j:h	ja'/ha , junk'al/hun inik