The Lower Mississippi Valley as a Language Area

By

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Abstract

It has been hypothesized that the Southeastern U.S. is a language area, or *Sprachbund*. However, there has been little systematic examination of the supposed features of this area. The current analysis focuses on a smaller portion of the Southeast, specifically, the Lower Mississippi Valley (LMV), and provides a systematic analysis, including the eight languages that occur in what I define as the LMV: Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Mobilian Trade Language (MTL), Natchez, Ofo, and Tunica. This study examines phonetic, phonological, and morphological features and ranks them according to universality and geographic extent, and lexical and semantic borrowings to assess the degree of linguistic and cultural contact. The results show that: (1) the LMV is a Sprachbund on par with other well known Sprachbünde of the world such as the Balkans and South Asia; (2) there are possibly three different overlapping Sprachbünde spanning the northern Gulf from northeastern Mexico to the Atlantic seaboard; (3) Totonac, a Mesoamerican language, shares several features with the LMV and scores higher than several languages geographically closer to the LMV; (4) grammatical features, such as positional verb auxiliaries, form a major component of the LMV Sprachbund; (5) discursive and pragmatic features, such as focus- and topic-marking, which have been little studied in analyses of Sprachbünde, play a major role in the LMV Sprachbund; and (6) several calques and lexical borrowings, which includes exchanges of "basic" vocabulary, suggest intense contact and intercommunication within the area.

Acknowledgments

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Last but certainly not least, I want to thank my family and friends who, over the past several years, have had undending faith and confidence in me to attain doctoral success!

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Abbreviations

1	first person (I, we)
1P	first person plural (we)
1S	first person singular (I)
2	second person (you)
2S	second person singular (you)
3	third person (he, she, it)
3S	third person singular (he, she, it)
ABL	ablative
ABS	absolutive
ACC	accusative
AGR	agricultural
ALL	allative
ANAT	anatomical
ANIM	animate
AOR	aorist
ASRT	assertive
AUX	auxiliary
BOT	botanical
CAUS	causative
COM	comitative
CONN	connective
CONT	continuative
COP	copulative
DAT	dative
DECL	declarative
DECS	decessive
DEF	definite (article)
DIM	diminutive
DIR	directional
DS	Dorsey-Swanton
DS	different subject
DU	dual
EMPH	emphatic
ERG	ergative
EVID	evidential
EXCLAM	exclamation
F	feminine
FOC	focus
FUT	future
GEN	genitive
HAB	habitual
INAN	inanimate
IMPF	imperfective
INDF	indefinite

INF	infinitive
INFER	inferential
INST	instrumental
INTENS	intensive
INTER	interrogative
IRR	irrealis
LMV	Lower Mississippi Valley
LOC	locative
M	masculine
MOD	modal
MTL	Mobilian Trade Language (Mobilian Jargon)
NEG	negative
NEW.TOP	new topic
NZR	nominalizer
OBJ	object
OPT	optative
PERF	perfective
PHR.TRM	phrase terminal
PL	plural
PLURACT	pluractional
POSS	possessive
PREV	previous mention
PRT	particle
PRTP	participle
PST	past
PT	patient
PURP	purposive
PVB	preverb
QT	quotative
REC	reciprocal
REDUP	reduplication
REM	remote
SEM	semelfactive
SOV	subject-object-verb (constituent order)
SS	same subject
STG	something
SUB	subordinate
SUBJ	subject
SUF	suffix
TNS	tense
TOP	topic
ZOOL	zoological

Chapter 1

Introduction

1.0 Introduction

The aim of this dissertation is to determine whether the languages of the Lower Mississippi Valley (LMV) constitute a linguistic contact area, or *Sprachbund*. Although the Southeastern U.S. has long been hypothesized as a Sprachbund, there has been little systematic or in-depth analysis of the region in comparison with other Sprachbünde such as the Balkans and South Asia. This dissertation incorporates such an in-depth, systematic analysis.

Early endeavors by philologists primarily focused on, to borrow a term from biological science, *genetic* origins of languages and to which linguistic family each language belongs, a study also known as phylum linguistics. Certain "fundamental theoretical assumptions" underlie the concept of genetic relationship (Thomason and Kaufman 1988: 9), which are that: (1) all languages change through time, through drift, and through dialect and foreign interaction, as through the language acquisition process among bilinguals; (2) change can occur at any and all levels of the linguistic system; (3) a language is passed from parent to child and/or via peer group, with relatively small degrees of change over the short run; and (4) the label "genetic relationship" does not properly apply when transmission is imperfect, i.e., when there is sufficient interference to stop the normal generational and peer transmission patterns (ibid.: 9–10).

"[M]ost linguists ... have preferred to rely on the asocial (and ahistorical) criterion of synchronic linguistic features in determining genetic relationship" (Thomason and Kaufman 1988: 9). Linguistic genetic relationship implies a "systematic correspondence" in all parts of a

language to its living linguistic relatives as well as to possibly extinct languages.[1] "[G]enetic relationship entails systematic correspondences in all parts of the language because that is what results from normal transmission: what is transmitted is an entire language—that is, a complex set of interrelated lexical, phonological, morphosyntactic, and semantic structures" (ibid.: 11). To this end, linguists have sought to find a parent, or proto-, language from which genetically related languages have descended in order to establish their linguistic origin. This has traditionally led to the development of tree diagrams (such as those used in this dissertation for Siouan and Muskogean languages; see Chapter 2) to demonstrate the linguistic genetic origin of a modern language. For example, linguists classify English as a modern genetic descendant of the Germanic language family due to its Germanic base vocabulary, with many modern English words still appearing quite similar to their modern German and Dutch linguistic counterparts (e.g., English *house* vs. German *Haus* and Dutch *huis*). Germanic languages, in turn, are genetically classified as a sub-family of the broader Indo-European (IE) language family. Some linguists today still attempt to recreate a Proto-IE language from which all modern IE languages, including English, are thought to descend.

However, research on genetic linguistic relationships typically eschews that speakers of a language come in contact and interact with speakers of other languages. Language contact can have a wide range of linguistic outcomes along a continuum from the slight borrowing of vocabulary to the creation of an entirely new language (Winford 2003: 2). Such outcomes reflect the intensity of contact between peoples and languages, producing varying degrees of structural interference or borrowing (Thomason and Kaufman 1988; Thomason 2001: 66). Here, "borrowing" is defined as "the varying degrees of influence on the lexicon and structure of a

[1] For example, Gothic was a Germanic language that is an extinct relative of English.

group's native language from the external (non-native) language with which it is in contact" (Winford 2003: 12; Thomason and Kaufman 1988: 5).

Contact can bring rise to various degrees of linguistic pluralism, such as often develops through intermarriage or intensive trade. People proficient in two or more languages often codeswitch, meaning they use "two or more languages in the same utterance or conversation" (Winford 2003: 102; Grosjean 1982: 145). There is very little consensus on the boundary between codeswitching; it can range from a single word within a clause to an entire clause within an utterance, and borrowing, except perhaps as to the degree monolingual speakers of the receiving language employ such phenomena, thereby interfering in the native language (Winford 2003: 107).

Other factors contributing to the possible outcomes of language contact include length of time of contact and the level of cultural or socioeconomic dominance of one group over another. An extreme outcome of language contact is language attrition and death (Winford 2003; Thomason and Kaufman 1988). Language death can arise from "overwhelming cultural pressure", leading to the "loss of stylistic resources and, ultimately, to loss of grammatical structures, as new generations of speakers fail to learn forms their elders never or rarely use" (Thomason and Kaufman 1988: 100). Language death is apparent in societies such as that of the Americas and Australia, where European invasion resulted in mass forced conversion to a foreign culture, religion, and language, leading to the current moribund and extinct status of many Native American and aboriginal Australian languages.

The research within this dissertation is an attempt to understand the degree of contact among the peoples of the LMV. It also attempts to understand how these languages may have been shaped by this contact.

This chapter is divided into the following seven sections: 1.1 is an overview of the geography and environment of the LMV; 1.2 offers a sketch of the peoples of the LMV; 1.3 provides a brief history of the LMV through the prism of archaeological periods; 1.4 describes movements and migrations of LMV peoples; 1.5 examines language contact in general; 1.6 is a discussion of objectives and research questions; and 1.7 provides a summary of the current chapter and a chapter-by-chapter guide to the remainder of this work.

1.1 The Lower Mississippi Valley: Geography and environment.

I define the Lower Mississippi Valley (LMV) as an area extending from about 260 miles (418 km.) west of the Mississippi River eastward to Mobile Bay on the Gulf of Mexico, a total of about 380 miles (612 km.), and about 425 miles (684 km.) northward from the Gulf of Mexico toward the vicinity of the Tombigbee and Arkansas Rivers (see Fig. 1.1), an area encompassing 144,600 square miles (496,600 square km.). This area encompasses what are now northern Arkansas, Mississippi, and Alabama, southeastern Oklahoma and eastern Texas over toward central Alabama, and includes all of the modern states of Louisiana and Mississippi. This definition includes a broader territory than other definitions of the LMV (e.g., Rees and Livingood 2007: 1) in order to include languages undoubtedly an intimate part of this proposed language area (e.g., Atakapa and Choctaw-Chickasaw), though geographically somewhat removed from the Mississippi Valley itself.

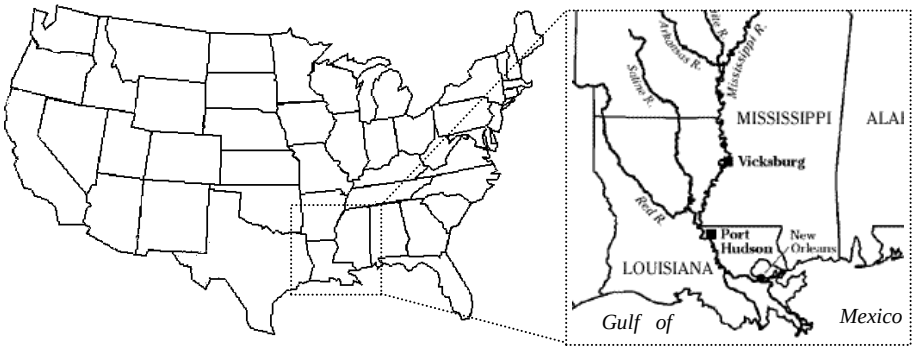


FIG. 1.1: The Lower Mississippi Valley (based on National Park Service 2010).

1.1.1 Geography and environment.

1.1.1.1 Rivers.

The Mississippi River, the valley of which is the focus of this dissertation, is the largest river of North America, draining with its major tributaries—the Missouri and Ohio Rivers—an area of approximately 1.2 million sq. mi. (3.1 million sq. km.), or about one-eighth of the entire continent. (The name 'Mississippi' is Algonquian in origin, from *misi* 'great' + *sipi* 'water'; the French had named the river Fleuve Colbert and Fleuve St. Louis.) Rising in Lake Itasca in Minnesota, the Mississippi River flows almost due south across the continental interior, collecting the waters of its major tributaries approximately halfway along its journey to the Gulf of Mexico through a vast delta southeast of modern New Orleans, a total distance of 2,350 miles (3,780 km.) from its source, emptying into the Gulf near the modern town of Venice, Louisiana, near Barataria Bay. The lower Mississippi River is a meandering alluvial river, meaning that the channel loops and curls along its floodplain, leaving behind meander scars, cutoffs, oxbow lakes, and swampy backwaters. The Mississippi forms a north-south environmental corridor extending from the upper Midwest to the Gulf of Mexico, providing a broad range of plant and animal species that contributed to indigenous economies (Smith 2009: 168). The river also provides a

flyway from Canada and the northern United States down to the southern end of the Mississippi Valley, which is a refuge for wintering fowl (Smith 2009). Just north of the Red River confluence are loess bluff hills called the Natchez Bluffs, considered the Natchez homeland (see 1.1.2).

Several smaller rivers drain into the Mississippi, including, in approximate geographical order from the Gulf of Mexico northward, the Red, the Yazoo, and the Arkansas. The Atchafalaya is a tributary to the west of the Mississippi while the Pearl, Tombigbee, and Mobile are to the east of it, the latter two in modern Alabama while the Pearl is in the modern state of Mississippi.

The Red River has its confluence with the Mississippi River about 216 miles (348 km.) upstream from the latter's mouth. The Red River rises in the high plains of modern eastern New Mexico, flowing southeast through modern Texas and Louisiana to a point northwest of current Baton Rouge, where it enters the Atchafalaya River (see above), which flows south to Atchafalaya Bay and the Gulf of Mexico. The Red River is 1,290 miles (2,080 km.) long and drains an area of some 93,000 square miles (241,000 square km.). (This river is often called Red River of the South to distinguish it from the Red River of the North, which is in the northern United States and Canada, flowing northward through Minnesota and Manitoba to empty into Lake Winnipeg.)

The Yazoo River has its confluence with the Mississippi about 285 miles (459 km.) upstream from the latter's mouth. The Yazoo is formed by the confluence of the Tallahatchie and Yalobusha Rivers north of modern Greenwood, Mississippi. It meanders about 190 miles (306 km.) generally south and southwest, much of the way paralleling the Mississippi River, which it joins at the modern town of Vicksburg.

The Arkansas River is a large tributary of the Mississippi River whose confluence with the Mississippi is about 396 miles (637 km.) upstream from the latter's mouth. The Arkansas River rises in the Rocky Mountains of what is now central Colorado and flows generally east-southeastward for 1,460 miles (2,350 km.) through the modern states of Kansas, Oklahoma, and Arkansas before entering the Mississippi River 40 miles (64 km.) northeast of current Arkansas City, Arkansas. The river's drainage basin covers 161,000 square miles (417,000 square km.).

The Atchafalaya River is a tributary of the Red and Mississippi Rivers (see above) in modern Louisiana. It branches southwest from the Red River near a point in what is now east-central Louisiana. The Atchafalaya flows generally south for about 140 miles (225 km.) to Atchafalaya Bay, an inlet of the Gulf of Mexico. Its length, including the Red River, is 1,420 miles (2,290 km.), and its drainage area is 95,100 square miles (246,300 square km.) (The name 'Atchafalaya' derives from Choctaw or Mobilian Jargon *ačа* 'river' + *falaya* 'long'.)

The Pearl River rises in modern east-central Mississippi and flows southwestward into modern Louisiana, emptying into the Gulf of Mexico. The river divides into two streams, the East Pearl and the West Pearl, which parallels the East Pearl several miles to the west. The Pearl is approximately 411 miles (661 km.) long, draining about 7,600 square miles (19,700 square km.).

The Tombigbee River is formed in modern northeastern Mississippi and flows south and southeast for nearly 525 miles (845 km.) to merge with the Alabama River; the two form the Mobile River (see below), about 45 miles (70 km.) north of the modern city of Mobile, Alabama. The Tombigbee drains about 21,100 square miles (54,600 square km.) (The name 'Tombigbee' derives from Choctaw *itombi* 'trunk, box, coffin' + *ikbi* 'maker', the river so called "from the

fact that a trunk-maker or box-maker lived on one of its branches" [Byington and Swanton 1915: 216].)

The Mobile River is located in what is now southwestern Alabama. It is formed by the confluence of the Tombigbee and Alabama Rivers (see above). The river enters Mobile Bay after a southerly course of 45 miles (72 km.) through the Mobile-Tensaw delta region. With its tributaries it drains some 44,000 square miles (114,000 square km.), making it the sixth largest river basin in the United States. The Mobile River drains into Mobile Bay, on which the city of Mobile now stands. This bay extends 35 miles (56 km.) south from the mouth of the Mobile River to its Gulf outlet.

1.1.1.2 Mobile Bay.

Mobile Bay is between eight and 18 miles (13-29 km.) in width. It enters the Gulf of Mexico between Dauphin Island and Mobile Point. The earliest known eyewitness account we have of Mobile Bay is by the Spanish Alonzo Alverez de Pineda, who, in 1519, entered this bay, which he named Bahía Espíritu Santo (Bay of the Holy Ghost) (Swanton 1946: 150; Walthall 1980: 247). He and his small fleet sailed a short distance up the Río del Espíritu Santo (now known as the Mobile River), where he reported sighting "some forty Indian villages along the shoreline" (Walthall 1980: 247). Unfortunately this is the limit of the account, but it is enough to infer the large population in this region at the time, supporting Mobile Bay's importance as a large trading center. The origin of the name, which has also been spelled Mabila, Mauilla, and Mavila (ibid.), is unknown, but it may be from Choctaw *moeli* 'paddle' (ibid.: 218). Mobile Bay "was the principal port prehistorically on the north shore of the Gulf" (Tanner 1989) and was likely a major crossroads not only for east-west travel along the Gulf but also for north-south

travel due to the six rivers from the northern interior draining into it: the Mobile, Alabama, Tombigbee, Black Warrior, Coosa, and Tallapoosa Rivers.

1.1.1.3 Geology.

Based on geological and geomorphic features, most of the LMV falls within the Coastal Plain of the northern Gulf of Mexico and ranges from sea level at the coast to about three hundred feet in the upland regions (Walthall 1980: 13). It is an area containing flat expanses to low, rolling hills and shallow valleys, a region of "sluggish, meandering rivers feeding innumerable swamps, some of vast size, thickly covered with cypress and cane…" (Hudson 1976: 15). "The coastal plain was rich with edible wild vegetables and fruits, including blackberries, palmetto, gooseberries, grapes, certain varieties of acorns, prickly pears, sea grapes, and several plants…" (ibid.). The plain contains "a mixture of broadleaf deciduous and evergreen species and several species of pine," including white hickory, swamp chestnut oak, laurel oak, white oak, southern white pine, shortleaf pine, longleaf pine, and loblolly pine (Walthall 1980: 15). There are broad floodplains along the coast, which are dominated by forests of cypress and several species of oak (ibid.).

1.1.1.4 Flora and fauna.

The Coastal Plain hosted many wild vegetables and fruits, including blackberries, palmetto, gooseberries, grapes, prickly pears, and certain types of acorns (Hudson 1976: 15). The LMV was home to deer, specifically white-tailed deer (*Odocoileus virginianus*), which were the primary prey for human hunters in the Mississippi Valley and Southeast well back into the millennia BCE (Smith 2009; Hudson 1976). Bear provided food, oil (for cooking), and skins.

Other animals hunted or caught included panther (cougar), beaver, otter, raccoon, muskrat, opossum, squirrel, rabbit, snakes, turtles, terrapins, alligators, crawfish, crabs, clams, mussels, and oysters (Hudson 1976: 17-18).

The LMV with its multitude of rivers, streams, lakes, and swamps, as well as the Gulf, provided a good year-round abundance of fish (Brain 1990; Hudson 1976; Kniffen et. al. 1987; Smith 2009; Yerkes 2005). Catfish and sturgeon were among the most important fish caught and eaten as well as several species of smaller fish like shad, suckers, bass, perch, sunfish, and mullet (Hudson 1976: 282).

Birds, especially migratory waterfowl, also provided a major source of sustenance with as much as two dozen different species of ducks, geese, and swans following this flyway corridor annually as they flew toward their southern wintering grounds in the LMV and coastal marshes of Louisiana, making for an almost inexhaustible food supply through the fall, winter, and spring (Smith 2009: 173). Turkeys and passenger pigeons[2] were also widely available and hunted (Hudson 1976: 280).

1.2 The Peoples of the Lower Mississippi Valley.

The peoples of the LMV treated in this dissertation include the Atakapas, Biloxis, Chitimachas, Choctaw-Chickasaws, Natchez, Ofos, and Tunicas. Only three of these, the Biloxis, Ofos, and Choctaw-Chickasaws, are known to belong to broader linguistic genetic families, Siouan in the case of the first two and Muskogean in the case of the latter. Each of the others is considered isolate with no known linguistic relatives. Each of them had carved out a niche in the LMV.

[2] The passenger pigeon (*Ectopistes migratorius*) is now extinct but for a time was so prolific as to darken the sky. This may, however, have been an inadvertent post-European phenomenon since few bones of the pigeon are found in archaeological digs dating prior to 1492 (Mann 2006: 356-7).

> The Natchez and their neighbors lived in a habitat of River-bottom and Transition Forest, the Chickasaw largely in Deciduous; the Choctaw … chiefly in the Pine ... the Chitimacha, and the supposedly Muskogian [*sic*] tribes downstream from New Orleans, in a region of prevailing marsh grassland (Kroeber 1953: 63).

I begin with a discussion of the peoples, in alphabetical order. Details on movements and migrations of peoples will be given in section 1.5. Details on the languages will be given in subsequent chapters.

1.2.1 Atakapas.

The Atakapas were located along the Gulf coast of what are now southern Louisiana and eastern Texas (ibid.), where they were located at least since European contact in the sixteenth century. The Atakapas called themselves *Yokiti* and *Takapo* (Gatschet and Swanton 1932) (the former name may be from the Atakapa word *yok* 'sing' + a possible word for 'people' *kiti*, thereby possibly meaning 'People Who Sing.') The name 'Atakapa' is an exonym bestowed upon them by Western Muskogeans meaning "Maneater," apparently due to the supposed Atakapan custom of ritual cannibalism. Groups of Atakapas lived on Vermilion Bayou, on Mermentou River, and on lakes near the mouth of the Calcasieu River (Swanton 1946: 93). According to Atakapa narrative (Gatschet and Swanton 1932: 11), the wife of the Western Atakapa chief Lo came to found a new nation of Atakapas "yonder toward the rising sun" (ibid.), those who came to speak the Eastern Dialect (see text in Appendix). Western Atakapas lived around Lake Charles. Swanton estimated a population of between 1000-3500 ca. 1805 (Swanton 1946: 94). Although Swanton (1932) incorporated Béranger's short vocabulary of Akokisa (a

people who lived on Galveston Bay) into his Atakapa dictionary, “there is no direct evidence that it [this vocabulary] reflects their [Akokisa] language” (Goddard 2005: 38).

1.2.2 Biloxis.

Biloxis, who call themselves *Tanêks(a)* (Dorsey and Swanton 1912: 5), settled the farthest south of any currently known Siouan group. Biloxis and Ofos (see below) are Ohio Valley Siouans who may have been a single group prior to ca. 800 CE. With the appearance of the bow ca. 400-600 CE and of beans, which spread from the Southwest to the Southeast ca. 1100 CE, Biloxis and Ofos acquire separate terms for the first time (Rankin 2007, pers. comm). Such linguistic evidence then suggests a Biloxi-Ofo split ca. 600-1100 CE. Biloxis are first known to have made contact with Europeans in 1699 where they lived on the Pascagoula River near Mobile Bay (Swanton 1946: 96; Goddard 2005: 9). (The modern resort city of Biloxi, Mississippi and Biloxi Bay are named for them.) Biloxis may also have been “the Istanane [Estanani] mentioned in narratives of the Spanish expeditions of 1693 to survey Pensacola Bay, said to be a very numerous tribe living ‘along a western bayou in Mobile Bay’” (Swanton 1946: 96; Waselkov and Gums 2000: 25). ‘Annocchy’ may have been another name for Biloxis (Waselkov and Gums 2000: 26), both ‘Estanani’ and ‘Annocchy’ assumed to be mis-hearings or mis-renderings of the Biloxi autonym *Tanêks-ąyaa*. If this is the case, then Biloxis may have had slightly earlier contacts with Spaniards ca. 1693 (Goddard 2005: 9). It also may indicate, given the prior Spanish estimate of their being “very numerous,” that smallpox epidemics, prior to their meeting with the French, may have reduced their numbers considerably. The Biloxis “appear at various places and at various times in the documentary record. They seem to have either gone through a series of movements throughout the late seventeenth century or were divided into

several towns stretching from present-day central Alabama to the Gulf coast" (Ethridge 2010: 174).

Biloxis, along with other Siouans, likely originated in the western Appalachian, or Cumberland Plateau, region near modern Knoxville, Tennessee (see section 1.5). The population of Biloxis was estimated between 30 and 70 between 1805 and 1829 (Swanton 1946: 98). Today, Biloxis share a reservation with Tunicas, an unrelated group, in Marksville, Louisiana.

1.2.3 Chitimachas.

Chitimachas, who call themselves *Sitimaša* (Hieber 2013), were situated in what is now southwestern Louisiana, around current Grand Lake and between the Bayous Lafourche and La Teche and the Gulf of Mexico. It is in this region, which the Chitimachas called *Šeyti* (Swadesh 1939: 67)[3], where several archaeological mound sites (16SM5[4] Hipinimtc Namu; 16SMY2 Okunkiskin; 16SMY10 Qiteet Kutingi Namu [see Fig. 1.2]) known to have been inhabited by them are found (Rees and Livingood 2007: 78-87). Chitimachas are first discussed in 1699 with French colonization of the area (Swanton 1946: 119). "Washa and Chawasha, two small tribes immediately to the east" were also Chitimachan, speaking the same or similar language (Goddard 2005: 13). After a Chitimacha warrior killed the missionary Jean-Francois Buisson de St. Cosme in 1707, French colonists took many Chitimachas, among others[5], as slaves to work in their own fields or were sent to Saint Domingue (modern Santo Domingo, in what is now the

[3] The exact definition of *Šeyti* given by Swadesh is: "Grand River, all the way from Red River to the Gulf and subsuming a number of stretches separately named in English (Whiskey Bay + Grand River + Belle River + Achafalaya)" (1950: 67).
[4] 16SM5 is a numerical designation assigned by the Smithsonian Institution for archaeological sites. I use such numbers in connection to archaeological sites throughout this dissertation.
[5] Other indigenous groups to appear sporadically in colonial slave records include Taensas, Mobilians, Natchitoches, Chickasaws, Natchez, Abikas, Cowetas, Altamahas, Paducahs, and Panis or Paniasas (Paniouacha) (Waselkov and Gums 2000: 35).

Dominican Republic) to work on plantations there. A census of 1930 confirmed a population then of 51 (Swanton 1946: 121). A revitalization program of the language has been instituted (Hieber, 2010, pers. comm.).

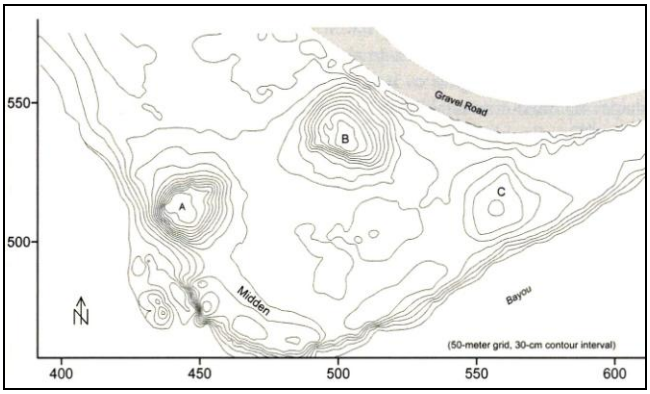


FIG. 1.2: Diagram of Chitimacha Qiteet Kuti'ngi Na'mu mound site (16SMY10) in Louisiana, mounds marked A, B, and C (from Rees and Livingood 2007: 85)

1.2.4 Choctaws and Chickasaws.

Choctaws and Chickasaws, who call themselves *Čahta* (Byington and Swanton 1915) and *Čikaššah* (Munro and Willmond 1994) respectively, are Western Muskogean groups who came to inhabit modern Mississippi and Alabama and peripheral areas. De Soto first encountered the Muskogeans in 1539, when they lived in what became modern South Carolina, Tennessee, Kentucky, Mississippi, Alabama, Georgia, Florida, and Louisiana (Mithun 1999: 461). Most Muskogeans were forced to move westward under the Great Indian Removal Act, what became known as the Trail of Tears, in 1836-1840 (ibid.).

Galloway (1994) has argued that a late sixteenth- or seventeenth-century confederation of refugees or remnant populations united to form the Choctaws, from whom the Chickasaws later separated, though this is at odds with Swanton's assertion that de Soto encountered the Chickasaws in December 1540 during his *entrada* (1946: 116), perhaps indicating they were

already separated by this time. Most Choctaws immigrated into what is now Oklahoma in 1831-33 though some remain in Mississippi to this day (Swanton 1946: 122). The Choctaws, during the 18th century, had settled in a swath of territory bordered by the Pearl River on the west and the Tombigbee River on the east, from what is now central Mississippi to western Alabama (Galloway and Kidwell 2004: 500). The Chickasaws, from the 16th-18th centuries, had settled territory north of the Choctaws, bounded by the Mississippi River on the west north to the Ohio River and along the Duck River to the east, occupying modern northern Mississippi, western Tennessee, southern Illinois, and northwestern Alabama. The Chakchiumas lived in northern Mississippi from ca. 1540 to the 1750s, before being "amalgamated with the Chickasaw" (Galloway and Kidwell 2004: 496). Choctaws, in the eighteenth century, came to venerate a mound they named *Nanih Waiya* 'Bent Hill' (Fig. 1.3) as their point of origin and emergence (see Choctaw text in Appendix). The mound is located 15 miles (22 km.) northeast of Philadelphia, Mississippi. The mound is a 25-foot high platform mound, and an earthen embankment once enclosed the complex (Little 2009: 135). Ceramics found in the area date to between 100 BCE-400 CE, indicating that the mound is contemporaneous with Hopewell culture (ibid.). The site's original builders and inhabitants, however, are unknown.

FIG. 1.3: Photo (ca. 1913) of Nanih Waiya 'Bent Hill,' from which a Choctaw origin story claims that they and others emerged.

Today, many Choctaw and Chickasaw descendants inhabit Alabama, Mississippi, and Oklahoma. There were reportedly between 3000-3500 Chickasaws in 1700 (Swanton 1946: 119). "[T]he Choctaw population seems always to have fluctuated between 15,000 and 20,000" (ibid.: 123). The census of 1930 gave "17, 757, of whom 16,641 were in Oklahoma, 624 in Mississippi, 190 in Louisiana, and the rest scattered over more than 12 other states" (ibid.). The Chakchiumas were situated between the Choctaws and Chickasaws and were reported to speak the same language as the Chickasaws (Goddard 2005: 11), but the language is now dormant and was not documented. It is thought that the Houmas, who were found on the east bank of the Mississippi below the Natchez in 1682 (ibid.: 40), were probably an amalgam of Chakchiuma, Bayogoula, and Colapissa but their nation ceased to exist by ca. 1805 (ibid.).

1.2.5 Natchez.

Natchez (autonym *Nače* [Van Tuyl 1980]) are perhaps the best known of the LMV groups due to their being the longest surviving Mississippian culture and due to the prolific European documentation of their heavily stratified caste-like society, ranging from the "Suns," or rulers, down to "Stinkards," the lowest class. In 1722 wars involving the Natchez and French broke out that were "put down with considerable severity by Bienville" (Swanton 1946: 159). In 1730 "French troops with Choctaw allies attacked the Natchez," (ibid.) and in 1731 the French sent 400 Natchez into slavery in Saint Domingue in the Caribbean. Some Natchez escaped to reside with the Cherokee, Creek, and Chickasaw nations, some coming to reside in South Carolina. "[A] great deal of Natchez blood flows in the veins of both Cherokee and Creeks" (ibid.: 160).

During the Plaquemine, or Mississippian, period, "[m]aterial and geographical continuities" (Beasley III 2007: 127) suggest that the Anna Mounds site (22AD500) (see Fig. 1.4) was likely once occupied by Proto-Natchez. Later, in the late 17th and early 18th centuries, Natchez inhabited the mound settlement of the Grand Village of the Natchez (Fatherland) (see Fig. 1.5). As of 1980, a Natchez ceremonial dance ground was still located at Medicine Spring near Gore, Oklahoma, at which "at least several hundreds of people who remember their Natchez ancestry with pride" still gathered (Van Tuyl 1980: 62).

Taensas were likely also Natchesan, apparently speaking the same language (Swanton 1911: 22; Goddard 2005: 13). There is also evidence that Colapissas, who lived on the lower Pearl River at the end of the seventeenth century, may also have been Natchesan (Goddard 2005: 13).

a. b.

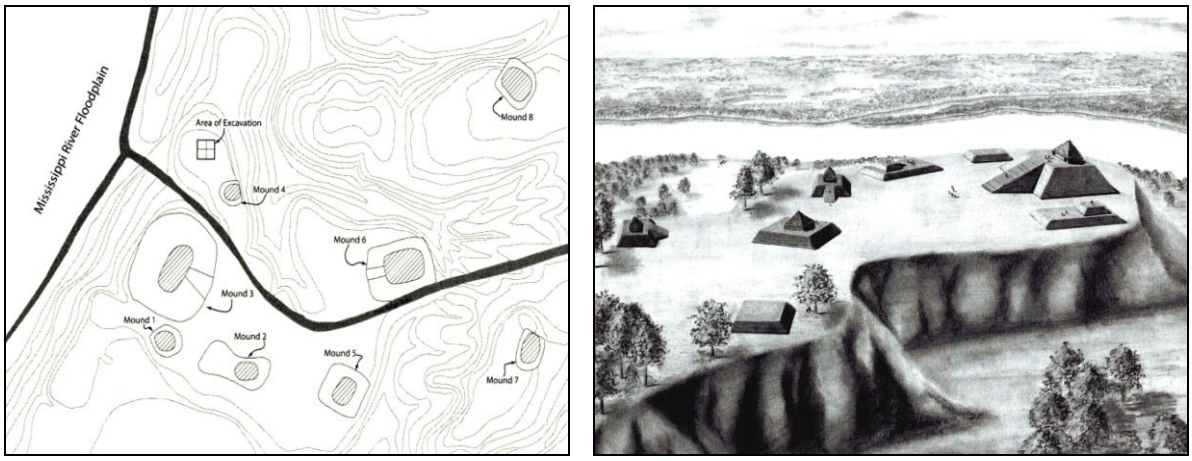


FIG. 1.4: a. Diagram of the Anna Mounds group (mounds numbered 1-8) in Mississippi, possibly inhabited by Proto-Natchez during the Plaquemine Period (from Rees and Livingood 2007: 131 [after Jennings and Wagner 1940]); b. Reconstruction drawing of the Anna Mounds site (by Dee Turman, in Little 2009: 121).

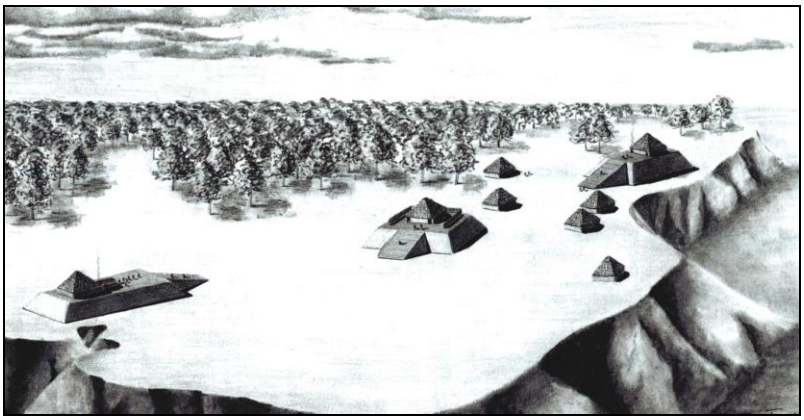


FIG. 1.5: Reconstruction drawing of the site later occupied by Natchez, Grand Village of the Natchez (Fatherland) (by Dee Turman, in Little 2009: 128).

1.2.6 Ofos.

The Ofos appear under the names Ofogoula (a Western Muskogean or MTL term meaning 'Dog-people') and Mosopelea. The latter term occurs on French maps indicating that "some years before 1673 they lived in 8 villages in or near southern Ohio. They are said to have been driven from this country by the Iroquois and in 1673 Marquette found them on the east bank of the Mississippi below the mouth of the Ohio" (Sapir 1946: 165-66). This would indicate that the Ofos were relatively late migrants from the Ohio Valley to the Mississippi Valley where they eventually came to live with Tunicas, Koroas, Yazoos, and Avoyels at the Haynes Bluff mound settlement (Brain 1988) (see Fig. 1.6). Remaining Ofos then migrated up the Red River and assimilated into the Tunica-Biloxi Tribe in current Marksville, Louisiana. The group is now thought extinct, the last known Ofo, Rosa Pierette, having died ca. 1915 (Sapir 1946: 166).

1.2.7 Tunicas.

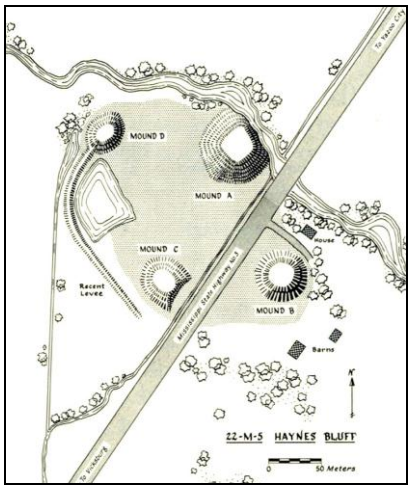
The documented history of the Tunicas begins with the final leg of de Soto's ill-fated *entrada* into North America in the early sixteenth century (Brain 1988: 21).

> The splendidly accoutered army that had landed in Florida in the spring of 1539 was reduced by the spring of 1541 to a tattered band that was desperately seeking escape from the whole terrible adventure. The Spaniards therefore headed for the Mississippi River, which they seemed to know would take them to the Gulf of Mexico and a return to Spanish dominions (Brain 1988: 21).

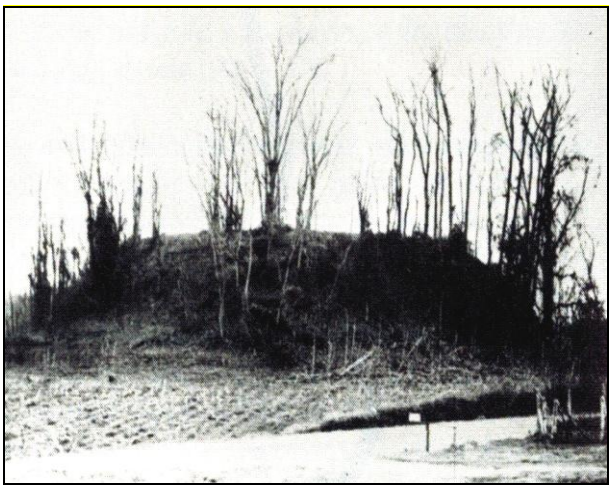
In 1542, at the time of the *entrada*, Tunicas, who called themselves *Táyoroniku* from *tá-* 'def. article' + *yóroni* 'Tunica' + *-ku* masculine singular suffix (Brown and Phillips 2004: 595; Haas 1950a: 19, footnote 2) were located in the region of the confluence of the Arkansas and Mississippi Rivers. It was when the Spanish reached the Mississippi River that they entered "the native 'province' of Quizquiz" (Brain 1988: 21), where the name "Tanco" or "Tanico" appears on their maps of the Upper Sunflower region (ibid.) (the French subsequently called them "Tonicas"). Quizquiz "has been hypothetically identified as the ancestral hearth of the Tunica" (Brain 1988: 21; Hoffman 1992: 67). Later, the Tunicas, along with some other smaller groups, were settled on the lower Yazoo River, just east of the Mississippi River, at Haynes Bluff (22-M-5) (Fig. 1.5), a mound settlement on the lower Yazoo River four leagues from the Mississippi (Brain 1988: 196; Brain and Phillips 2004: 586), at a time when "an epidemic was killing the Tunicas in great numbers…." (Brain and Phillips 2004: 586). In 1974, the Tunicas were incorporated along with the Biloxis as the Tunica-Biloxi Tribe, and they were federally acknowledged in 1981 (ibid.: 589). Today, most Tunica descendants inhabit the Tunica-Biloxi Reservation in Marksville. Grigras, Koroas, Tioux, and Yazoos may have been Tunican, but

nothing else is now known of these groups (Goddard 2005: 12). Tunica legends describe a battle between themselves and the Avoyels (see below), a conflict that may have largely decimated the Avoyels, leading Tunicas to absorb some Avoyel survivors into their settlement (Brain and Phillips 2004: 589).

a.



b.



c.

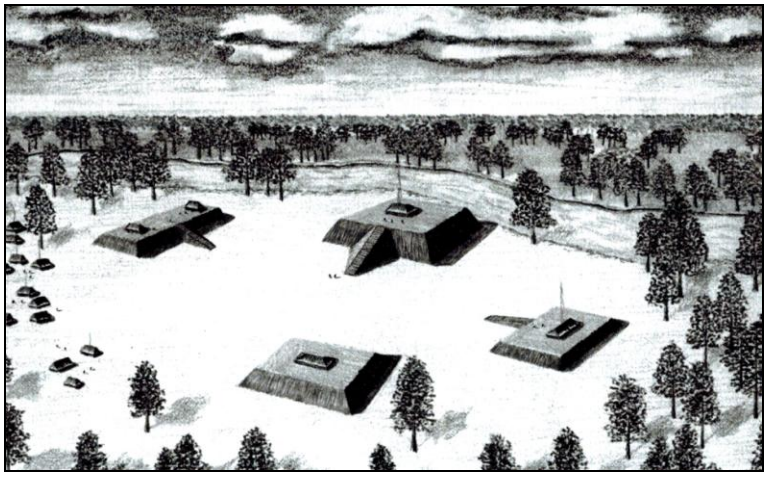


FIG. 1.6: a. Diagram of Haynes Bluff Mounds (22-M-5) site (Phillips 1970: 430, Fig.178); b. Photo (ca. 1932) of Mound A at Haynes Bluff site (Brain 1988: 198, Fig. 159); c. Reconstruction drawing of Haynes Bluff Mounds site (by Dee Turman, in Little 2009: 129).

Peoples and languages of the LMV region that are too poorly documented to be dealt with in this dissertation include Akokisa, Avoyel, Bayogoula, Bidai, Houma, Mobila, Moctobi

(Capinan), Naniaba, Okelousa, Opelousa, Pascagoula, Quinipissa, Tawasa, Tohomé and others mentioned above. Of these, the Mobila, Naniaba, and Tohomé were classified as Muskogean speakers under the name 'Mobile' in Goddard (1996), "but more likely they were users of Mobilian Jargon (see 1.2.3.5) rather than native speakers of Western Muskogean" (Goddard 2005: 40). The Moctobis were "evidently the Capinans" whose language may have been Siouan (Waselkov and Gums 2000: 23) like that of the Biloxis and Ofos. The Moctobis (Capinans) had a village on the Pascagoula River (ibid.) as did the Biloxis and Pascagoulas (ibid.: 26), for whom the Pascagoula River is named. The Tawasas and Tohomés were apparently prosperous tribes, along with the Estananis (Biloxis), whom the Mobilians perceived as threats (ibid.). Avoyels apparently at one time battled the Tunicas, which may have greatly decimated Avoyel numbers (see above) (Brain and Phillips 2004: 589).

1.3 History of the Lower Mississippi Valley.

The building of monumental earthworks (especially mounds), trade, and agriculture all contributed to the history of the Lower Mississippi Valley (LMV), which I will now address. The LMV is important in the history of North America as is evidenced by the fact that "[s]ome of the largest and most impressive [archaeological] sites in North America are found in this part of the Southeast" (Kidder 2004: 545).

This section summarizes claims put forth by archaeologists who focus on the LMV area. It is sudivided into the following discussions: (1) archaeological time periods as a framework in which to place the historic events of the LMV; (2) mounds, earthworks, and mound building; (3) ceramics; (4) trade; (5) agriculture; and (6) Cahokia and Mississippian culture.

1.3.1 Archaeological periods.

LMV history can be viewed through the prism of established North American archaeological periods, as seen in the following tables.

TABLE 1.1: North American archaeological periods.

Period	*Year range*
Archaic	8000-1000 BCE
Woodland	1000 BCE-1000 CE
Mississippian	1000-1700 CE

TABLE 1.2: These periods are further refined in the LMV (after Roe 2007: 23, 28).

Period	*Year range*
Poverty Point	1600-500 BCE
Tchula (Tchefuncte)	500 BCE-1 CE
Marksville (Hopewell)	1-500 CE
Troyville (Baytown)	500-700 CE
Coles Creek	700-1200 CE
Plaquemine (Mississippian)	1200-1720 CE

By means of comparison, the Archaic period in North America[6] correlates more or less with the Stone and Bronze ages in the Near East and the Paleolithic-Bronze Age in Western Europe. The beginning of the North American Woodland period correlates with the Mesoamerican Formative, or Preclassic, period until ca. 250 CE. After 250 CE the Classic period

[6] Although Mexico is geographically part of North America, for purposes of this dissertation I use the archaeological term 'Mesoamerica(n)' to refer only to Mexico as opposed to North America north of the modern Mexican border.

extends up until ca. 900 CE, about the time of the Classical Maya "collapse." The North American Mississippian period roughly correlates with the Mesoamerican Postclassic period until ca. 1515 CE. Further, the Mississippian period correlates with the Plaquemine period in the LMV.

Tchula period peoples were the first to fully adopt ceramics for cooking and storage, and their weaponry focused on the use of the dart and atlatl (spear thrower) (Kidder 2004: 546). Limited subsistence data during this time period suggests an "exclusive reliance on wild plants and animals" (ibid.: 547). Tchula populations were descendants of the Poverty Point people, but there is no evidence that Tchula people traded over long distances (ibid.: 548).

The Marksville period demonstrates classic "Middle Woodland" traits such as mound building, mound burials, long-distance trade in exotic goods and participation in the Hopewellian iconographic pattern. (Hopewell Culture, centered in the Ohio Valley ca. 1-500 CE, spread its artistic symbolism and iconography throughout much of the Midwest and South, anticipating the future Mississippian Culture whose sphere of influence some 500 years later closely mirrored that of Hopewell.) Early and late Marksville period sites in the Mississippi River delta and along the coast are poorly documented (Kidder 2004: 548). Marksville mounds and earthworks were scattered throughout the LMV (ibid.: 550). Marksville people maintained frequent contacts with populations to the north and east of the Mississippi Valley (ibid.: 551).

Troyville (Baytown) period settlements and social organization were highly variable (Kidder 2004: 553). Troyville populations displayed a complex pattern of settlement organization with burial mounds usually low and conical or rounded in shape (ibid.).

Coles Creek was a period of increasing cultural change, and sites were generally larger than in earlier times (Kidder 2004: 554). Long-distance trade appears infrequent and there is

little evidence of contacts with groups outside of the LMV (ibid.). Coles Creek mounds changed from simply covered burials to platform mounds atop which foundations for perishable structures were built with burials later deposited in them (ibid.).

1.3.2 Mounds, plazas, and moundbuilders.

The LMV is home to the first earthworks and earthen mound complexes to appear in the Americas. It is during the Archaic period ca. 3500 BCE that the first mound complex, Watson Brake (see below), was constructed in what is now northeastern Louisiana, antedating those of Mesoamerica by about two thousand years.

It is believed that mounds began primarily as either effigy mounds occurring in the shape of animals such as birds or snakes, or as burial mounds, in which were buried certain deceased. Mounds also represented a legitimization of power and rulership:

> Mounds were not only physical symbols of elevated position but also ways to legitimize power by symbolically connecting elites to their ancestors who often were buried in the mounds. Mound building allowed individuals and groups to express status in a region where emerging political and social elites were competing for power and prestige (Kidder 1998; Kidder 2004; Steponaitis 1986).

The building of mounds and plazas led in the nineteenth century to the "mound builder" controversy (Brain 1988: 48), the controversy over who exactly built the thousands of earthen mounds and earthworks dotting the middle and southern regions of North America, including in the LMV. Hypotheses as to the builders ranged from a lost tribe of Israel to the Toltecs of Mexico (MacLean 1879)—some people who had once been here and left—since few Europeans believed that the ancestors of the modern Native North Americans they encountered were

"civilized" enough to have organized and engineered the moving of earth on such a grand scale as to build these massive earthen monuments and complexes, which I will now briefly examine in the following order: Watson Brake, Poverty Point, Marksville, Troyville, and Bottle Creek.

Watson Brake, the first and oldest known mound complex in the Americas, dated to ca. 3500 BCE, has an oval earthen embankment enclosing 22 acres (Little 2009: 110). The embankment ranges from two to five feet tall, measuring 900 feet from end to end and 600 feet across (ibid.). Situated along the top of the embankment are eleven conical earthen mounds (ibid.). "It is now thought that Watson Brake may be similar to the shell ring cultures of Florida and the eastern seaboard" (ibid.).

Poverty Point (Fig. 1.7), near current Epps, Louisiana, dating to ca. 1600 BCE, is one of the largest earthen mound complexes in North America, with "a three-quarter mile long set of earthworks arranged into a semi-octagon," which were found to be elevated terraces "upon which small houses had been erected" (Little 2009: 107). A massive mound 72 feet tall is thought to be an effigy of a bird with its wings spread (ibid.).

FIG. 1.7: Reconstruction of Poverty Point, Louisiana showing concentric embankments with houses, the plaza, and mounds on the periphery (from cdn.nationalparks.org).

The Marksville Culture, centered around modern Marksville, Louisiana ca. 100-500 CE, represented the Ohio Valley-based Hopewell Culture in the LMV, its flagship mound complex being the Marksville mounds, now a Louisiana state historic site. A 3300-foot long semi-circular earthwork ranging between three and seven feet tall surrounds these mounds (Little 2009: 103).

Similarly, the Troyville (Baytown) Culture is primarily named for the Troyville Mounds (Fig. 1.8) near modern Jonesville, Louisiana, which were built at different times between 1-700 CE. This was "one of the largest and most important mound sites in all of Louisiana" but today little remains of the site, which was almost totally destroyed, especially after the Civil War (Little 2009: 109). Thirteen mounds once stood at the site. The largest mound consisted of two terraces surmounted by a cone (Kidder 2004: 554), which was 75 feet tall with a base of 160 by 250 feet (Little 2009: 109), the second largest pyramidal mound in Native North America (after later Cahokia's Monks Mound).

a. b.

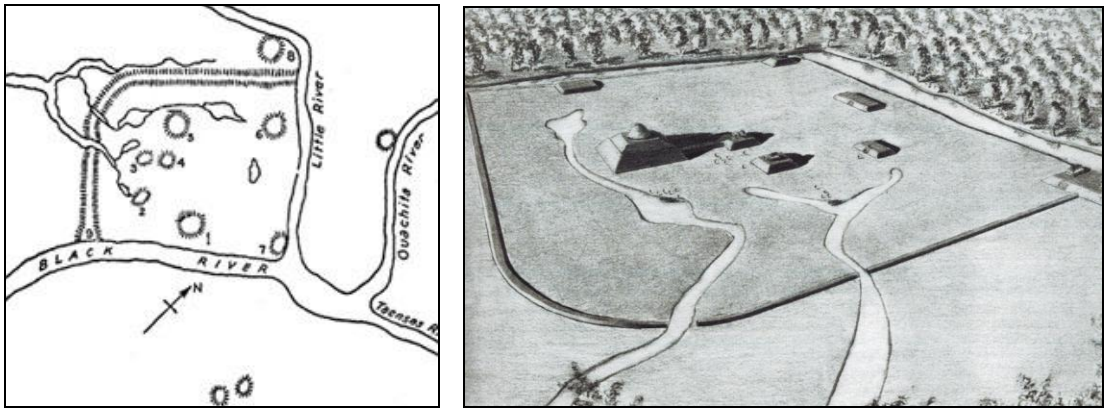


FIG. 1.8: a. Plan of Troyville Mounds, showing mounds numbered 1-8 (allegedly by William Sturtevant, from catahoulahistory.org); b. Reconstruction drawing of Troyville Mounds (by Dee Turman, in Little 2009: 110).

During the Coles Creek period, mounds changed from covered burials to platform mounds atop which foundations for perishable structures, such as houses or temples, were built (Kidder 2004: 554).

The Plaquemine (Mississippian) culture arrived about 500 years later. Large mound complexes during this period include Lake George (Holly Bluffs), Anna, Medora, Winterville, and the Grand Village of the Natchez (Fatherland) sites, which tended to combine elements of Coles Creek architecture with that of Plaquemine, or Mississippian. This is the period during which the most intriguing similarities between Mesoamerica and eastern North America seem to occur, though there are earlier possible indications of at least a trade relationship between Mesoamerica and eastern North America, such as the possible "Latin American" ceramic influence in the Bayou La Batre pottery of the Mobile Bay area ca. 1012-120 BCE (Walthall 1980: 85).

Bottle Creek (1BA2), built ca. 1250 CE, around the time of the decline of Cahokia, is "one of the major protohistoric sites in Alabama and the Southeast" (Walthall 1980: 269). Bottle Creek is situated in the Mobile-Tensaw delta just north of Mobile Bay and "has at least 18 mounds plus various associated non-mound habitation areas…." (Brown 2003: 1). The principal mound is a flat-topped pyramidal mound about 46 feet (14 m.) tall (ibid.). The location of Bottle Creek is in a swampy flood-prone delta, which likely made year-round habitation difficult if not impossible (Brown 2003). It has been speculated that this location was chosen for this huge mound complex because the site itself was "sacred" (ibid.: 220). However, I believe the location may have been for more practical reasons: it was situated near a probable high-activity trading port (Mobile Bay) and was located near several salines, or salt springs, situated along the Tombigbee River, as portrayed on a map dated ca. 1816 by Thomas Freeman, Surveyor General

for Lands South of Tennessee (as appears in Waselkov and Gums 2000: 40, Fig. 23). Bottle Creek may have served as a center of salt trade (Galloway 1995: 62) along with other items. Bottle Creek itself may have served as a principal port in the region, showing evidence of a manmade 656-foot (200 m.) canal at the site (Rodning 2003: 198).

1.3.3 Ceramics and artifacts.

The oldest known pottery in North America, called Stallings Island pottery, appeared on the Atlantic coast in what is today northeastern Florida and southeastern Georgia ca. 2500 BCE. The first pottery to appear in the LMV, about a thousand years later, is a ceramic tradition called St. John's, appearing at Poverty Point (Saunders and Hays 2004: 3). Although these authors posit "discrete stylistic traditions" in the Gulf region, "the overarching Gulf tradition contains a suite of surface decorations and vessel forms that distinguish it from its counterparts" to the north (ibid.). This earliest pottery was presumably used by the many small groups of hunter gatherers living along the Gulf coast and in the LMV. In the LMV, the Tchula period peoples between 500 BCE and 1 CE were the first to fully adopt the use of ceramics (Kidder 2004: 546).

A new ceramic complex appears ca. 1012-120 BCE, perhaps "derived from the Latin American Formative…" (Walthall 1980: 85). This ceramic complex, which appears along Mobile Bay at Bayou La Batre sites contains characteristics for which there "are no known precedents … in the Southeast" (ibid.), thus leading to the conclusion that this new ceramic style appearing along Mobile Bay may have been an import from Mesoamerica.

Proto-Siouans may have brought Mississippian ceramic influences with them during their southward migration, such as in the form of Old Town Red pottery, a red-filmed pottery of "northern connection" (Brain 1988: 393) that shows up in the Yazoo River basin during

Mississippian times (Phillips 1970; Brain 1988). Certain ceramic sets of the lower Yazoo Basin, where Siouans are known to have settled with the Tunicas (Haynes Bluff), "may identify the Ofo" (Brain 1988: 393). A "thrust from the north," while not necessarily an "invasion," produced a new phase in the Lake George region to which "we can apply the term 'Mississippian' in a full cultural sense" (Phillips 1970: 13).

1.3.4 Trade.

The Southeast has been a major center of long-distance trade at least as far back as the fourth millennium BCE, even preceding the development of mound-and-plaza architecture[7] (Brown et al. 1990: 273; Jefferies 1996: 225; Johnson 1994: 100), although it appears that long-distance trade fluctuated in intensity at various times in LMV history (Kidder 2004; Johnson 1994). Items traded included chert, copper, ceramics, galena, soapstone, meteoritic iron, and marine shell (Johnson 1994), with the three highest valued materials being copper, marine shells, and freshwater pearls (Brown et al. 1990: 260). Salt was a "utilitarian item that appears to have been traded widely in the Midwest and northern Southeast" and coincides "fairly closely with the distribution of hoes" (Johnson 1994: 116).

Some archaeologists believe that Poverty Point, ca. 1500 BCE, served as a major trade center, with marine shells and fiber-tempered ceramic sherds from western Florida (Kehoe 1998: 154) and copper artifacts from the Great Lakes dating back to 4000 BCE (Brown et al. 1990: 273). The LMV's prime location along the Mississippi River ensured a navigable north-south route of transport and its location along the Gulf coast ensured an east-west and circum-Gulf route.

[7] This architecture later came to symbolize for archaeologists not only the Mississippian but also Mesoamerican and Peruvian cultures.

Cahokia (see 1.3.6), while not physically located in the LMV, may have influenced it ca. 1050-1200 CE, particularly the Yazoo Basin, especially in the realm of ceramics (Wells and Weinstein 2007). There is "unmistakable evidence of direct contact" between Cahokia and the LMV, primarily in the Yazoo Basin region (ibid.: 52). This contact is evident at the Winterville, Shell Bluff, and Lake George (Holly Bluff) sites (ibid.: 55). The latter shows evidence of occupation by Tunicas and Ofos, two LMV groups, the latter Siouan (Brain 1988).

Unfortunately, "[a]rchaeologists and historians are still enormously biased in favor of explaining cultural interaction in the past as a result of travel over land … when for most of the human past it was much more difficult and far less relevant than water travel" (White 2005: 14). In the Gulf area, with its many streams and rivers, water provided the best and quickest means of trade and transport. The fact that the majority of chert found at Poverty Point was from modern Illinois, Indiana, and Missouri rather than chert from the Appalachian Mountains suggest that this chert from the Middle Tennessee Valley arrived in Poverty Point via the Tennessee, Ohio, and Mississippi Rivers rather than overland (Johnson 1994: 110).

The placement of the Bottle Creek site in Alabama, in the middle of a swampy river delta above Mobile Bay, in itself "speaks to the significance of water travel as a force in shaping Mississippian settlement…" (Rodning 2003: 195). Indigenous canals have been identified at localities along the Gulf coast, and a canal in Bottle Creek possibly engineered and constructed by its inhabitants has also been found (ibid.: 198). Atakapas, among probably many other coastal Native American groups, were apparently familiar with deep water Gulf coastal travel, since they had words for 'porpoise' *hatpuns* (lit. 'back-blow') and 'shark' *nokkam* (lit. 'protruding-fin') (Gatschet and Swanton 1932). The teeth of the latter were traded, making it of particular economic importance.

Mobile Bay in present-day Alabama "was the principal port prehistorically on the north shore of the Gulf" (Tanner 1989). Mobile Bay was likely a major crossroads not only for east-west travel but also for north-south travel due to the six rivers from the northern interior draining into it: the Mobile, Alabama, Tombigbee, Black Warrior, Coosa, and Tallapoosa Rivers.

The primary craft was the dugout canoe, which, by means of fire, was hollowed out of a single log of bald cypress, poplar, or pine, though some larger ones were made of cottonwood (Hudson 1976). Canoes could reach enormous proportions and were used for warfare as well as trade and transportation. That at least the largest canoes were likely seaworthy appears evident from the discovery of certain species of barnacles at Bottle Creek that "probably arrived there in boats that had traveled across Mobile Bay or the Gulf itself" (Rodning 2003: 203).

Unfortunately, "[a] unified theory of trade has not arisen in Southeastern studies" (Johnson 1994: 116). However, it is likely that "interregional alliances" may have played a large role in ritual exchange (ibid.: 115; Brown et al. 1990: 253).

1.3.5 Agriculture.

It has been claimed that the first evidence for a shift from hunting and gathering to farming in North America appears midcontinent through the Central Mississippi Valley as early as ca. 4000 BCE (Smith 2011). Evidence for the early use of domesticated Native American crops is strongest at the northern edge of the LMV (Kidder 2004: 552). As part of a floodplain, the LMV served as a limited center of agricultural production of primarily native North American cultigens since at least ca. 2000 BCE, although it was not a major agrarian center until ca. 1200 CE with the arrival of intensive maize agriculture from the north (Kidder and Fritz 1993). This was the beginning of the Mississippian, or Plaquemine, culture in the LMV, although

the Yazoo River basin in the northern LMV had stronger ties with Mississippian culture (see 1.3.6) to the north even before this.

These early North Americans, like ancient Mesopotamians and Egyptians, took advantage of the yearly river floods that provided optimal growing conditions and fertility. "Three of the four species brought under domestication in eastern North America—marshelder, chenopodium, and *C. pepo* gourds—are floodplain 'weeds,' aggressive pioneers of the disturbed and exposed solid situations created on an annual basis by spring floods" (Smith 2011: S477).

Native seed crops "do not occur as major foods south of northern Alabama" (Fritz and Kidder 1993: 7). At the Reno Brake site in north-central Louisiana there is evidence of the consumption and use of acorns (*Quercus sp*.), pecans, and fruits such as grape (*Vitis sp*.), persimmon (*Diospyros virginiana L*.), and palmetto (*Sabal minor*) (ibid.). There is indirect evidence (chipped stone bifaces and flakes exhibiting a high degree of polish) of hoe cultivation in Poverty Point, but *C. pepo* squash is the only potential cultigen well documented in archaeobotanical assemblages in Poverty Point (ca. 1500 BCE) (Fritz and Kidder 1993).

Maize likely first arrived in North America from Mesoamerica, first in the Southwest ca. 3000 BCE, then later in the Southeast ca. 1500 BCE at Lake Shelby (Clark and Knoll 2005; Fearn and Liu 1995: 109), in modern-day coastal Alabama near Mobile Bay, and ca. 400 BCE at the north end of the Tombigbee River, a tributary of the Mobile River, in what is now northeastern Mississippi (ibid.: 110)[8]. Rather than first occurring, as one might expect, in regions closer to Mesoamerica, the first securely dated evidence of maize (based on pollens) in eastern North America occurs about 144 miles (232 km.) east of the Mississippi River near Mobile Bay, which, as earlier suggested, was a Native American "principal port" (Tanner 1989).

[8] Though peripheral to this dissertation, evidence of maize also occurs in south-central Florida ca. 500 BCE and in the Dismal Swamp region of coastal Virginia ca. 200 BCE (Fearn and Liu 1995: 110).

1.3.6 Cahokia and Mississippian culture.

Mississippian ideology consisted of a geographically broad politicoreligious tradition based on "artifacts, symbols, motifs, and architectural groupings that provide the physical evidence for the ritual activities practiced by … numerous ethnic groups" (Reilly and Garber 2007: 1). This ideological and artistic tradition began ca. 700 CE and spread throughout much of the northern Plains to the Gulf and beyond, ranging from what is now southern Wisconsin to northern Florida, and from the western Appalachians to just west of the Mississippi River. It ended in 1731 with the French destruction of the Grand Village of the Natchez in modern-day Natchez, Mississippi. "That several of the Mississippian symbols consistently cross stylistic and regional boundaries over time is undoubtedly due to the fact that these symbols and motifs carry the fundamental tenets of an overarching religious system" (ibid.).

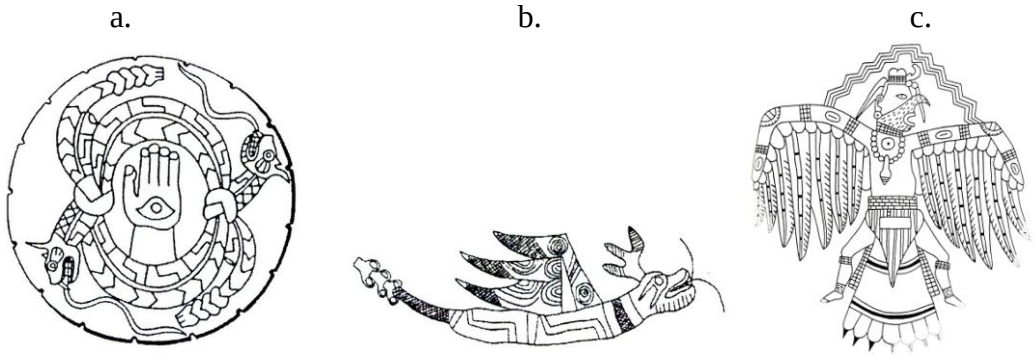


FIG. 1.9: Mississippian period (ca. 900-1700 CE) motifs: a. Eye-in-hand surrounded by rattlesnakes (drawn from a rubbing by Barbara Page, in Phillips and Brown 1978, Fig. 208 in F. Kent Reilly III 2011: 122, Fig. 6.1); b. Feathered serpent, combining aspects of a panther, deer, rattlesnake, and falcon, drawn by F. Kent Reilly III in F. Kent Reilly III 2011: 122, Fig. 6.1); c. Birdman or Falcon Dancer (drawing taken from a Braden-style shell cup fragment, from Phillips and Brown 1984: Pl. 203 in F. Kent Reilly III 2007: 45).

Mississippian iconography (Fig. 1.9) included the swastika, the eye-in-hand motif, the skull and bones motif, the bilobed arrow motif, a feathered (and sometimes horned) serpent, and

a representation of the Birdman or Falcon Impersonator, often including a forked-eye motif, likely associated with warfare and the military (Reilly and Garber 2007: 5).

FIG. 1.10: Reconstruction of Cahokia. Though located far above the LMV, near modern St. Louis, and peripheral to this dissertation, the ancient city of Cahokia was considered the 'capital' of Mississippian culture, and its influence radiated in all directions, including at least into the northern LMV around the Yazoo Basin. (From web.mesacc.edu.)

One of the most important North American Plains civilizations was known as Cahokia, a "true archaeological behemoth" (Pauketat 2007: 48). Cahokia (Old Cahokia) was originally established ca. 700-800 CE (Pauketat 2009) near the Mississippi River and modern St. Louis in a region called the American Bottom. Cahokia was rebuilt (New Cahokia) ca. 1050 (see 1.3.6) to become the largest city north of Mexico. "At its height, Cahokia had a population in excess of ten thousand, with at least twenty or thirty thousand more in the outlying towns and farming settlements that ranged for fifty miles in every direction" (ibid.: 2). Cahokia became the size of an average ancient Mesopotamian city-state and about the size of early Andean capitals such as Moche and Tiwanaku (ibid.: 26) and was a city larger than London at the time. "It appears likely that many, possibly most, ancient Midwestern, southern, and Plains Indians were in one way or another entangled in a history that began at Cahokia" (ibid.: 38). Cahokia is often considered to

be the headquarters of Mississippian symbolism and ideology, from which this symbolism and ideology radiated outward in all directions (although, ironically, Cahokia did not actually become "Mississippian" until the time of its collapse, ca. 1200 CE [Kehoe 2010, pers. comm.]). The core of the site is now preserved as a state park.

1.3.7 Summary.

In this section, I have provided claims made by North American archaeologists regarding moundbuilding, mound-and-plaza architecture, trade, ceramics, and agriculture in the LMV area. The first earthen mound architecture in the Americas occurred in what is now northeastern Louisiana ca. 3500 BCE. The later Poverty Point settlement in the same region is the first known long-distance trade center in North America, with materials entering it from as far away as modern Florida, the Great Lakes, the Appalachian and the Rocky Mountains. Trade may have traveled such long distances via the multitude of rivers and streams constituting the Mississippi River watershed, and even possible the Gulf of Mexico itself. Ceramics first arrived in the LMV from modern Florida. Another foreign ceramic type arrived at Mobile Bay perhaps from Mesoamerica.

Agriculture, though dating to ca. 2200 BCE on a small garden-plot scale with native cultigens, did not become a major force in the economy until ca. 1200 CE at the time of Mississippian influence. Although maize first entered the Mobile Bay region ca. 1500 BCE, this crop does not hold high prominence in the LMV until the time of Mississippian influence.

1.4 Movement of peoples.

In this section I explore known and probable movements of peoples both within and into the LMV. No discussion of a language area would be complete without knowledge of who came into contact with whom and when, as much as this can be known or inferred. Unfortunately, however, with the possible exceptions of Tunicas, Biloxis, and Ofos, little is known about early movements and migrations of people in the region. We must rely on scanty archaeological and linguistic evidence to determine origins and locations of most LMV groups prior to Spanish and French documentation of the sixteenth century.

We should also, however, heed the migration stories of Native peoples themselves in assessing their possible origins and migrations. Scholars (e.g., Galloway 1995: 329; Swanton 1946: 23) have often minimized or outright dismissed tales of oral history, perceiving such stories as largely irrelevant for serious academic consideration, or, as Deloria puts it, "attacking Indian knowledge of the past as fictional mythology" (Deloria 1997: 9). Native American "[r]eligious ceremonials generally involved the recitation of the origin and migration stories" (ibid.: 37) and, therefore, should not be so readily dismissed by Western scholars and academics. Oral history should be seriously considered, matching it with linguistic and archaeological evidence whenever possible.

I address movements and migrations of Atakapas, Biloxis, Chitimachas, Natchez, Ofos, and Tunicas in alphabetical order (I place Choctaw-Chickasaws under Proto-Muskogean and Biloxis and Ofos under Proto-Siouan).

1.4.1 Atakapas.

There is an Atakapa tradition that places their ancestors in "the mountains of northwest Texas beyond San Antonio" (Swanton 1911: 348, 363), which, if true, would indicate a southeastward migration from there to the modern Texas and Louisiana Gulf coast. Other than this, there are no other known Atakapa migration stories, and it seems they may have been in place along the Gulf coast for a very long time, perhaps millennia.

1.4.2 Chitimachas.

Chitimacha tradition holds that they were originally situated in the region where the Natchez came to be located, presumably near modern Natchez, Mississippi (Swanton 1946: 23), before they migrated southward to their present domain in southern Louisiana. As with the Atakapas, there are no other known migration stories, and it seems that the Chitimachas have also been located in place for perhaps millennia.

1.4.3 Natchez.

As with Atakapas and Chitimachas, there are no known ancient migration stories among the Natchez, except for a passing reference to "evidence that [Natchez] had formerly extended higher up the Mississippi though hardly to the Wabash as they are said to have claimed" (Swanton 1946: 23; Swanton 1911: 182-186). Whether they actually extended that far north or not is open to debate, although, as just seen, Swanton often tends to outright dismiss Native oral history claims. Many Natchez were forced, with the Cherokees and others, to migrate, as part of the 1830s Indian Relocation Act, on the Trail of Tears from the southeastern to the Midwestern part of the continent to Indian Territory, or what is now the state of Oklahoma.

1.4.4 Proto-Muskogeans.

There is a Muskogean "migration legend recounting travel from the west of the Mississippi River together with the Chickasaw and perhaps Chakchiuma…" (Galloway and Kidwell 2004: 511). Native sources repeatedly cite northwestern Mexico, or just generally Mexico, as the origin of this migration, an indigenous claim that has been routinely discounted by scholars, such as Galloway's assertion that such a claim as a Muskogean migration from northwest Mexico is "highly romanticized and indeed fictionalized" (1995: 329), though such a claim certainly does not counter the migration story above of an eastward migration from "west of the Mississippi River," an idea that is apparently more readily embraced. In fact, Haas noted a date supposedly given by one of her indigenous consultants of a Muskogean migration from "Mexico" in the ninth century (Haas, unpublished notes). Regardless of their ultimate western origin, we know that Muskogeans certainly reached east of the Mississippi River where many remain today in modern Mississippi, Louisiana, and Oklahoma.

1.4.5 Proto-Siouans.

A discussion of Biloxi and Ofo movements must begin with the apparent *Urheimat*, or homeland, of Siouan-speaking peoples and the long-distance migrations of Proto-Siouans. There has been a long-standing debate on the exact homeland of Siouan-speaking peoples. Much of the debate has focused on the opposing views of Swanton (1943), a linguist, who posited that the Siouan homeland was likely located in the Ohio Valley prior to ca. 1000 CE, while Griffin (1942), an archaeologist, posited the Allegheny Piedmont region of modern-day Virginia and the Carolinas as the Siouan homeland. I suspect that Swanton's position is closer to the mark. Part of

Griffin's argument against an Ohio Valley Siouan *Urheimat* is his contention that the "historic evidence available on the Tutelo indicate that they were in the Piedmont area at the time of the first contacts and does not indicate that they had ever been in the Ohio Valley" (1942: 279). However, linguistic data (see Chapter 2) indicates that the Tutelos indeed may have inhabited the Ohio Valley.

Much of Swanton's (1943) evidence for an Ohio Valley origin of Siouan peoples comes, rightfully, from the oral stories of Siouan speakers themselves. Swanton specifically states, "[a]ccording to the traditions of western Siouan tribes, they, or at least some of them, formerly lived toward the east, the Ohio river being in some cases specifically mentioned" (Swanton 1943: 49). He further states that "all of the [Siouan] traditions speak of a movement from the east to the west covering a long period of time... [Their homeland] seems to have been situated ... among the Appalachian mountains" (ibid.). The Omahas, in particular, "remember a tradition that their ancestors once dwelt at the place where Saint Louis now stands" (ibid.: 50). This would place the Omahas, as well as possibly other Siouan groups, in the vicinity of the large Native American city of Cahokia (see 1.3.6), a city larger than London at the time and on par with the ancient cities of Mesopotamia (Pauketat 2009), occupying the American Bottom region in the vicinity of modern St. Louis. Siouan Osage and Omaha oral narratives of the priestly class have been linked to several features at Cahokia (Kehoe 2007). This supposed Siouan westward migration from east to west is also supported by what the "Berthold Indians" (likely Hidatsas or Mandans) of Fort Berthold, North Dakota, reported to Dr. Washington Matthews of the U.S. Army: "Long ago the Sioux were all to the east, and none to the West and South, as they now are" (Riggs 2004 [1893]: 181).

> In those times the western plains must have been very sparsely peopled and hostile tribes in comparison with the present, for the old men now living, and children of men of the past generation, say that they traveled to the southwest … to a country where the prairie ceased, and were gone from their village twenty-one moons. Others went to the north to a country where the summer was but three moons long. (Riggs 2004 [1893]: 181-182)

Unlike the Choctaws and Chickasaws (and Chakchiumas), who may have migrated together toward the east into what is now Mississippi and Alabama, Biloxis and Ofos appear to have had divergent migration paths and histories and are treated separately below.

1.4.5.1 Biloxis.

The first certain reference to the Biloxis is 1699 when they met the French explorer Iberville near their settlement on the Pascagoula River near the Gulf of Mexico, although they may have encountered Spaniards slightly earlier (ca. 1693) under the name Estanani (Istanane) (Swanton 1946: 96). After this initial meeting with Europeans, Biloxis began a flurry of movements around the LMV. They moved ca. 1702 to "a small bayou between New Orleans and Lake Pontchartrain" (ibid.: 97), then ca. 1722 they settled on the Pearl River on a site once occupied by the Acolapissas (Colapissas) (ibid.). Between then and 1730 "they seem to have drifted back to the neighborhood of the Pascagoula River" where they stayed until ca. 1763 when they moved west of the Mississippi River, settling near the mouth of the Red River.

After this time, many Biloxis fused with the Tunicas and Choctaws on the Red River, though a "large body" of Biloxis "went to Texas and established themselves on a stream in Angelina County, still called Biloxi Bayou" (ibid.).

Prior to this time, from ca. 1693 to the late eighteenth century, when these movements were documented by Europeans, it can only be conjectured that the Proto-Biloxis, like other Proto-Siouans, were "probably formerly residents of the Ohio Valley" (Swanton 1946: 96). A French map of 1733 "shows a Biloxi site on Alabama River at the mouth of Bear Creek" (ibid.) in modern Alabama. It is unknown whether this may represent a site established during a Biloxi migration southward toward the Gulf from the Cumberland Plateau or Ohio Valley, but it remains a possibility, although it could also be a group that splintered off from the main body of Biloxis on the Pascagoula.

1.4.5.2 Ofos.

As stated above, Ofos, also known as Ofogoulas and Mosopeleas, are said to have been driven from the Ohio Valley by the Haudenosaunees (Iroquois) and, in 1673, the French explorer Marquette found them living "on the east bank of the Mississippi below the mouth of the Ohio" (Swanton 1946: 165-66). According to French documents, shortly after the European invasion the Mosopeleas moved from "some point on the upper Ohio River to the Cumberland, and thence successively to Arkansas River, to the Taensa at Lake St. Joseph, La., and finally to the Yazoo, where they were known as Ofogoula (Ofo) and established their settlements near the Tunica on the Yazoo [at Haynes Bluff]" (ibid.: 31). Remaining Ofos were later assimilated into the Tunica-Biloxi Tribe up the Red River in what is now Marksville, Louisiana.

a. b.

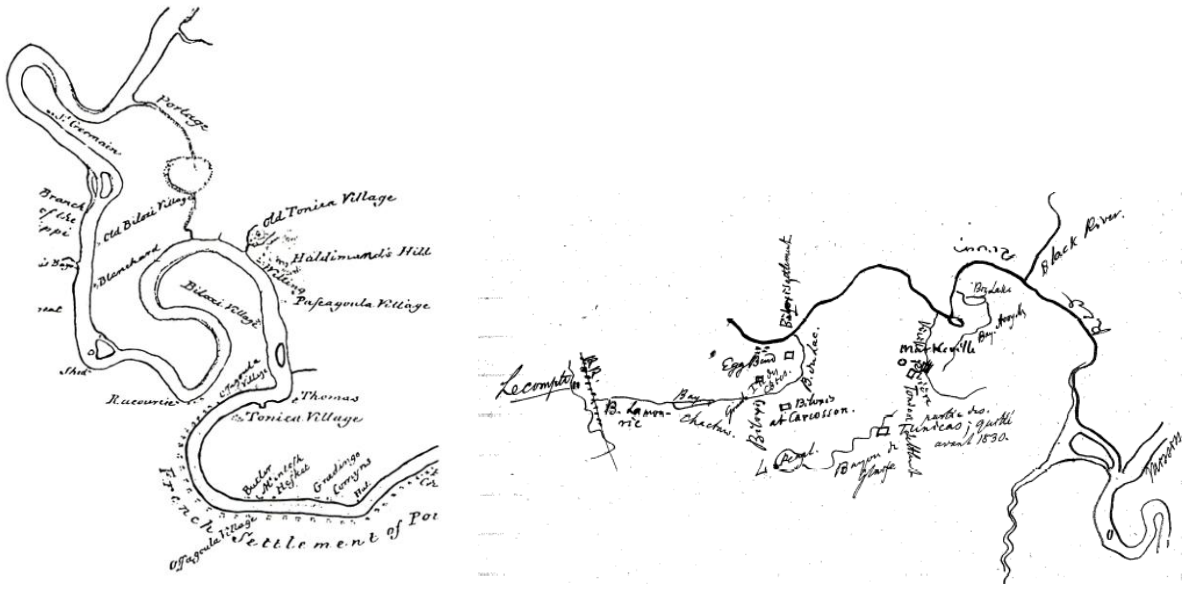


FIG. 1.11: a: Section of a map made by George Gauld, British Admiralty Surveyor, possibly dated to 1774, showing Portage de la Croix region of Mississippi River where Tunicas, Biloxis, and Ofos, among others, came to settle ca. late seventeenth century (from Brain 1988: 40, Fig. 33); b: Hand-drawn map by Albert Gatschet (1886, unpublished notes) showing location of Biloxi and Choctaw settlements near Marksville, Louisiana on the Red River just west of the Mississippi (after 1776).

1.4.6 Tunicas.

As stated previously, the Tunicas inhabited the "Quizquiz-Tunica Oldfields" (Brain 1988: 25) near the Arkansas River before they moved southward down the Mississippi River to a point on the lower Yazoo River near the mouth of the Mississippi, where the first recorded French visit to the Tunicas occurred in 1698 (ibid.). There, they settled at a mound settlement in modern Arkansas, now designated by archaeologists as Haynes Bluff (Brain 1988) (see Fig. 1.5). Other groups joined them at this site, including the Siouan Ofos. Then, apparently fearing a Chickasaw raid, the Tunicas and their allies moved downriver from the Yazoo Basin ca. 1706 (ibid.: 25) to the confluence of the Red and Mississippi Rivers, where a French map, completed ca. 1774, records them (along with Biloxis, Ofos, and Pascagoulas, among others), resettled at what was

formerly a Houma village. This region was named Portage de la Croix by Iberville, which to this day is known as Tunica Hills (ibid.: 31). After a Natchez raid in 1731, in which a number of Tunicas were killed, Tunica survivors relocated to a small tributary on the southern edge of the Tunica Hills still known as Tunica Bayou (ibid.: 33). Following raids, Tunicas moved from the Mississippi River to Mobile but were then granted permission by the French Louisiana governor to resettle on the Mississippi at Bayou Lafourche and then nearby Pointe Coupée. Tunicas then appear to have moved ca. 1786-88 up the Red River to reestablish themselves at current Marksville, Louisiana (ibid.: 42-44).

Nothing official is known of the Proto-Tunicas prior to their supposed encounter with the de Soto expedition in the early sixteenth century. "Unfortunately, the oral traditions of the Tunica are of little help in pinpointing their origins. They offer only a mythical account of emergence from a mountain, near which they settled" (Haas 1950a: 19, 141; Brain 1988: 22) (note similarity to Choctaw Nanih Waiya origin story in Appendix). Brain speculates that the mountain reference could refer to the Ouachita Mountains "for there is a possible Tunican connection with that topography" (Brain 1988: 22). However, linguistic evidence may provide another clue to this supposed mountain habitat: the Rocky Mountains or mountains farther west. Tunicas have an analyzable native term for 'moose' (*yámuhtitʔe*, from *yá* 'deer' + *muhti* 'hairy' + *tʔe* 'big', thus 'great hairy deer'). While moose are generally animals of the far north, moose did migrate down the Rocky Mountain range as far south as modern Colorado. Similarly, Tunicas share a word for 'wild goose' (*lálahki*)[9] with western and southwestern North American

[9] Other languages of the LMV, such as Natchez (*la·lak*) and Choctaw (*shilaklak*), share similar terms, possibly due to onomatopoeia. But, "some resemblances are remarkably precise even if one allows for onomatopoeia… Words for 'goose' from the Southeast to California are a case in point" (Haas 1969b: 82). It is possible that the 'goose' terms in Natchez and Choctaw may have been borrowed from Tunica. "Many other bird names show equally uneven but widespread distribution. They deserve further study" (ibid.).

indigenous languages, again perhaps suggesting origins to the west. Since they were first documented in the Arkansas River region (‘the Quizquiz province’), they may have migrated from farther west down the Arkansas River, which has its headwaters in the Rockies.

1.4.7 Summary.

In this section, we have explored the limited data on the movements and migrations of the primary LMV groups covered in this dissertation. Due to the lack of written documentation prior to the time of the European invasion, early origin and migration stories are from the domain of oral histories, which have often been minimized or dismissed as unacceptable evidence to many scholars and academics. As far as we can tell, Atakapas, Chitimachas, and Natchez may have inhabited the LMV for long periods of time, perhaps even several millennia, where they were first discovered by Europeans. Biloxis, Choctaw-Chickasaws, Ofos, and Tunicas, on the other hand, appear to have undertaken long-distance migrations at various times, and, in the case of all but the Choctaw-Chickasaws, evince multiple movements within the LMV primarily due to the onslaught of European invaders and the harsh consequences thereof, including increasing hostilities, violence, and slave raids.

In the next section we will examine how these movements and interactions may have contributed to the LMV being a Sprachbund.

1.5 Language contact.

I hypothesize that the Lower Mississippi Valley (LMV) is a language area, or Sprachbund, including Atakapa, Biloxi, Choctaw-Chickasaw, Chitimacha, Mobilian Trade, Natchez, Ofo, and Tunica languages. Other language areas that have been analyzed include the

Balkans (southeastern Europe), South Asia (India), the Amazon region, northeastern Africa (Ethiopia), Arnhem Land in Australia, Mesoamerica (central and southern Mexico), and the Pacific Northwest of the U.S. (California to Alaska).

In the following section I will discuss language contact in general and will examine the Balkan, South Asian, and the Northwest Coast Sprachbünde as examples of well analyzed and documented language areas, the latter being particularly relevant to a discussion of the LMV since it is another Native American language area in North America with similar characteristics to the potential LMV Sprachbund. I will then discuss the hypothesized LMV Sprachbund, the subject of this dissertation.

1.5.1 Language origins.

Language areas arise when languages, which may or may not be 'genetically' related (see below), come into close contact through such things as trade, alliance, intermarriage, and intergroup gatherings, thereby encouraging "diffusion of linguistic features across geographically adjacent languages" (Winford 2003: 70). This linguistic diffusion may give indirect evidence about socioeconomic and sociopolitical ties and relationships. As discussed before, the LMV was a major hub of trade and contact between many different ethnolinguistic groups, enabling contact among speakers of various languages.

1.5.2 'Genetic' (internal) vs. contact (external) language origins.

Linguists have long used the *Stammbaum* or 'family tree' model of linguistic ancestral descent, which is usually described with a biological metaphor: the 'genetic' origins of languages, which insists on a "single-parent source and its belief that practically all language

change resulted from internal causes" (Winford 2003: 7) rather than from external causes through language contact, where similarities arise not through genetic affiliation but through close cultural and linguistic contact.

Language was first described in the nineteenth century in terms of a living biological organism by the German linguist August Schleicher (1850), an approach that he used to describe the languages of Europe. A "genetic relationship entails systematic correspondences in all parts of the language [to its living linguistic relatives as well as to possibly extinct ancestral languages] because that is what results from normal transmission: what is transmitted is an entire language—that is, a complex set of interrelated lexical, phonological, morphosyntactic, and semantic structures" (Thomason and Kaufman 1988: 9, 11).

This genetic model of relations between modern languages allows scholars to reconstruct a hypothetical parent language, or protolanguage, from which modern languages descended. For example, the reconstructed Proto-Indo-European term for 'sun' is *$*seh_aul$*, which in turn supposedly led to English *sun*, Latin *sōl*, Greek *hēélios*, and Sanskrit *svàr* (Mallory and Adams 2006: 128); similarly, Proto-Siouan **wiirą* 'sun/orb' led to Lakota *wi*, Hochunk *wíi*, Omaha *mi*, Tutelo *mi*, Biloxi *ina*, and Ofo *ila* (Carter et al. 2006: 465-466). Linguistic reconstruction is aided by study of attested earlier forms of modern languages, such as Latin for the modern Romance languages. Since entire books and numerous documents have been written in Latin for millennia, it is an easy matter to track the descent from parent (Latin) to daughter (French, Spanish, Italian, Portuguese, Catalan, Rumanian) languages. In the case of most of the languages of Native North America, a lack of written documents on antecedent languages necessitates the hypothetical reconstruction of both antecedent languages and protolanguages, such as Proto-Siouan, from which the modern Siouan languages (such as Lakota, Omaha, and Biloxi) are thought to descend.

The Americanist Franz Boas was among the first to criticize the idea of "genetic" relationships in language.[10]

Certain fundamental theoretical assumptions underlie the concept of genetic or internal relationship which are (from Thomason and Kaufman 1988: 9-10):

(1) all languages change through time, through drift, dialect interaction, and foreign interaction.

(2) change can occur at any and all levels of the linguistic system.

(3) a language is passed on from parent to child and/or via peer group, with relatively small degrees of change over the short run.

(4) the label "genetic relationship" does not properly apply when transmission is imperfect, i.e., when there is sufficient interaction to stop the normal generational and peer transmission patterns.

The issue of how contact affects 'genetic' affiliation is still highly controversial today (Winford 2003: 7), and, in fact, the entire concept of genetic linguistics has been brought into question by some linguists, such as Trubetzkoy and Boas. The Russian linguist Nikolai Trubetzkoy was among the first to suggest that, rather than examining *Stammbaum* linguistics, which he found to be inconsequential, linguists should investigate how languages developed historically through coming into contact with each other. Trubetzkoy (1923) wrote, in reference to the idea of an Indo-European (IE) parent language, or protolanguage:

[10] Boas' aversion to the genetic origins of language stemmed from his aversion to evolutionary theories current among anthropologists of the 19th and early 20th centuries. These ideologically posited a linear evolutionary model of linguistic development from the most 'primitive' languages to the most 'civilized.' The latter, of course, were judged to be the IE languages since Europe was considered to be at the "center of civilization" and thus IE languages, particularly Latin, were the civilized linguistic standard against which all other languages were to be compared. From this extremely biased Eurocentric perspective, the predominantly polysynthetic and incorporating Native American languages were judged to reflect the "psychological unity of the aboriginal mind" (Darnell and Sherzer 1971: 21), a concept against which Boas fought.

> There is really no compelling reason to adopt [the idea] of a unified Indo-European parent language from which the various branches of Indo-European languages were derived. It is just as easy to conceive [of the idea] that the ancestors of the Indo-European language branches were originally dissimilar but were standardized by [linguistic and cultural] contact and mutual influence through *Lehnverkehr* [so that the languages] gradually approached each other but without ever becoming identical to each other (Trubetzkoy 1923, my translation).

Trubetzkoy's Russian term for this phenomenon, языкий союз (*jazikij sojuz*) "language union," was the source of the German term *Sprachbund*. Weinreich, however, argues against the use of the term Sprachbund, declaring that "it implies a unit, as if a language either was or was not a member of a given Sprachbund" (Weinreich 1953: 378).

Language shift in a Sprachbund typically involves different levels (strata) of convergence. People coming into contact, such as those in the LMV, with people speaking other languages, in particular with those who become bilingual, often copy[11] sounds, lexemes, and elements of morphosyntax from the other languages involved. Such copying often, but not always, represents the borrowing of an idea or cultural element previously unknown to one or the other, such as various types of food or drink. In other words, there is diffusion of phonemes, lexemes, pattern transfers (calques), and morphosyntax to various degrees. Higher degrees of diffusion indicate longer-term and more intensive language contact. Diffusion of various language traits is uneven, with some languages receiving certain traits through diffusion while others do not. Divergence indicates differentiation of certain traits within a contact area that leads to an accentuation of differences between self and other (Gallois et al. 2005), agreeing with

[11] In this dissertation I use "copy" and "borrow" interchangeably primarily to avoid monotony, since the term "borrow" is well entrenched in language contact literature. The term "copy" may seem more logical than "borrow," since borrowing implies a loan, but, indeed, nothing is given back to the donor language.

Matras' (2009) theory that maintaining a certain amount of diversity and differentiation among contact languages is also important. Intensive trade and migration are major factors in language contact in the LMV, involving the convergence of six different language families, including four isolates.

We now know that inflectional morphology is not stable enough to be resistant to restructuring or replacement through external interference (Thomason and Kaufman 1988: 6), though it was once postulated that a morphological feature is "so highly structured that it resists both internally- and externally-motivated changes" (ibid.: 5-6) and could only be due to genetic linguistic origins. An excellent example of the copying of morphological features is presented in Cappadocian Greek spoken in Turkey. Cappadocian Greek adopted "partly agglutinative patterns of [Turkish] noun and verb inflection—a morphological organization that is startling in an Indo-European language" (Thomason and Kaufman 1988: 219). An example of this is:

	Turkish *qïz* 'girl'		Cap. Greek *néka* 'woman, wife'[12]	
sg. nom.	qïz	girl	néka	wife
gen.	qïz-ïn	girl's	néka-yu	wife's
pl. nom.	qïz-lar	girls	nék-es	wives
gen.	qïz-lar-ï	girls'	nék-ez-yu	wives'

(from Thomason and Kaufman 1988: 219)

An example from the LMV is the possible sharing of a locative suffix in Atakapa and Chitimacha, both sharing the form -(*n*)*ki*(*n*), as in: Atakapa *ne-kin* 'on the ground' and Chitimacha *hana-nki* 'in the house.' Speaker-centered pragmatic features such as evidentiality and topicalization markers are also well-attested in regions of intensive language contact (Matras 2009), such as the Balkans and South Asia as well as in the LMV.

[12] The form *néka* is from standard Greek γιναίκα, *yineka* 'woman.'

Sprachbünde have also been referred to as "residual zones" (Nichols 1992: 13), which probably includes "the southeastern United States" (ibid.: 21). A residual zone is often "located at the periphery of a spread zone[13], where it remains largely independent of the political and economic hegemony of the spread zone while maintaining cultural and economic links with it" (ibid.: 21-22).

1.5.3 Definition of Sprachbund.

I define a language area as follows: (1) at least three languages demonstrating evidence of contact; (2) genealogical diversity among languages forming part of a linguistic area (see, for example, Emeneau 1956; Schaller 1975; Campbell 1994, Cristofaro 2000); (3) similarities should not be restricted to one level of grammar/lexicon alone (Schaller 1975); (4) there should be a solid extra-linguistic, i.e., socio-historical explanation for the emergence of similarities (see, for example, Sherzer 1976; Haarmann 1978; Sarhimaa 1991; Cristofaro 2000); and (5) evidence of diversity and differentiation of contact languages (Matras 2009).

There is still disagreement on the definition of the term LINGUISTIC AREA: "the search for clearcut definitions has been largely futile and will probably never come to a really satisfying conclusion" (Stolz 2002: 260). This is partly due not only to the fact that, to use a notorious quote, "Sprachbund situations are notoriously messy" (Thomason and Kaufman 1988: 95), but also due to the variation in terminology used by the many scholars of language areas. Scholars also disagree on the basic features or traits that a Sprachbund should include. For example, many scholars cite the sharing of phonological features as a paramount trait of a language area, yet this diagnostic trait does not occur in the most famous and well analyzed language area of all: the

[13] A "spread zone" is "a center of cultural, political, and/or economic influence" (Nichols 1992: 17). The Adena, Hopewell, and Mississippian Cultures could be considered cultural and economic spread zones in North America.

Balkans (see 1.5.4.1). “Specialists with a background in quantitative linguistics have demonstrated convincingly that ... there is simply no way to identify a universally valid statistical minimum of similarities necessary for the constitution of a linguistic area except through the absolutely arbitrary decisions of the linguists themselves” (Stolz 2002: 262). Further, “[a]s soon as we investigate the areal distribution of features outside the Old World, things become more difficult because of the lack of reliable diachronic data and documentation” (ibid.: 272).

1.5.4 Well known Sprachbünde.

In this section I will expound on the Balkans, South Asia, and the Pacific Northwest of the U.S. as representatives of well accepted and well analyzed language areas. Then I will expound on the LMV as a Sprachbund having much in common with these.

1.5.4.1 The Balkan Sprachbund.

The Balkan region is currently the most famous and best researched Sprachbund. This language area is situated in southeastern Europe and includes several widely diverging Indo-European language subgroups (Romance, Slavic, Albanian, Greek, Romani) and one non-Indo-European language (Turkish) that came into close contact. The Balkan Sprachbund arose during the Early Middle Ages (ca. 400 CE) and especially developed during Turkish rule under the Ottoman Empire (ca. 1300 CE). Languages of the Balkan Sprachbund exhibit extensive structural similarities.

Most scholars agree on the existence of the following grammatical features in the Balkan Sprachbund:

1. prepositional cases;

2. postpositional definite articles (except in Greek and Turkish);
3. merger of dative and genitive cases;
4. merger of locative and directional markers;
5. vocative case marker;
6. pronominal clitic doubling of objects;
7. loss of the infinitive and its substitution by subjunctive clauses (not in Turkish);
8. analytic expression of futurity with a "will" auxiliary;
9. analytic perfect with a "have" auxiliary (not in Turkish);
10. evidential (in Turkish, Bulgarian, Albanian).

Turkish, the single non-IE language to participate in the Balkan Sprachbund, had little grammatical influence in the region, but one important feature of Turkic languages does appear in the Balkans: evidentials. Evidentiality marking fulfills the pragmatic desire or need of a speaker to express the veracity of a comment or to express whether a particular event was experienced firsthand or not. While in English we can only express this idea optionally and periphrastically, such as via our "they said..." or "I was told that...," in Turkic and many other languages a speaker is required to state, by means of affixes or particles, the source of knowledge of a particular utterance or to give the speaker's appraisal of the veracity or likelihood of a particular situation. Evidential marking also occurs in the LMV and Pacific Northwest Sprachbünde (see 1.5.4.3), as it does in other parts of Native America.

1.5.4.2 The South Asia Sprachbund.

In this region dominated by India, languages of three different language families converge: Dravidian, Indo-Aryan, and Munda. Scholars agree on the following areal traits:

1. retroflex stops;
2. absence of prefixation;
3. morphological causatives;
4. conjunctive participle;
5. dative-subject construction;
6. absence of the verb ‘have’;
7. subject-object-verb word order.

(Masica 1976)

The South Asia language area provides good examples of how a language area can be defined by the *absence* of features as well as by the possession thereof. As listed above, the absence of prefixation and of the verb ‘have’ are areal features.

The core of the South Asia Sprachbund is central and southern India, but certain features of the area spread well to the north and northeast into the so-called Altaic languages, including Turkic and Uralic. Certain of the South Asia traits are also found in Russian and Chinese, and even into northeastern Africa, specifically Ethiopia. While the latter may seem strange, it is an example of how a language area can spread not only via land but also by water, in this case the Arabian Sea, which is seen to connect rather than hinder. (A similar situation may have occurred in the LMV through possible maritime contact; see Chapters 4 and 7).

1.5.4.3 The Pacific Northwest Sprachbund.

The broad Pacific Northwest Sprachbund stretches from northern California to southern Alaska and as far eastward as the Rocky Mountains. This Sprachbund includes Tlingit, Eyak, regional Athabaskan languages, Haida, Tsimshian, Wakashan, Chimakuan, Salishan, Alsea,

Coosan (Coos), Kalapuya, Takelma, and Lower Chinook. This group of languages has a particularly elaborate system of consonants, including a series of glottalized stops and affricates, labiovelars, multiple laterals, and uvular stops in contrast to velars (Campbell 2006: 455). There are typically few vowels, only three (*i*, *a*, *o* or *i*, *a*, *u*) in several languages, four in others (ibid.). Areal features include:

1. extensive use of suffixes;
2. near absence of prefixes;
3. reduplication;
4. numeral classifiers;
5. alienable/inalienable possession;
6. evidential markers in the verb;
7. verbal locative and directional markers;
8. masculine and feminine gender (shown in demonstratives and articles);
9. visibility and invisibility opposition in demonstratives.

(Campbell 2006: 455)

Besides having extensive use of suffixes, reduplication, alienable/inalienable possession, and evidentiality in common with the LMV, another common development between the Pacific Northwest and the LMV Sprachbünde is the development of pidgins that came to serve as *lingua franca*s in the regions, Chinook Jargon in the former and Mobilian Trade Language (MTL) (see 1.3.3.5) in the latter. Trade languages, such as Chinook Jargon and MTL, are types of pidgins that often emerge among speaker populations of more or less equal status (Thomason and Kaufman 1988: 174) that come together for the primary purpose of commerce and trade.

Chinook Jargon was largely based on Chinook, Nootka, and perhaps Chehalis (Thomason and Kaufman 1988: 259). As with MTL, it is controversial whether or not Chinook Jargon existed before European colonization. And, again as with MTL, there is no doubt that indigenous contacts were frequent and regular before the advent of Europeans, and that the structures of these pidgins do not reflect any participation by Europeans in their development (ibid.: 257).

1.5.4.4 The LMV Sprachbund.

The proposed LMV Sprachbund displays many of the attributes typical of language areas, including the convergence of language features, even though the languages may be from several unrelated language families or isolates. As a Sprachbund, the LMV likely displays as much convergence as other well-known language areas; nearly all of the LMV's languages share features, both lexical and morphosyntactic, from multiple unrelated language families, namely Siouan, Muskogean, Tunican, Atakapan, Chitimachan, and Natchesan.

Features that define the LMV as a Sprachbund include:

1. labiodental /f/ phoneme;
2. retroflex /ʂ/ phoneme;
3. lateral fricative /ɬ/ phoneme;
4. predominant SOV basic word order;
5. positional auxiliaries used as continuative aspectual markers;
6. quinary number systems;
7. evidentiality marking;
8. emphatic marking;

9. nominal compounding using prefixed ‘thing’ or ‘something’ as a nominalization and valence-reducing strategy (in Atakapa, Natchez, and Muskogean); and
10. sharing of several semantic calques.

As already discussed, a further Sprachbund attribute of the LMV, as with the Pacific Northwest, is its development of a pidgin language: the Mobilian Trade Language (MTL) (see 1.3.3.5), or Mobilian Jargon.

1.5.5 Summary.

I began this section with a discussion of the still looming controversy over whether languages should be considered as having arisen through a single-parent origin with internal changes being the only ones that matter while external changes, or changes through contact with other languages, are considered largely irrelevant (the *Stammbaum* or genetic origin hypothesis). It is the goal of this dissertation, as will be outlined in section 1.7, to examine the linguistic evidence of external or contact-related change to determine if the LMV can be considered a valid Sprachbund rather than the region’s languages being genetically related. Also in this section we have briefly examined other well-known Sprachbünde (the Balkans, South Asia, and the Pacific Northwest) as a means of comparison for this discussion.

In the next section, I will elaborate further on the objectives of this dissertation.

1.6 Objectives.

The primary objective of this dissertation is to determine if the Lower Mississippi Valley (LMV) is a Sprachbund. It is possible that the LMV forms part of a broader Sprachbund (the Gulf-Atlantic, or Southeastern, Sprachbund) that encompasses the entire Gulf coast over to the

Atlantic coast and up into the mid-Atlantic and Appalachian Piedmont regions as far as modern Virginia, as has been previously described in the literature. However, the focus of this dissertation is much smaller, focusing only on the LMV micro-area as outlined in section 1.2, in order to explore this micro-Sprachbund in more detail than would be possible in covering a broader area.

1.6.1 Research questions.

This project focuses on language contact in the LMV from ca. 500-1700 CE, largely before the time of the European invasion. I will address the following research questions:

(1) What linguistic evidence is there to demonstrate that the LMV is a Sprachbund?

(2) What does linguistic and oral history evidence reveal about possible movements and migrations within and into the LMV?

(3) If the LMV is a valid Sprachbund, how does it compare feature-wise to other well known Sprachbünde, e.g., the Balkans, South Asia, the Pacific Northwest?

1.6.2 Hypothesis.

Based on linguistic evidence, I hypothesize that the LMV is a Sprachbund on par with other Sprachbünde of the world, and that, although it has been previously postulated that the phonetic, grammatical, and lexical similarities among the region's languages may be due to genetic origin, its similarities are instead the result of intensive contact in the area. The research in this dissertation is an attempt to understand the degree of contact among the peoples of the LMV, and how their languages may have been shaped by this contact.

1.7 Summary of Chapter 1.

We have seen that the geography and environment of the Lower Mississippi Valley (LMV) was conducive to the development and maintenance of a Sprachbund. The myriad waterways of the region, including one of the world's longest rivers, provided excellent communication and trade routes while, at the same time, allowed enough anonymity to provide a degree of autonomy and maintenance of separate cultures, a situation ideally suited to a Sprachbund (Matras 2009).

Compared to some other Spachbünde, e.g., South Asia and the Pacific Northwest, briefly covered in this chapter, the LMV is a relatively small region, perhaps a micro-area of a larger Sprachbund. The LMV involves only eight languages, yet these eight languages, including one pidgin, represent six different language families, four of which became isolates.

It has been suggested that Proto-Muskogeans (ancestors of Choctaws and Chickasaws) may have migrated from northern Mexico while Proto-Siouans (ancestors of Biloxis and Ofos) likely migrated from the Appalachian Mountains region. Whence came Atakapas, Chitimachas, Natchez, and Tunicas is largely unknown, although new language evidence suggests that Proto-Chitimachas may also have migrated from Mexico (Brown et al.: 2011), and Proto-Tunicas may have migrated from the Rocky Mountains or even from farther west. The LMV may have been a "residual zone" (Nichols 1992) in which several languages from different families were somehow propelled into this peripheral area (LMV) where an amount of anonymity from a spreading economic and political culture farther north (perhaps the Hopewell) was possible.

In any case, the peoples who settled in the LMV came into contact with each other through trade, intergroup gathering and feasting, intergroup marriage, and, at least on occasion,

through war. Such intimate interactions resulted in bilingualism and multilingualism, which in turn led to aspects of their languages sharing certain features.

I hypothesize that such shared features and similarities in phonetics and morphosyntax between these languages are the result of language contact from the formation of a Sprachbund rather than from linguistic genetic origins as has been postulated previously. In this dissertation, I will systematically examine particular features to either prove or disprove this hypothesis.

The rest of this dissertation contains the following chapters, in order: Chapter 2, Overview of the Languages; Chapter 3, Methodology; Chapter 4, Phonetic and Phonological Features; Chapter 5, Morphological Features; Chapter 6, Lexical and Calques; Chapter 7, Endings and Beginnings.

Chapter 2

Overview of the Languages

2.0 Introduction.

The languages of the Lower Mississippi Valley (LMV) here discussed are Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Mobilian Trade Language (MTL), Natchez, Ofo, and Tunica. Biloxi and Ofo are Siouan, and Choctaw-Chickasaw are Muskogean (see Figure 2.1).

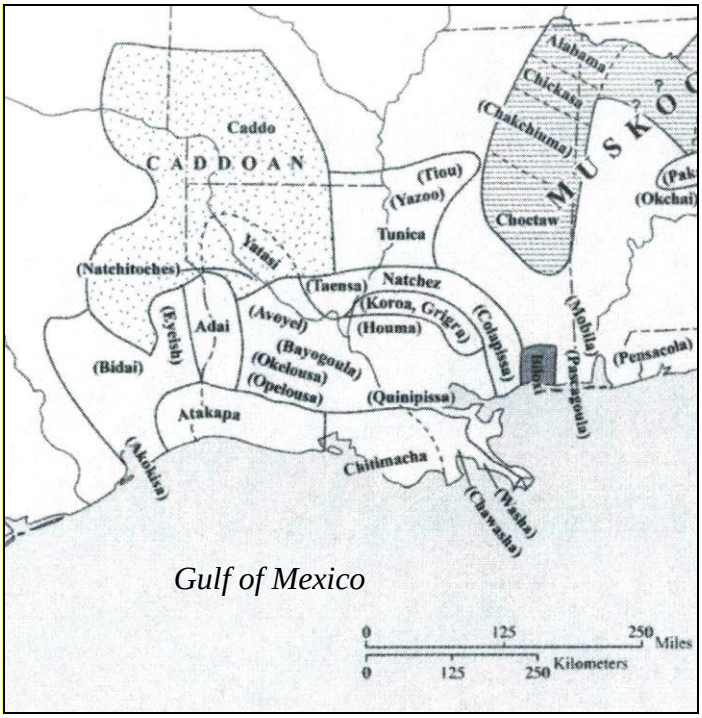


FIG. 2.1: Map of LMV languages (at their earliest documented locations) discussed in this dissertation among others (adapted from a larger map of Southeastern U.S. languages by Goddard, in Fogelson and Sturtevant 2004: 69).

The LMV languages represent different linguistic genetic families: Atakapan, Chitimachan, Muskogean, Natchesan, Siouan, and Tunican. Choctaw and Chickasaw are Muskogean while Biloxi and Ofo are Siouan. The others are isolates with no known current

linguistic relatives, although there is a possibility that Chitimacha may be related to Proto-Totozoquean (Brown et al: 2011). MTL, or Mobilian Jargon, is a pidgin, one of several that occurred in North America, e.g., Chinook Jargon in the Northwest, Delaware Jargon on the East Coast, used as a *lingua franca* in intensive trade and contact in the Mobile Bay region and throughout much of the LMV and Southeast U.S.

All of the languages in this region, with the exception of MTL, are agglutinative in nature, ranging from mildly agglutinative (Siouan) to strongly agglutinative (Natchez). In all of the languages, with the exception of MTL, verbs are the most highly inflected category while nouns are relatively uninflected. Tunica is unique in the region in having all nouns, regardless of animacy, marked with masculine or feminine gender. Nasality is prominent in Siouan and Western Muskogean. Atakapa is unique in having object pronouns prefixed to verbs while subject pronouns are suffixed. Biloxi and Choctaw-Chickasaw show heavily developed systems of subject reference tracking while Natchez shows topic tracking. All of the languages show various degrees of discourse or pragmatic marking, such as focus-marking.

Two languages in the LMV have been noted to have retroflex sibilants: Tunica and Natchez (Rankin 1988). This retroflexion may have spread from the greater Gulf-Atlantic Sprachbund, since such retroflexion also occurs in the eastern Muskogean languages Muskogee, Hitchiti, and Alabama, as well as in peripheral Siouan Quapaw (ibid.). This retroflexion may have entered the Gulf-Atlantic and LMV language areas via Mesoamerican contact through Mobile Bay, since Totonac and some Mayan languages (though not those on the Gulf) also have retroflex sibilants. Muskogean languages, both Western and Eastern, have three-vowel systems (i a u), as does peripheral Caddoan (i a o). Mobilian Trade Language (MTL) also has a three-vowel system (e a o) though with considerable variance in phonetic realizations (Drechsel 1996: 261).

Other languages in the LMV have five vowel systems (i e a o u). Nasalized vowels occur in Atakapa, Biloxi, Choctaw-Chickasaw, and Ofo; MTL has "nondistinctive nasalized variation" (Drechsel 1996: 257). Nasal vowels also occur in Natchez, but only in phrase-final position. The phoneme /f/ is not common in North America, but it occurs in the LMV and Gulf-Atlantic region among all Muskogean languages, as a reflex of Proto-Muskogean *x^w, and in one Siouan language, Ofo, possibly through diffusion from Muskogean; Atakapa also has the phoneme /f/ but is rare. The voiceless lateral fricative /ɬ/ occurs in the Muskogean languages, including in MTL, and in Atakapa. The phoneme /x/ is found only in the Siouan languages Biloxi and Ofo, and in Atakapa. The phoneme /k^w/ is found only in Natchez. The phoneme /tl/ occurs only in Atakapa.

Vowel harmony, also a feature of many Mesoamerican languages, including Totonac, is found in Natchez and Muskogean. Natchez has pitch accent with four pitch contours: high, mid, rising, and falling (Kimball 2005: 396). Switch reference is found in Biloxi and in Choctaw-Chickasaw. All LMV languages share a quinary (base 5) number system, as opposed to, for example, the vigesimal (base 20) system typical of Mesoamerican and the Coahuiltecan (Rio Grande Valley region) languages.Around the periphery of the LMV are Algonquian Shawnee (sjw) and Siouan Quapaw (qua) to the north and the isolate Euchee (Yuchi, yuc) to the northeast. Toward the west and southwest are the isolates Karankawa (no ISO code) and Tonkawa (tqw), and the languages of the Rio Grande Valley region: Coahuilteco (no ISO code), Cotoname (no ISO code), and Comecrudo (no ISO code). To the south of this region, in north-central Mexico, there is Huastec (hva), a Mayan language long separated from its linguistic relatives farther south. Linguistic evidence (Chapter 7) demonstrates a continuum of language contact, and thus

trade, from Chitimacha and Atakapa in the LMV right down along the Texas coast into north-central Mexico.

Haas (1958) proposed a tenuous genetic relationship between Natchez, Tunica, Atakapa, Chitimacha, Muskogean (what she collectively called the "Gulf" languages) and Siouan, saying that Siouan languages were "at least distantly related to the Gulf languages" but that she was "not yet ready to publish the evidence for this statement" (1958: 233-34). She conceded that there was a lack of material on Proto-Siouan, and she did not pursue this idea any further. The modern consensus by most linguists, including me, is that such a relationship is not adequately supported and cannot be verified. Chafe (1976) proposed a genetic link between the Siouan, Caddoan, and Iroquoian language families.

Haas (1958) presented a somewhat stronger case for a possible genetic affiliation between the Gulf languages and Algonquian, based primarily on phonetic and phonological evidence. Much of this evidence is less than convincing, however. For example, she proposed a relationship between the Proto-Central-Algonquian (PCA) **kwan-* 'swallow' and Proto-Muskogean (PM) **kʷalak-*, Natchez *-akun-*, Tunica *kɔra*, Chitimacha *kaač–t–*, and Atakapa *kul*, which seem a bit of a stretch. She does demonstrate a few more convincing ones, such as PCA **pak-* 'beat', Natchez *paak-*, Tunica *pɛka*, and Atakapa *pak*. This latter is admittedly more convincing, but the similarities are more likely due to diffusion, or possibly even to onomatopoeia, than to a genetic relationship. The Biloxi term *pakpakhayi*, referring to a type of woodpecker, a bird that beats on wood, supports the onomatopoeic interpretation in this case, though this does not rule out the possible sharing of an onomatopoeic term between languages, which does happen. LMV languages did borrow from Algonquian languages, as the Proto-Central-Algonquian word for 'eye' **ški:nšekw* (Haas 1958: 245) borrowed into Choctaw *niškin*

(Byington and Swanton 1915: 445) and MTL *nešken* (Drechsel 1996: 280) attests, possibly arriving via contact with Algonquian languages to the north.

Following is a discussion of the extant literature of individual groups and languages, in alphabetical order, analyzed in this dissertation. (Choctaw-Chickasaw is placed under Proto-Muskogean, and Biloxi and Ofo are placed under Proto-Siouan for alphabetization purposes.)

2.2 Languages.

2.2.1 Atakapa (ISO 639-3: aqp).

Atakapa is a now dormant language isolate once spoken by several small bands along the Gulf coast between Vermilion Bay, Louisiana and Galveston Bay, Texas, and up the Trinity River, until the early twentieth century (Mithun 1999: 344).

Atakapa is a dormant, moderately agglutinating head-marking language with predominant SOV constituent order, as this example demonstrates:

(1) *Tepuk neš hihulat*
tepuk neš hi-hul-at
peach tree INDEF-plant-PERF
'They planted peach trees.'
(modified from Gatschet and Swanton 1932: 9)

Vowels are /i/, /e/, /a/, /o/, /u/ both oral and nasal; there was apparently also vowel length but this was not consistently marked by Gatschet and Swanton. Consonants are stops /p/, /t/, /k/, and /ʔ/; fricatives /f/ (rare), /š/, /h/, and /x/; voiced sonorants /m/, /n/, /ŋ/, /l/, /w/, /y/; and laterals /tl/ and /ɬ/. The Atakapa phonemes /tl/ and /ŋ/ are unique in the LMV, and there is the possibility that the latter is a dialectal variant of vowel + /*n*/, thus *wan* or *waŋ* 'walk' (Gatschet and Swanton 1932: 141).

The element order of the Atakapa verbal complex is as follows: (1) pronominal object; (2) locative prefixes; (3) principal stem; (4) plural and usitative; (5) infinitive; (6) future; (7) continuative; (8) volitional; (9) perfect; (10) pronominal subject; (11) negative; (12) remaining tense suffixes and interrogative suffix (Swanton 1919: 18).

Pronouns are both prefixed (object) and suffixed (subject). Verbal prefixes include objective pronominal prefixes in three persons and two numbers, reflexive, and reciprocal (Mithun 1999: 345); verbal suffixes include a plural and usitative, future, continuative, volitional (sometimes used for future), perfect, subjective pronominal suffixes in three persons and two numbers, a negative, and tense (ibid.). Atakapa has at least two forms of past tense reflecting the aspectual distinction between complete and incomplete action. Atakapa, like Natchez, does not appear to have a distinction between alienable and inalienable possession. Oddly, certain verbs which one would logically expect to be agentive, such as ‘go’, take patientive (objective) pronominal prefixes in Atakapa rather than agentive (subjective) suffixes, a case similar at least to the case of ‘go’ in Chitimacha. Atakapa and Chitimacha both have a focus and assertive suffix *-š*.

Indications are that there may have been various Atakapan-speaking groups in the LMV. Bidai, which went extinct early on, may have been an Atakapan language. Swanton (1932) divided Atakapan-speaking groups into two major subgroups: Western Dialect (WD) and Eastern Dialect (ED). Jean Béranger had elicited a supposed 45-word Atakapan vocabulary in 1721 that Swanton designated Akokisa, an undocumented group, which was located in the west near the WD. The three varieties noted herein, based on the Gatschet-Swanton data, show relatively minor phonological and lexical differences between them, although, curiously, the number systems seem to diverge drastically from each other.

The extant data for Atakapa is very limited. The earliest vocabulary of Atakapa was collected by the French sea captain explorer Jean Bérenger in 1721, who, besides "carrying off nine of the Indians of that region, who escaped not long afterwards..." also collected 45 words of the language (Swanton 1932: 2). An eastern Atakapa vocabulary of 287 entries was collected in 1802 by the Spanish commander Martin Duralde. In 1885, Gatschet collected western Atakapa language material in consultation with Louison Huntington and Delilah (or Delia as she was also known) Moss in Lake Charles, Louisiana. His material consists "mainly of words and phrases, but, from Louison Huntington, Gatschet took down about 4 ½ pages of text" (Swanton 1932: 5). Swanton (1932) compiled and edited a 181-page bidirectional Atakapa-English dictionary containing about 800 headwords with some example sentences and verb conjugations, incorporating the earlier material from Gatschet. The dictionary includes nine texts. Swanton incorporated some words from another group, Akokisas, who lived on Galveston Bay, into his Atakapa dictionary under the assumption that the language was Atakapan, but "there is no direct evidence that [Atakapa] represents their language" (Goddard 2005: 38).

The only Atakapa grammar available is the 28-page Swanton (1929) article, which provides a good overview of phonetics and phonology, morphology, and syntax, including detailed remarks on the use of affixes, and one annotated text with gloss and free translation.

2.2.2 Chitimacha (ISO 639-3: ctm).

Chitimacha is an isolate language, formerly spoken in what is now southwestern Louisiana, along the Gulf coast near Vermilion Bay, Louisiana and along the Atchafalaya River basin, the region which the Chitimachas called *Šeɣti* (Swadesh 1939: 67). A hypothesis by Brown et al. (2011) posit a linguistic genetic relationship between Chitimacha and 'Proto-

Totozoquean' (a term they use for their hypothesized linguistic genetic relationship between the Mesoamerican languages Totonacan and Mixe-Zoquean of the east-central Gulf coast of Mexico)[14]. European explorers reported that two small groups, Washa and Chawasha, also spoke languages similar to Chitimacha but these languages are undocumented (Goddard 2005: 13; Rowland and Sanders 1927: 32; Swanton 1919: 8). Chitimacha has a vigorous language revitalization program in place with partial help from the Rosetta Stone Foundation.

Chitimacha is a moderately agglutinative, head-marking isolate language with predominantly subject-object-verb (SOV) constituent order, as the following example shows:

(2) *cu·gš cu·gš še·nink hup hi nicwiʔi*
cu·-g-š *cu·-g-š* *še·ni-nk* *hup* *hi* *ni-cw-iʔi*
go-PART-FOC go-PART-FOC pond-LOC to there water MOVE.UPRIGHT-3S
'He went and went till he came to the edge of a pond.'
(Hieber 2013, pers. comm.)

Vowels are long and short /i/, /e/, /a/, /o/, /u/. Consonants are stops /p/, /t/, /c/, /č/, /k/; ejectives /p/, /t/, /c/, /c/, /k/; glottal stop; fricatives /s/, /š/, /h/; and sonorants /m/, /n/, /w/, /y/. Nasals may be syllabic.

The element order of the Chitimacha verbal complex is as follows: (1) independent pronominal object; (2) prefix indicating state; (3) general object; (4) VERB ROOT; (5) plural; (6) usitative; (7) perfect; (8) volitional; (9) future; (10) negative; (11) continuative; (12) pronominal subject; (13) remaining tense suffixes; (14) infinitive; (15) interrogative particle (Swanton 1919: 18).

A verb alone may form a complete clause. Only some nouns, primarily those referring to humans, have plural forms. Chitimacha has a subject suffix only for the first person; second and third persons are unmarked. Postpositions may mark location, directions, instruments,

[14] Such a hypothesis of course infers that speakers of Chitimacha migrated to and colonized the LMV from Mesoamerica (Mexico).

beneficiaries, and companions. As in most other LMV languages, auxiliary verbs distinguish position: horizontal, vertical, and neutral, though one Chitimacha innovation is that the horizontal positional may be derogatory when applied to humans. Tense/aspect/mode distinctions include future, aorist (past or present), continuative, usitative, necessitative, desiderative, imperative, polite imperative, hortatory, permissive, conditional, gerund, and gerundive (Mithun 1999: 388).

The only published source that includes Chitimacha is Swanton (1919). This short 56-page monograph, in which Swanton proposed that Atakapa, Chitimacha, and Tunica were all related in a stock he named "Tunican," gives historical background on the three languages, a discussion on comparison of phonetics, grammatical categories, syntax, pronominal systems, a tabular comparison of structural elements, and a comparative vocabulary for Chitimacha, Atakapa, and Tunica. It is a good source for checking cognates and elements of grammatical structure between the three languages and with other LMV languages. The primary value of this source is comparative. After analyzing the vocabulary and phonology of "Tunican, Chitimachan, and Atakapan stocks," Swanton concluded that these three languages were "merely widely divergent dialects of one stock" (Swanton 1919: 56). Haas later supported Swanton's conclusion by proposing the cover term "Gulf languages" for these languages, considering them a single stock. Part of this thesis will attempt to show that their similarities are due to convergence rather than to genetic affiliation.

Much of the extant material on Chitimacha is in the form of an 88-page Chitimacha-English unidirectional dictionary, a 238-page grammar, and about 110 texts prepared by Morris Swadesh that were never published. These manuscripts, however, offer a wealth of material on the language and culture and are in the process of being re-edited and transcribed for eventual

publication. A DVD course was published by Rosetta Stone Limited in 2011 for use as a learning tool. It is currently available only to members of the Chitimacha nation.

2.2.3 Mobilian Trade Language (MTL) (ISO 639-3: mod).

Mobilian Trade Language (MTL), also called Mobilian (Trade) Jargon and Choctaw-Chickasaw Pidgin and known by the autonyms *Yama* [*yama* is the MTL word for 'yes'] and *Anǫpa Ɬa* 'different language,' was one of the trade, or pidgin, languages spoken in Native America at least from the seventeenth century well into the twentieth century (Drechsel 1997). (Other trade languages of North America include Eskimo Jargon, Chinook Jargon, Delaware Jargon, and the non-verbal Plains or Indian Sign Language, also known as Hand Talk, which, in addition to being used by Native American deaf communities, was also used as an auxiliary form of communication for trade, hunting, and to augment spoken communication.) The last semi-speakers of the pidgin were found in the 1960s in Louisiana and Texas and were interviewed in the 1970s by Crawford and Drechsel (Sturtevant 2005: 33).

By the eighteenth century, the MTL was the *lingua franca* of much of the entire Southeast U.S. (the Creek *lingua franca* spoken in the Creek Confederacy during the eighteenth century may have been an eastern variant of MTL that incorporated more Eastern Muskogean vocabulary) (Drechsel 1996: 250). Although MTL is based largely on Western Muskogean, MTL is not mutually intelligible to speakers of Choctaw and Chickasaw. (The pidgin should not be confused with the Mobilian language spoken by the Mobilians [Mobila], which is unclassified and went extinct before it could be documented.)

MTL is a largely isolating, or analytic, language with predominant object-subject-verb (OSV) constituent order. "The vocabulary shows considerable lexical richness with a diversity of

semantic domains, confirming multiple usages and manifold social contexts for the pidgin" (Drechsel 1996: 248), evidenced by the fact that MTL served several groups, including the Biloxis, Appalachees, Alibamas, Pascagoulas, and Tunicas, each having its own particular language, yet all "speak the Mobilian, which was formerly the court language amongst the Indian nations of Lower Louisiana" (Brackenridge 1814: 151). "As for their Language they have two kinds, One which is a vulgar Dialect, different in each Town, the other a general Language common to the Creek Nations [,] the Choctaws, and the Blew Mouths [Biloxis]… In this Language are the Songs which contain their History and sacred Ceremonies…." (Oglethorpe 1734 in Crawford 1978: 6-7).[15] There is a line of an "old Tunica song" that states *Tali hata pisa achokma*, translated as 'white rock, or silver, looks good' (Kniffen et al. 1987: 181). However, these words are not Tunica but MTL (*tali* 'rock' or 'metal' + *hata* 'white' + *pisa-achokma* 'good-looking'), the words clearly Western Muskogean in origin. But the fact that this "old Tunica song" was at least partially sung in MTL is a good indicator of MTL's widespread use not only as an intercultural but also as an *intra*cultural form of communication.

The time of origin of MTL is unknown and a matter of dispute between those who posit its origin before European contact, perhaps even as early as the Mississippian period (ca. 900-1500 CE) (Drechsel 1996, 1997), and those who posit its origin after European contact (Crawford 1976; Galloway 1995: 321; Silverstein 1996: 124-127; Sturtevant 2005: 33). The primary arguments in favor of post-colonial origin are based primarily on the fact that "earliest sources do not mention any trade language" (Sturtevant 2005: 33) and on the hearsay evidence of European chroniclers who supposedly witnessed interpreters being used (see below), therefore supposedly making the use of a pidgin redundant and unlikely.

[15] Biloxis and neighboring Pascagoulas both practiced mouth tattooing, which earned them the appellation "Blue Mouths" (Kniffen et al. 1987: 182).

According to Galloway, "the behavior of both the French newcomers and the Indians clearly indicates that Mobilian [Jargon] was not used, either intertribally or between Indian and European, in formal or important situations" (1995: 321), thus supposedly denying the pidgin's existence at this time. Drechsel, however, notes MTL's "wide range of indigenous functions … and its geographic distribution overlapping with much of the Mississippian Complex" as testament to the pidgin's pre-European origin (2001: 176). I agree with the latter assessment, since linguistic evidence against its European origin includes its verb-final constituent order, like all other indigenous languages in the region but unlike English, French, or Spanish verb-medial (SVO) constituent order, and the fact that there are "few direct and indirect loans from European languages" (Drechsel 1996: 251; Drechsel 1997: 130), although "[t]he independent possessive pronouns of Mobilian are perhaps the result of French influence" (Sturtevant 2005: 33). Even if MTL were a post-European development, the indigenous structure infers that it was clearly developed by indigenous populations themselves without much, if any, input from European language sources (a situation similar to that of Chinook Jargon in the U.S. Northwest).

One argument against the pre-European existence of Mobilian Jargon has been the documented evidence of "chain interpretation, a burdensome arrangement in which European explorers depended on several translaters lined up according to their ability to speak with each other, as apparently attested for de Soto's exploration of 1539 to 1543" (Drechsel 1997: 279). Two particulars to consider, however, are that de Soto

> took a route considerably farther east and north than previously believed, and paid visits to the Cherokee and their neighbors, including speakers of Muskogean, Siouan, and other languages such as Yuchi (Booker et al. 1992). He thus travelled into present-day North Carolina and Tennessee, beyond the historically attested range of Mobilian Jargon (ibid.).

Thus the range of languages spoken would have been considerably broader, perhaps enough to require a chain of interpreters for various languages. There is also the possibility, often not considered by historians and anthropologists, that "chain interpretation may have served Souhteastern Indians as a form of passive resistance…." (Drechsel 1997: 279), thus making it all the more difficult for Europeans to gain inroads into indigenous cultures by requiring them to have a complex chain of interpreters acting as intermediaries.

Although Western Muskogean (Choctaw-Chickasaw) is the predominant source of MTL lexemes, there are also words copied into MTL from other Native American languages and families. These include borrowings from Algonquian, some of which are also recognizable to modern English speakers, such as *papo(s)* 'papoose' (baby), *nešken* 'eye', *šešekowa* 'rattle, gourd, drum', *mągasin* 'moccasin, shoe', and *pakan* 'pecan nut' (Drechsel 1997: 92). Several lexemes may have spread through the Southeast and LMV via MTL (see Chapter 6). (Partly for this reason, copied grammatical elements are of more value than copied lexical items in assessing the LMV as a Sprachbund.)

MTL vowel sounds are *e a o*, which "vary considerably in their phonetic realizations" (Drechsel 1996: 261), and non-phonemicized nasal variants thereof. Consonants are /p/, /b/, /t/, /k/, /č/, /f/, /ɬ/, /s/, /š/, /h/, /m/, /n/, /w/, /l/, /y/, /r/ (rare). The voiceless fricatives /s/ and /š/ often appear as variants of each other as well as "with the intermediate alveolar and apical-alveolar variants" showing some degree of retroflexion (Drechsel 1997: 279).

Comparing MTL with Choctaw, we can see that the agglutinative Choctaw sentence using affixes for patient and active pronominals attached to the verb becomes isolating in MTL:

(3) Choctaw

chi-	*bashli*	*-li*	*-tok*
2sg.	cut	1sg.	PAST

	accusative (patient)	V	nominative (active)	

(4) MTL

ešno	*eno*	*bašle*	*taha*
you	I	cut	finish

'I cut you.'
(Drechsel 1997: 302)

The two affixed pronouns affixed to the verb in Choctaw are independent pronouns in MTL. Similarly, the past tense suffix *-tok* in Choctaw is an independent particle *taha* in MTL based on the Choctaw verb 'finish.' There is no agent-patient distinction in MTL; independent pronouns are used for both subject and object. Thus, constituent order is much more crucial in MTL for deducing the meaning of a phrase than it is in Choctaw-Chickasaw.

Extant data on MTL are sparse. Crawford (1978) is a 142-page book on MTL containing a unidirectional vocabulary (English-MTL) of about 170 words gathered from semi-speakers of MTL. Drechsel (1996) is a 108-page article that is the only known published dictionary of MTL. The dictionary is unidirectional English-Mobilian with 1,250 entries with a Mobilian-English index. Drechsel's (1997) 392-page book that is a much more in-depth study of MTL history, structure, and vocabulary. There is perhaps more data on MTL "to be discovered in archives, especially in France and Quebec" (Sturtevant 2005: 33).

2.2.4 Natchez (ISO 639-3: ncz).

Natchez is a now-dormant isolate, a head-marking, highly agglutinative language spoken until the early twentieth century in the Central and Lower Mississippi Valley. Natchez was part of a broader language family, Natchesan[16], possibly including Taensa and Avoyel, though "the

[16] I use the term 'Natchesan' in reference to the language family, since 'Natchezan' is the archaeological term used to refer to culture and pottery.

evidence stops short of being conclusive" as to whether these latter really were Natchesan (Goddard 2005: 39). Unfortunately, little or no data was obtained on these latter languages before their disappearance. Natchez is highly agglutinative and somewhat fusional with predominant subject-object-verb (SOV) constituent order, as shown in the following example:

(5) *tama·Lnisica hikaL to·ʔa·wipsik*
tama·L-nis·ic-a hikaL-Ø to·-ʔa·-wi-p-si-k
wife-1POSS-ERG-ART corn.drink-ABS pound-3OPT-AUX-2DAT-DAT-CONN
'My wife will pound corn drink for you.'
(Kimball 2005: 387)

Vowels are /i/, /e/, /a/, /o/, /u/; consonants are stops /p/, /t/, /č/, /k/, /kʷ/, and /ʔ/; fricatives /š/ and /h/; voiced sonorants /m/, /n/, /l/, /w/, /y/ and voiceless sonorants /M/, /N/, /L/, /W/, /Y/. There is pitch accent with four pitch contours: high, mid, rising, and falling (Kimball 2005: 396). Like Muskogean languages, Natchez displays vowel harmony; regressive harmony is optional, but progressive is obligatory (Mithun 1999: 467).

The element order of the Natchez verbal complex is as follows: (1) preverb; (2) subject; (3) diminutive.subject; (4) aspect; (5) dual.subject; (6) patient; (7) patient.type; (8) plural.subject; (9) VERB ROOT; (10) dative.object; (11) dative; (12) new.topic; (13) modal suffix; (14) postverb (Kimball 2005: 402).

Natchez displays lexical and phonological variants, such as "the replacement of *ʔa* 'first person optative' with *ka-*" (Kimball 2005: 393), due to their supposedly being uttered by a marginalized inimical group in Natchez stories. This may reflect multiple speech registers due to the Natchez caste-like social system (Mithun 1999: 467). Natchez, like Atakapa, does not appear to distinguish between alienable and inalienable possession. "Nominalization is a fairly powerful process, while verbalization is weak and of limited productivity" (Kimball 2005: 401). Natchez shows a case system in which nouns are inflected for instrumental *-(yi)c*, comitative *-ʔa*, allative -

kuˑšˀ, and locative *-k*. There is a form of declarative marking in which sentences always terminate with vowel nasalization; this is the only time nasal vowels occur in Natchez, thus they are always phrase-final. Singular, dual, and plural number is distinguished for all persons. Verbal roots may show ablaut or change shape with different inflections. For example, the root form of 'drink' appears in the infinitive form *hahkušʔiš* '(for one) to drink,' but with a reduced form in participles, as *ʔihkuši* 'drinking' (Mithun 1999: 468).

Natchez was one of a family of languages called Natchesan, including perhaps Taensa and Avoyel, although such affiliation cannot be proven. Natchez was the sole survivor and the only Natchesan language with extensive documentation. Natchez may be related to Proto-Muskogean (Haas 1970: 50), but this proposal remains inconclusive.

A supposed grammar of the Taensa language (which may have been related to Natchez) was published in 1888 by a French seminary student, Jean Parisot. However, after careful linguistic analysis and scrutiny, including by Swanton (1908), this grammar was pronounced inauthentic. Swanton stated that the language of Parisot's grammar "was probably never spoken by any people whatsoever" (1908: 32) and was dismissed as a hoax. Swanton (1924) and Haas (1956) posited a linguistic relationship between Natchez and Muskogean, but Haas later concluded that the relationship between them was no closer than that between any other pair of languages within her proposed "Gulf" family (Galloway and Baird Jackson 2004: 598; Haas 1969: 62; Haas 1979: 318).

Swanton visited some Natchez in 1907 (Kimball 2005: 385). In 1909 Swanton worked with the native speaker Watt Sam (born ca. 1857). From this consultation he prepared a grammatical sketch of the language, which was edited in 1991 by T. Dale Nicklas but only privately printed (Kimball 2005).

The only published dictionary of Natchez is a short 127-page unidirectional Natchez-English lexicon by Charles Van Tuyl (1980). This lexicon follows an English translation of Antoine Simon Le Page Du Pratz's French ethnography (1751). (Du Pratz lived among the Natchez and learned the Natchez language.) In Van Tuyl's words, "This dictionary does not include listings from Dr. Haas' extensive unpublished Natchez materials, parts of which she has kindly shared with us" (1980: 65). Unfortunately, his expectations of seeing "a complete description" of the Natchez language with the publishing of Haas' materials (ibid.) has, over thirty years later, still not yet been realized.

The first and only publicly published grammar of the Natchez language is Kimball (2005), a grammatical sketch based on grammatical notes in Haas' as yet unpublished fieldnotes. The 68-page grammatical sketch packs in much of the phonetics and phonology, syntax, morphology and even some suprasegmental features of the language. It also includes a Natchez text with English gloss, translation, and linguistic analysis.

However, by far the best Natchez language data is contained in the already mentioned unpublished fieldnotes of Haas, taken over the course of several months in 1934 while she was a graduate student. She consulted with the native speakers Watt Sam and Nancy Raven, in the 1930s. Haas gathered over two thousand pages of fieldnotes containing a bilingual Natchez-English lexicon, included many native stories in the Natchez language in which she inserted interlinear English glosses, as well as the gathering of vocabulary and verbal paradigms. Haas' notebooks contain almost everything that can now be known about the Natchez language and culture, and her field notes are a treasure for this reason. Her careful and articulate notes and clear writing are essential to further publication and to our further understanding of Natchez

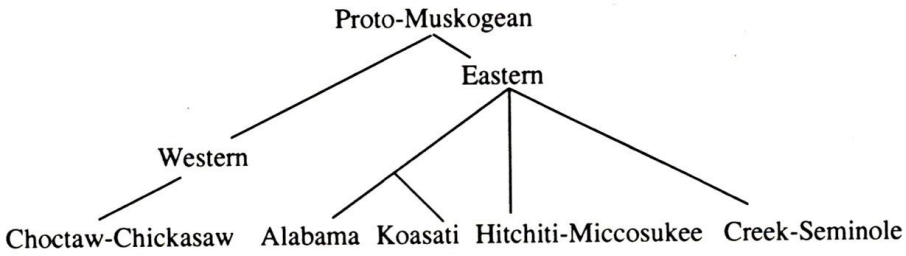
language and culture. Unfortunately, the majority of her Natchez material was never published, although they are archived at the American Philosophical Society in Philadelphia.

I am indebted to David Costa, a linguist in California who works primarily on Algonquian languages and who has published a Miami dictionary, for sending me copies of the more than two thousand pages of material (including nearly four thousand lexical items) of which Haas' notebooks are comprised.

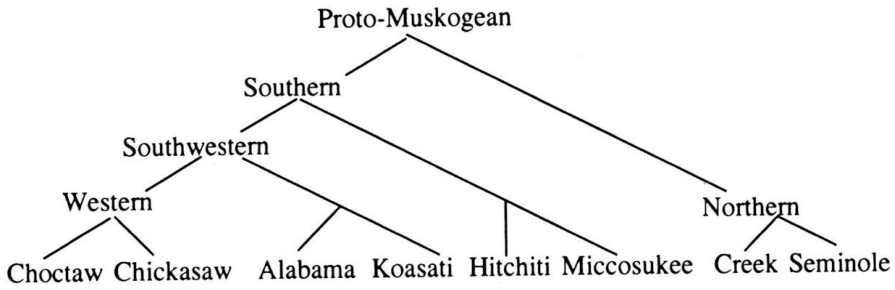
2.2.5 Proto-Muskogean.

Alabama (akz), Koasati (cku), Mikasuki (mik), and Creek (also Muskogee, mus). The other major language family represented in the Lower Mississippi Valley is Muskogean, shown in Fig. 2.1a-2.1b. Muskogean is the only language family spoken entirely within the Southeast. Proto-Muskogean is thought to have diverged into two primary areally-defined sub-branches, Southern and Northern Muskogean ca. 1500 CE. Within Southern Muskogean, Hitchiti and Mikasuki diverged early; later, ca. 1600 CE, Southwestern Muskogean emerged. This sub-branch includes Alabama and Koasati, and also ca. 1600 CE Choctaw and Chickasaw diverged sufficiently to constitute another sub-branch, Western Muskogean.

FIG. 2.2: a. Muskogean language family (after Haas 1941, in Martin 1994: 19)



b. Muskogean language family (after Munro 1987, in Martin 1994: 19)



Of the two tree diagrams presented above, Fig. 2.2a is the most accepted.

As with Siouan, Muskogean origin remains a point of controversy among academics. Based on Muskogee (Creek) creation and migration stories gathered by Gatschet in 1886, there is the possibility that the Muskogeans originated farther west, perhaps from west of the Mississippi River and possibly even from Mexico. The migration of part of the Muskogean language family during this time period appears to have resulted in the development, by ca. 1600 CE, of two major Muskogean language varieties, Eastern and Western. Western Muskogean includes the peoples now called Choctaws and Chickasaws, and may have formerly included Chakchiuma and Houma.

Choctaw and Chickasaw are closely related and generally mutually intelligible, and I treat the two languages as a unit in this dissertation for this reason. Muskogean is the only language family whose ancestral roots lie wholly within the southeastern U.S. geographical region (Hardy 2005: 69). The Muskogean family has been linked to the isolates Atakapa, Chitimacha, Natchez, and Tunica under the rubric 'Gulf', but such "relationships are not considered demonstrated" (Mithun 1999: 462). Muskogean has generally been divided into Western, Central, and Eastern branches (ibid.: 461), though "higher-level subgrouping is problematic, due to crosscutting resemblances, many from borrowing" (ibid.: 462). The Western Muskogean languages are Choctaw (ISO 639-3: cho) and Chickasaw (ISO 639-3: cic). A majority of Choctaws were forcibly relocated to Oklahoma between 1831 and 1833, though "a

substantial number resisted removal and remained in Mississippi" (Broadwell 2006: 1). Choctaw is still spoken by approximately 9,000 people in Alabama, Mississippi, and Oklahoma (ibid.) and "children are still learning the language" (Mithun 1999: 461). Chickasaw is spoken by approximately 1,000 people in Oklahoma (Munro and Willmond 1987), though most are over the age of 40 (Mithun 1999: 461). Western Muskogean also includes Chakchiuma and possibly Houma, both of which are now dormant and have no known documentation.

2.2.5.1 Choctaw and Chickasaw (ISO 639-3: cho and cic).

Choctaw and Chickasaw, here treated as a unit, are head-marking, moderately agglutinative languages with predominant subject-object-verb (SOV) constituent order. Choctaw-Chickasaw vowels are /i/, /a/, /o/ with contrastive length and nasalization. Consonants are /b/, /p/, /t/, /č/, /k/, /f/, /ɬ/, /s/, /š/, /h/, /m/, /n/, /l/, /w/, and /y/. Choctaw-Chickasaw *b* is a reflex of Proto-Muskogean (PM) *k^w (Mithun 1999: 464) and *f* is a reflex of PM *x^w (Haas 1969b: 36). As in Siouan, the minimum required for a Muskogean sentence is a bare verb root. Chickasaw developed a preconsonantal glottal stop, perhaps influenced by Siouan, either Biloxi or Dhegiha. Western Muskogean demonstratives follow the noun, as in Siouan, though unlike other languages of the greater Gulf-Atlantic Sprachbund. Vowel harmony is a common feature of Muskogean languages (Booker 2005: 266), as it is in Natchez. In Choctaw, "harmonized vowels often obliterate reflexes of proto-vowels" and often show assimilation in two directions: *kolokbi* vs. *kalakbi* 'hollow' (ibid.). As in Biloxi, Muskogean languages, including Choctaw-Chickasaw, show reference-tracking.

The element order of the Western Muskogean verbal complex is as follows: (1) instrumental prefix, (2) directional prefix, (3) reflexive prefix, (4) locative prefix, (5) dative

prefix, (6) comitative prefix, (7) irrealis prefix, (8) VERB ROOT, (9) negative suffix, used in conjunction with irrealis prefix, (10) causative suffix, (11) viewpoint suffix, (12) tense/aspect/evidential suffix, and (13) question suffix. The following is an example of Choctaw:

(6) *Ilipịsalitok*
ili-pịsa-li-tok
REFL-see-1-PST
'I saw myself.'
(Broadwell 2006: 177)

Verb morphology in Muskogean is elaborate. Some verb roots have suppletive forms for different numbers of participants. Verbs take pronominal affixes according to agent, patient, and dative. As in Siouan, there are forms for first and second person agents and patients but not third. While Central and Eastern Muskogean languages maintain only agent and patient suffixes, in Choctaw-Chickasaw all agent and patient affixes are prefixed except for first person singular, which is suffixed. This may be an influence from contact with Siouan (Nicklas n.d.). As in Siouan, some verbal prefixes function as locatives, instrumentals, and comitatives.

The only published dictionary on Choctaw is Byington and Swanton (1915), which is a 611-page bidirectional Choctaw-English dictionary with some example sentences but with no grammatical overview of the language. However, a useful grammar of Choctaw is Broadwell (2006), which provides an exhaustive 375-page discussion of phonology, syntax, morphology, as well as pragmatic features like focality, evidentiality, and switch reference. The grammar serves as a useful co-reference to Munro and Willmond's (1994) 539-page analytical Chickasaw-English bidirectional dictionary, which includes approximately 12,000 main entries. The dictionary also includes an overview of Chickasaw-Choctaw grammar. The dictionary includes many cultural annotations, making it a valuable cultural reference as well. Several minor differences between Choctaw and Chickasaw exist. For example, a Choctaw verb must include

the suffix *-h*, a marker of unspecified tense, which is no longer present in Chickasaw (Broadwell 2006: 198).

A useful source on Eastern Muskogean used for this thesis for comparative purposes is a 357-page bidirectional Creek (Muskogee)-English dictionary (Martin and Mauldin 2000). The dictionary includes an introduction to Creek language and history, and cultural photos and drawings, such as ball sticks (used in indigenous stickball games), and burial houses.

Of the Muskogean family, it is Western Muskogean languages, including the Mobilian Trade Language (MTL), that were found post-contact in the LMV.

2.2.6 Proto-Siouan.

Figure 2.3 shows the Siouan language family: Proto-Siouan is thought to have split into three distinct branches possibly as early as 1,000 BCE: Missouri Valley, Mississippi Valley, and Ohio Valley (Southeastern)—the latter being most relevant to the present study. The italicized forms indicate the major sub-groups (Dakotan, Chiwere, and Dhegiha) of the (upper) Mississippi Valley branch. Note that the Mississippi Valley branch of Siouan does not include Biloxi and Ofo, because these latter languages are likely to be, like Tutelo, from the Ohio Valley region in origin and are intrusive to the Mississippi Valley. (An asterisk follows dormant varieties.)

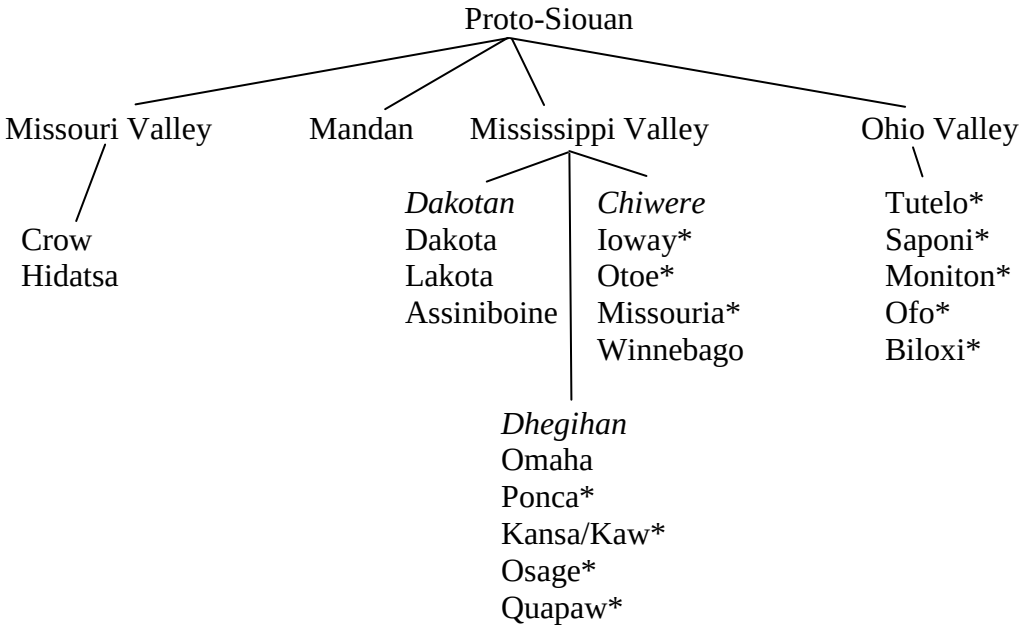


FIG. 2.3: Siouan Language Family (after Rankin 2006a)

2.2.6.1 Biloxi (ISO 639-3: bll).

Biloxi is a now dormant Ohio Valley (also called Southeastern) Siouan language, closely related to Ofo (see below). The autonym may be related to the Biloxi term *tani* 'to be in advance of another' and *tąniki* 'first' (Dorsey and Swanton 1912: 5), thus perhaps 'the first ones.' Biloxi was originally spoken in southern Mississippi where Europeans are first known to have encountered Biloxis in 1699. Later, as they were forced westward, the language was spoken in Louisiana and eastern Texas. The last known native semi-speaker of Biloxi died in 1934. The few remaining members of the Biloxi nation currently share a small reservation with the Tunicas (see below), a linguistically unrelated group, in Marksville, Louisiana.

Biloxi is a mildly agglutinative, head-marking language with predominant subject-object-verb (SOV) constituent order, demonstrated in the following example:

(6) *Tahôôxk nǫpa ko x-khu.khu ǫ daha dąde.*
horse two ? 1-give.REDUP do PL.OBJ FUT

‘I will give two (of the) horses to each (man).’
(Dorsey and Swanton 1912: 210)

Verbs are the most highly inflected category and are subject to noun incorporation. A Biloxi sentence may consist of merely the verb root alone with no affixation.

The Biloxi verbal complex can be formally stated as: (1) negative prefix, which is actually the first part of the negative circumfix, (2) pronominal or possessive prefix, (3) instrumental prefix, (4) dative prefix, (5) reflexive or reciprocal prefix, (6) locative prefix, (7) plural motion verb prefix, (8) VERB ROOT, (9) causative suffix, (10) plural pronominal suffix, and (11) negative suffix, which is actually the second part of the negative circumfix.

Biloxi lost the active-stative split common to other Siouan languages. Deictics follow nouns in Biloxi. As in Ofo, negation is optionally periphrastic with a prefix *ka-*, but the suffix *-ni* is sufficient. The plural suffix *-tu* can be added to any noun or stative verb, but is optionally employed; often the singular/plural distinction goes unmarked. A dual verbal form exists only for verbs of motion and for positional auxiliaries. A type of nominal case system exists, although, as in Choctaw, suffixed forms for accusative (object) and locative seem to be largely speaker-centered and not obligatory. In 1886, Albert Gatschet, a linguist with the Bureau of American Ethnology (BAE), traveled from Washington, D.C. to Louisiana to collect cultural and linguistic information. While there, Gatschet met with Jim Sam (full blood Biloxi), Bankston Johnson (half Biloxi, half Alabama), Juliane Dilsey, Maria Dilsey, Matt Caddy (full blood Biloxi), Ben Austin, John Dorsey, Betsey Joe Johnson, and William Johnson (half Biloxi, half Tunica) (Gatschet 1886).

Gatschet produced a wordlist of Biloxi vocabulary, which proved that Biloxi was a Siouan language and not Muskogean, as previously thought due to its geographic location near Muskogean languages. For example, Gatschet found the following correlations between Biloxi

and Dakota (northern Plains Siouan): Biloxi *sûpi* or *s'pi* 'black' and Dakota *sapa* 'black'; Biloxi *akpe* 'six' and Dakota *sha'kpe*. This wordlist was never published but is available through the Smithsonian (MS 1347, Smithsonian Institution National Anthropological Archives). Later, James Dorsey[17], a missionary-linguist, who had worked extensively on Siouan languages, visited the same area on the Red River where Gatschet had been. Dorsey met with language consultants Maria Johnson, Betsey Joe Johnson, and Bankston Johnson (Dorsey and Swanton 1912), these last two having been also visited by Gatschet six years prior.

Seventeen years later, in 1912, Swanton posthumously gathered Dorsey's material in order to edit and publish it. Swanton produced a dictionary of the Biloxi and Ofo languages (1912), which contains about 2,400 lexical items (2,000 Biloxi and 400 Ofo items) with some example sentences, and many elicited phrases and verbal paradigms. This work includes 31 Biloxi narrative texts, which are presented in the Dorsey-Swanton orthography with interlinear glosses. These are sometimes followed by notes on vocabulary items and grammar in the text, followed by an English translation. The texts, ranging from cultural narratives to two letters translated into Biloxi from Omaha, are the primary texts from which the bulk of the vocabulary in the dictionary is drawn. The Ofo portion of the dictionary does not include texts.

The dictionary is useable, but the orthography used is complex. Some lexemes were arranged under supposed 'roots' that do not exist or are due to mistaken analysis or false etymologies. Such factors can make using the dictionary laborious and misleading. Dorsey used diacritics such as <û> and <ŭ> to indicate the difference between /u/ and /ə/. Unfortunately, Swanton switched some (but not all) of Dorsey's diacritics, such as replacing Dorsey's /û/ with /ŭ/, thereby leaving the phonetic values of some of Dorsey's vowel

[17] James Dorsey is not related to the above-named language consultant John Dorsey.

diacritics uncertain. Following the convention of the time, Swanton also organized lexical items by what he perceived to be 'stems,' which were often missegmented morphemes that are not useful in word construction. The indexing of the dictionary is also problematic,[18] and numerous items have been misplaced in the dictionary[19] (Haas 1969a: 287).

In an effort to make the material on Biloxi easier to use, I developed and produced a revision to the Biloxi language portion of the original Dorsey-Swanton dictionary (Kaufman 2011). I developed a standardized orthography that captures the phonetic differences in vowel quality, such as the difference between orthographic <o>, which corresponds to [o], and orthographic <ô>, which is [ɔ], after Haas and Swadesh (1968). I also reorganized the dictionary's headwords, using complete non-segmented Biloxi lexemes as headwords, which improves word search.[20]

Paula Einaudi (1976) wrote a grammar of Biloxi as her Ph.D. dissertation. Her 184-page grammar is overall a good grammatical overview of Biloxi. However, she does not adequately cover discourse features such as evidentiality marking. She does not analyze many Biloxi

[18] "[A]ny item copied out of the English index without checking in the main dictionary will very often have a meaning quite different from what it is indexed by, indeed it may even have the opposite meaning. This is because the Biloxi or Ofo item merely gives the place in the main dictionary where the desired item is to be found. For example, the index entry *eleven* is followed by the Biloxi word *ohi´.* But this word means *ten*, not *eleven*, and is placed in the index to show that the word meaning eleven (*ohi´ so^{n}sa´xěhe'*) is to be located under the entry headed by *ohi´* (Haas 1969a: 287).

[19] "[M]any items do not belong in the place where they have been put because of mistaken analysis or false etymology. Thus under the index entry *ripe* the Biloxi word *tohi´* is given. But *tohi´* means *blue*, *green* (color), and also *green*, *unripe*. The Biloxi word *atuti* 'ripe' [is] wrongly treated as a derivative of *tohi´,* [and] is misplaced… Swanton's misplacing of the Biloxi word for *ripe* means that the word is to all intents and purposes lost to the dictionary user unless he takes the trouble to study the entries under *tohi´ blue* with great care" (Haas 1969a: 287).

[20] For example, the headword *atuti* appears in the revised Biloxi-English dictionary with one of its translations as 'ripe, done, finished,' while *thohi* occurs with its definitions 'blue, green, purple, of the blue-green color spectrum' and 'unripe.' (A comparison with other Siouan languages demonstrates that the phoneme /*t*/ here should be aspirated, which, per my revised orthography, is now written <th>.) In the accompanying revised English-Biloxi index, one can simply look up the word 'ripe' and immediately find Biloxi *atuti.* Similarly, one can look up 'blue', 'green', and 'unripe,' and immediately find Biloxi *thohi* for each of them. The revised dictionary also includes lexical comparison to other Ohio Valley Siouan languages (Ofo and Tutelo) where available, cross-referencing of vocabulary, and several appendices on body parts, flora and fauna, and medicinal plants.

particles, instead concluding that "nominal particles remain the thorniest problem of Biloxi syntax" (Einaudi 1976: 149). Einaudi's orthography also unfortunately conflates certain phonemic distinctions, for example, conflating /ə/ and /u/ to simply <u>, thereby obliterating the phonemic distinction between them, which can lead to phonetic inaccuracies.[21]

Sources on related Siouan languages that I consulted for this dissertation include a Lakota dictionary (Buechel and Manhart 2002), an Osage dictionary (Quintero 2009), a Dakota grammar (Riggs 2004[1893]), and an Osage grammar (Quintero 2006).

2.2.6.2 Ofo (ISO 639-3: ofo).

Ofo, also called Ofogoula and Mosopelea, is a now dormant Ohio Valley (also called Southeastern) Siouan language, closely related to Biloxi, that was spoken in the upper end of the LMV, near present-day Vicksburg, Mississippi. (Ceramic evidence places the Ofos at the Lake George [Holly Bluff] site along with the Tunicas ca. 1600-1700.) The Ofos likely originated in the same region as the Biloxis, in the Cumberland Plateau region of the western Appalachian highlands near modern Knoxville, Tennessee. Ofo is a mildly agglutinative, head-marking Siouan language with predominantly subject-object-verb (SOV) constituent order.

(7) *b-aphuska a-tci-tp-abe*
1.POSS-fist 1-you-hit-IRR
'I will hit you with my fist'
(Rankin 2002: 66)

Vowels are /i/, /e/, /a/, /o/, /u/ and the nasals /į/ /ą/ /ų/. Stops are aspirated and unaspirated /p/, /t/, /č/, /k/, /b/, /d/; plain fricatives /f/, /s/, /š/, /x/, /h/; aspirated fricatives /fh/, /sh/; sonorants

[21] Swanton's orthographic <ŭ> often represents [a], while <u> represents [u], thus making clear the distinction between, for instance, *supi* 'thin' and *sapi* 'black', the latter agreeing with other Siouan languages (cf. Kaufman 2007). In Einaudi's orthography, however, both of these words erroneously appear as *supi*, thus possibly misleading researchers in comparative and historic Siouan studies.

/w/, /l/, /y/; nasals /m/, /n/. Ofo is the only Siouan language to have the /f/ phoneme, a probable borrowing from Muskogean.

As in other Siouan languages, and indeed in all the languages of the LMV with the exception of the Mobilian Trade Language (MTL), the verb is the most complex element of a clause with nouns being relatively uninflected. Other lexical classes include adverbs, pronouns, and postpositions. Adjectives are non-existent in Siouan languages, with words translated by adjectives in English being stative verbs. Unlike in Biloxi, deictics precede the nouns they modify. "The active-stative distinction in Ofo is not obvious, if it exists at all" (Rankin 2002: 17). It appears that, like Biloxi, Ofo lost the agent-patient distinction typical of other Siouan languages, which may be either a subgroup development or independent development in each Ohio Valley Siouan language (Tutelo, the third major member of this subgroup once spoken in modern Virginia, has been insufficiently investigated in these regard). As in Biloxi and other Siouan languages, there are several instrumental prefixes, such as 'by heat,' 'pull by hand,' 'by mouth,' 'by pushing,' 'by foot,' 'by striking,' 'by pressure,' 'by blowing or shooting.' As in Biloxi, negation is optionally periphrastic but one could simply suffix a negative enclitic to the element being negated, usually the verb. As in Biloxi, Ofo loses word-initial labial resonants, usually reflexes of Proto-Siouan **w* and **m*. Future tense or irrealis is marked with a suffix *-abe* (Rankin 2002: 20). Ofo, like other LMV languages, used positional auxiliary verbs to express continuative or ongoing aspect.

The only material currently available on Ofo is an Ofo-English dictionary of about 600 words and a few phrases published along with the Dorsey and Swanton (1912) Biloxi-English dictionary. The Ofo vocabulary was elicited by Swanton in consultation with the last known speaker, Rosa Pierette, in Marksville, Louisiana in 1908. Rankin researched Swanton's original

card file at the National Anthropological Archives in the Smithsonian Institution and discovered that Swanton "marked vowel length in Ofo, but before the file went to the printer, he scratched the macrons [showing vowel length] out in each case. The reason for this is not clear" (Rankin, 2002: 2). Rankin (ibid.) then reproduced Swanton's original transcription in a grammar based on Swanton's dictionary with original notations.

2.2.7 Tunica (ISO 639-3: tun).

Tunica is a now-dormant isolate language that was previously spoken in the Central and Lower Mississippi Valley until the early twentieth century. Tunica was once part of a broader language family, Tunican, which likely included the languages Grigra, Koroa, Tiou, and Yazoo (Martin 2004: 81-83; Swanton 1919: 7). Unfortunately, these latter languages were not recorded before their extinction, so their affiliation is tenuous depending primarily on the hearsay of European colonists who found various groups able to intercommunicate. Tunica is a moderately agglutinative language with predominant subject-object-verb (SOV) constituent order:

(9) *hinyaʻtĭhč taʻ-yanɛra rɔʻhpănt seʻhihtɛʻpăn yuʻkʔunăhč šiʻmihk ʔunaʻnì.*
now DEF-ocean near every.morning when.DU.arrived DU.would.play they.say
'Now every morning when they came they would play, it is said.'
(Haas 1940: 135)

Tunica vowels are /i/, /e/, /ɛ/, /a/, /ɔ/, /o/, and /u/; consonants are stops /p/, /t/, /č/, /k/, /ʔ/; fricatives /s/, /š/, /h/; nasals /m/, /n/; liquids /l/, /r/; and glides /w/ and /y/.

The element order of the Tunica verbal complex is as follows: (1) locative prefix; (2) pronominal object; (3) VERB ROOT; (4) causative and usitative; (5) continuative; (6) auxiliaries; (7) perfect; (8) future; (9) negative; (10) pronominal subjective; (11) remaining tense suffixes; (12) infinitive or subordinating suffix; (13) imperative and interrogative suffix.

Tunica has a masculine-feminine gender classification system for both animate and inanimate substantives; nouns may occur alone, as *čɔha* 'chief,' or with the definite article prefix *ta-* 'the/some' and a gender suffix *-ku* 'masculine', thus giving *ta–čɔha–ku* 'DEF-chief-MASC.SG.' Nouns with an article appear with a suffix marking gender and number of referent: masculine singular, masculine dual, masculine plural, feminine singular, or feminine dual-plural (Mithun 1999: 533). Tunica is one of only two known eastern North American languages (the other being Timucua, part of the Gulf-Atlantic Sprachbund) that has "both *l* and *r* in phonemic contrast" (Goddard 2005: 12). Tunica is unique in the LMV in having the /r/ phoneme. Unlike other LMV languages, Tunica transformed from a subject-object to an actor-patient type language (Nicklas n.d.).

The first work on Tunica was done in 1886 near Lecompte, Louisiana by Albert Gatschet of the Bureau of American Ethnology (BAE). His consultant was William Ely Johnson (Haas 1953: 179). Johnson's father was Tunica, his mother Biloxi, and he spoke Biloxi, Tunica, and Choctaw. Then, in 1907-1910, Swanton, also of the BAE, visited the Tunicas. Swanton worked with Gatschet's consultant but also obtained information from another, Volsine Chiki (ibid.). Haas did field work on Tunica during several visits between 1933 and 1939. Her consultant was Sesostrie Youchigant (born ca. 1870) who was maternally related to Chiki and Johnson (ibid.) and was the last known speaker of the language. Members of the Tunica-Biloxi nation in Marksville, Louisiana are currently working to revitalize the Tunica language (Donna Pierite and Jean Luc Pierite, 2011, pers. comm.). Although Tunica and Biloxi are unrelated and structurally different languages (e.g., Biloxi is less agglutinative than Tunica), the close relationship between the two groups dates back to at least the late eighteenth century when there was a settlement at Bayou Boeuf, Rapides Parish, Louisiana, which included Tunica, Biloxi, and Choctaw settlers

(Brain and Phillips 2004: 589). Tunicas and Biloxis were incorporated as the Tunica-Biloxi Tribe in 1974 (ibid.), and they became federally recognized in 1981 (ibid.; ASIA 1980: 5).

There are two grammatical sources for Tunica: a Swanton article (1921), which gives an overview of the language, including a detailed outline of affixes and their meanings, and Haas' grammar written as a dissertation (1940). Swanton's material was based on data collected by Gatschet. Although we are grateful to have any sources at all, I concur with Haas' assessment of the weaknesses of Gatschet's material as published in Swanton: "His material is particularly weak in that he failed to record glottal stops. Hence a better understanding of the phonetics of the language coupled with the great amount of new grammatical and text material obtained from [Haas' consultant] Youchigant has contributed much toward making possible a fuller and more adequate analysis of the language" (1940: 9). Haas' (1940) 143-page grammar covers phonology, morphology, and syntax, and contains a sample text with grammatical analysis. Her grammar is the best we currently have of the Tunica language.

The sole published dictionary of Tunica (Haas 1953) contains about 2,800 entries with some examples, and many etymological notes and special comments by her consultant Sesotrie Youchigant. It contains a brief grammar section based on her earlier grammar. The dictionary is useful for comparative work as it incorporates aspects of Haas' vast knowledge of other Southeastern languages, including copying between them.

A compendium of Tunica narratives was published (Haas 1950). These were stories told to Haas by her consultant Youchigant. These texts are invaluable as the only extant narratives of Tunica oral history. The narratives are especially useful due to examples from Tunica oral history.

2.3 Summary.

The LMV languages represent several linguistic genetic families: Atakapan, Chitimachan, Muskogean, Natchesan, Siouan, and Tunican. Choctaw and Chickasaw are Muskogean while Biloxi and Ofo are Siouan. The others are isolates with no known current linguistic relatives. All the LMV languages are now dormant with the exception of Choctaw-Chickasaw, though revitalization programs are in place for Chitimacha and Tunica. MTL, or Mobilian Jargon, is a pidgin, one of several that occurred in North America and used in intensive trade and contact in the Mobile Bay region and throughout much of the LMV and Southeast U.S.

Now that we have a more complete picture of the LMV—of its history, peoples, geography, and languages—we can begin the process of ascertaining if the LMV is indeed a Sprachbund. First, however, in order to try and ascertain this, we need to have a rigid methodology that helps quantify features in the LMV. That is the focus of my next chapter.

Chapter 3

Methodology

3.0 Introduction.

In this dissertation I examine a single proposed Sprachbund: the Lower Mississippi Valley (LMV) of North America. To reiterate what was stated earlier, eight languages are found in the Lower Mississippi Valley (LMV) (counting Choctaw-Chickasaw as a unit). Biloxi and Ofo are part of the Siouan language family as evidenced by correlations in vocabulary, grammar, and typology between these two languages and Proto-Siouan reconstruction. Similarly, Choctaw-Chickasaw is part of the Muskogean family as evidenced by correlations in vocabulary, grammar, and typology between Choctaw-Chickasaw and Proto-Muskogean reconstruction. The Mobilian Trade Language (MTL) is a pidgin language largely based on Choctaw-Chickasaw. The remaining four languages (Atakapa, Chitimacha, Natchez, and Tunica) are isolates with no known living relatives. Although the languages are typologically similar in certain ways, they are nevertheless distinct from each other.

This dissertation makes use of two approaches used to assess a language area: the *circumstantialist* and the *historicist* (Campbell 2002). The historicist method involves seeking concrete evidence showing that shared traits are diffused. The historicist method is useful in examining the reasons for the development of the LMV Sprachbund, because we can correlate certain linguistic evidence, e.g., lexemes for cultigens, with archaeological samples of particular cultigens that are adequately dated to a certain region and time period. I will apply the historicist approach by examining the historical trajectory in the LMV, by, for example, examining trade and farming from an early time period.

The circumstantialist approach lists similarities found in the languages of a geographic area without seeking concrete material evidence demonstrating that the traits are actually diffused. In essence, the circumstantialist approach involves a "laundry list" approach, and, as such, does not seek to investigate the historical or archaeological background of a certain geographical area as a means of verifying how certain language features may have come about through contact. While the historicist approach is more vigorous in this regard, in an area such as the LMV where archaeological evidence is particularly difficult to correlate with language evidence, the circumstantialist approach is the only viable option for much of this analysis at least until more archaeological evidence comes to light to support the language evidence.

Methodology for this dissertation comprises two primary sections: phonetics and phonology, and morphology, in which the circumstantialist approach is used, and lexical and other, which will consist partly of a historicist analysis. An analysis of phonetics and phonology will be presented in Chapter 4. In Chapter 5 I will present an analysis of morphological structures. In Chapter 6 I will analyze lexical and semantic borrowing (calque) data.

3.1 Method of data collection.

The primary method used to collect data for this dissertation has been the perusal and sifting through of many written sources, both published and unpublished. Since most of the languages in the LMV are extinct (or, as we language revitalists prefer to say, "dormant," since we believe the languages can be revived from their "sleep" and spoken again), there is an overall paucity of extant data on several of the languages. I have analyzed what materials are available—primarily dictionaries, lexicons, grammars, and texts, and even phrase books for examples of still spoken languages—to extract what data exist for historical and comparative purposes.

While I have done a thorough analysis of available materials on the eight languages here included, it was impossible for me, not having fluency in and intimate knowledge of most of the languages involved, to avoid possible oversight of certain features or data. For instance, grammars were employed in this analysis with the hope that, if a particular feature were present in a language, it would have been noted by previous scholars in the language's grammar(s). The absence of native-speaker intuition on my part and/or the previous oversight of potential data on the part of prior scholars may have resulted in certain data being overlooked. Corrections and adjustments may indeed need to be made, but hopefully only to a small fraction of this overall analysis.

In Natchez and Chitimacha, much of the extant data is as yet unpublished, though the data are being organized by other authors (Geoffrey Kimball for Natchez and Daniel Hieber for Chitimacha) and will hopefully be published in the not so distant future. In the meantime, I have had to rely heavily on these unpublished sources, predominantly copies of handwritten field notes produced by earlier linguists (Haas in the case of Natchez, Swadesh in the case of Chitimacha).

This survey is not, and cannot be, linguistically complete: many of the indigenous languages of this region went extinct early on before they could be documented. We will never know to what degree such languages may have influenced the languages which survived that were documented and analyzed. I have also not delved into dialectal differences where they are known to exist. To echo Masica, this study has aimed to hit the high points and get the basic picture chalked in (1976: 11), without regard to the minute details of dialect or idiosyncratic speech patterns.

3.1.1 Phonetics/phonology and morphology.

I use two pre-existing lists of "Southeast" United States phonetic and grammatical features by Sherzer (1976) and Campbell (1997) and add features I have found through my own research: ejective stop; vowel alternations i ~ u, o ~ u, word initial h ~ Ø; phoneme /tl/; definite article; plural preverb with noun meaning 'people'; direct object preverb with noun meaning 'thing'). Of the eight languages in the LMV, each feature is either present or absent. I then count the number of features that occur in each language. The generalized measures of conformity to a given norm thus obtained will naturally break into ranges. This will give us the isoglosses for the proposed LMV Sprachbund. In an effort to establish a more precise areal-typological boundary, I also apply this measure to languages progressively farther away from the LMV convergence area (e.g., Eastern Muskogean, Caddoan, Coahuiltec), which, following Campbell et al. (1986), I term "control languages" in order to assess the extent of a particular feature. Said features are then scored on a tripartite weighting scale: 0, 1, 2, and include three primary axes: existence of the feature in a language, universality of the feature, and weighted significance of the feature. This scoring scale takes into account that the most salient features of a language, such as phonemes, are easier to copy than a feature that is well embedded and relatively hidden in the language, such as a grammatical feature. A score of 0 indicates that the feature in question does not exist in the area I have delimited as the LMV and is thus not relevant to the present discussion. A score of 1 indicates that the feature exists but is relatively easy to borrow (since words and sounds are easily recognizable in languages and are thus easier to copy than more obscure grammatical paradigms) and/or extends well beyond the LMV and/or is crosslinguistically common. Such a feature is thus not relevant to supporting the LMV as a Sprachbund. A score of 2, the highest weighting, indicates that the feature is either geographically limited to the LMV and its

immediate periphery and/or is crosslinguistically unusual and thus very relevant in support of the LMV as a Sprachbund.

3.1.2 Lexical items and calques.

The second section of this analysis (Chapter 6) concerns lexical items and semantic borrowings (calques) shared between LMV languages. Lexical and semantic borrowings help in the historicist sense of trying to determine the intensity of contact between groups and their possible migration patterns. Data for this section of the analysis was gathered through the perusal of several dictionaries and lexicons. At least one dictionary or lexicon was chosen as representative of each language, although in cases where more than one lexicon is available (e.g., Choctaw), others were used and the source of a particular lexical item is noted.

3.2 Method of data organization.

The first section of this analysis (Chapters 4 and 5) concerns phonetics, phonology, and morphology. Data for the first section of this analysis (Chapters 4 and 5) were gathered and put into a comprehensive database categorized by type of feature (phonetic/phonological, morphological) sorted by individual language.

Following Masica (1976), I test against one another the distribution of several features which can be used to define the LMV as a Sprachbund (see Chapter 1). The establishment of proposed Sprachbund boundaries depends on the establishment of proposed Sprachbund criteria, and it is possible to test only a selection of criteria. It is necessary to ascertain the viability of a proposed feature and trace it outward until the farthest limits of continuous distribution are reached.

There is no easy way of measuring or characterizing the total impact of one language on another (Weinreich 1953: 63), and, despite recent advances in grammatical theory and linguistic typology, there is no rational method for ranking grammatical structures between languages (Southworth 2005). However, in defining a Sprachbund it is necessary to establish parameters that will define the region as a language area. To this end, the significance of the LMV as a language area can be tested by using the "trait-complex" as a point of departure and assigning a numerical value to each trait, or feature, identified as part of the complex (Masica 1976: 170). For example, based on Masica's analysis, it was found that the "Indian norm" for word or constituent order is predominantly (subject)-object-verb, or (S)OV (ibid. 195). We also find that the South Asian or Indian trait complex scores a fairly high 24-30 among Hindi, Telugu, Bengali, Sinhalese, Japanese, Burmese, Amharic, and Turkish, indicating an exceptionally broad extension of the "Indian norm" all the way from Ethiopia (Africa) to Japan (East Asia). However, a significant drop-off of "Indian norm" traits occurs with Tibetan, scoring only 18 out of 30, and other languages, including Chinese, Persian, most Indo-European languages, Swahili, Arabic, and Thai score even lower, indicating their relative remoteness from the "Indian norm" (ibid.). (And this considering that at least one of the above-mentioned languages—Thai—is geographically quite close to the supposed Indian language area yet scores the lowest at 1.)

Data for the second part of this analysis (Chapter 6) consists of lexemes sorted by language into a lexicon representing a large cross-section of varying parts of speech and semantic categories in each language. Further, I produced another database with the lexicon of each language placed side-by-side for greater ease of lexical comparison between languages. I also produced a list of *basic* versus *non-basic* vocabulary in order to determine the intensity of borrowing between languages and their level of contact.

3.3 Method of analysis.

3.3.1 Phonetics/phonology and morphology.

I evaluate the feature norm—the features that are typical—for the LMV. Depending on the presence or absence of any feature, a language will yield a total, the sum of the numerical values of the complex features that it possesses, which expresses its nearness to or distance from this characteristic norm. Using this method, languages with the highest totals in this case will be the most LMV while those with the lowest totals will be the least LMV. For example, four LMV languages have nasalized vowel sounds while only one had ejective stops. Thus, nasalized vowels are more characteristic of the LMV and closer to the LMV norm than ejective stops. This has been called the "Top-down" approach, involving less bias than the "Bottom-up" approach wherein one postulates "one to one correspondences of very specific features between individual languages" then generalizing "the resulting list to all languages in the area" (Muysken 2008: 7). An advantage of the Top-down approach is "the possibility of establishing significance across linguistic areas" (ibid.). A disadvantage of this approach "might be that there is interference from typological patterning" (ibid.).

Neighboring languages to the east, north, and west were used as "control cases" (Campbell et al. 1986: 536) for checking the areal nature of an alleged LMV feature. In addition, English was also used as a control language, since it came to be a major second language (along with French and Spanish) and then the dominant language of this proposed Sprachbund.

If a particular feature exists in a language, it is given a 1. If a feature does not exist, the language receives a 0 for that feature. The number of LMV languages containing a particular feature was then tallied in the rightmost column while the total number of features occurring in

an LMV language is tabulated at the bottom. This bottom column then reflects the number of proposed LMV features occurring in each particular language, thus giving a numerical range of how close or distant the language falls from the LMV "norm."

As stated in my definition of a Sprachbund, a feature must occur in at least three LMV languages, not just in one or two, to make it a valid Sprachbund feature. (Two languages may come into close contact and share features without being part of a broader Sprachbund.) Thus, in Chapters 4 and 5, only features occurring in at least three LMV languages are included in the phonetic and morphological databases.

For the Phonetics/Phonology and Morphology Chapters 4 and 5, the original database (see Fig. 1.6.1, Chapter 1) has been reduced to two smaller databases for each chapter, the first focusing specifically on phonetics and phonology (Chapter 4), the second specifically on morphology (Chapter 5). Features more heavily weighted in the phonetic/phonological and morphological databases are given a score of 2 instead of 1.

3.3.1.1 Weighting features.

While the concept of quantifying features is necessary and useful in delimiting and analyzing the LMV, it is also necessary to evaluate the significance of features in order to gauge the overall strength of the area as a possible Sprachbund. I use the method employed by Campbell et al. (1986) in their analysis of Mesoamerica as a Sprachbund, such that a highly marked feature would be evaluated more highly than a less marked one. For example, Campbell et al. find a vigesimal counting system is a strong Mesoamerican language feature since it is found in virtually every Mesoamerican language, but is largely absent beyond Mesoamerica with

the exception of only a few languages on its periphery (1986: 546). To this end, only certain morphological features are evaluated, or "weighted," more highly than others.

In the LMV, all languages, with the possible exception of MTL, have subject-object-verb (SOV) constituent order while only one of the languages, Tunica, categorizes all of its nominals, regardless of animacy, into either of two linguistic genders, masculine and feminine, similar to Indo-European languages like French and Spanish. This means that SOV constituent order is a very strong LMV areal feature, while nominal categorization into linguistic genders is a very weak areal feature. However, although SOV constituent order is an ubiquitous feature in the LMV, it is ultimately of little to no relevance since many Native American languages outside the LMV also have SOV constituent order. On the other hand, the employment of positional verbs as aspectuals indicating incomplete or ongoing action is of much greater significance, since this is a rarer grammatical occurrence among Native American languages yet is a grammatical component of each language in the LMV. This indicates this feature's probable diffusion in the area through intimate contact and multilingualism and thus must be ranked higher than SOV constituent order as an areal feature. Areal features must thus be evaluated on a case-by-case basis to gauge their overall impact and significance in relation to the broader surrounding region not judged to be part of the LMV.

3.3.1.2 Basic vs. non-basic vocabulary.

I assess the copied vocabulary between LMV languages to identify how many *basic* lexemes there are and between which languages. So-called "basic" vocabulary is supposed to be universal to human languages and unlikely to be borrowed, words such as 'mother', 'hand', 'run', 'sleep', 'one', 'five', 'sun', and 'water,' so that it would be more unlikely for a language to

copy such words as opposed to more culture-specific vocabulary such as ‘tamale’ or ‘karaoke.’ Basic vocabulary for the LMV is analyzed in accordance with the Leipzig Jakarta 100 basic word list rather than from the more commonly used, but older and slightly more subjective, Swadesh list. The distinction between basic and non-basic vocabulary is relevant to the application of Thomason’s (2001) borrowing scale, since, again, so-called basic vocabulary is supposedly least likely to be copied between languages.

Assessing copied lexemes between languages as either ‘basic’ or ‘non-basic’ allows me to use Thomason’s (2001) scale to posit the intensity of contact between any two or more LMV languages. For example, a language that has copied basic vocabulary would indicate more intense contact with the source language than between two languages with only non-basic vocabulary, suggesting only casual contact between them.

3.3.1.3 Degree of language convergence.

In order to assess the degree of language convergence in the LMV, I used the following scale, after Thomason (2001):

> (1) CASUAL CONTACT, in which only *non-basic* vocabulary is copied;
>
> (2) SLIGHTLY MORE INTENSE CONTACT, in which copying includes function words and slight structural borrowing;
>
> (3) MORE INTENSE CONTACT, in which there is copying of *basic* as well as *non-basic* vocabulary and moderate structural borrowing; and
>
> (4) INTENSE CONTACT, in which there is both heavy lexical and structural copying.
>
> Thomason (2001: 70-71; emphasis mine)

It must be emphasized that

> [A]ny borrowing scale is a matter of probabilities, not possibilities. The predictions it makes can be violated, in principle and sometimes in fact. But since these predictions are robust—that is, they are valid in the great majority of cases that have been described in the literature—any violation should provide interesting insights into social and, to a lesser extent, linguistic determinants of contact-induced change (Thomason 2001: 71).

In the following chapter I analyze phonetic and phonological features of the LMV.

Chapter 4

Phonetic and phonological features

4.0 Introduction.

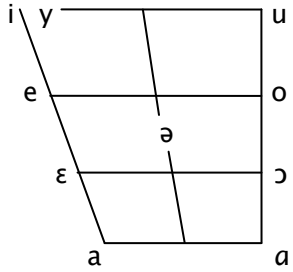
In the following chapter, I will examine phonetic/phonological elements to determine the relevance to an understanding of the LMV as a possible Sprachbund, as defined in Chapter 1. I begin with an analysis of vowel phonemes followed by consonant phonemes that occur in at least three LMV languages, making them viable candidates for hypothesizing the LMV as a Sprachbund. After this, I list phonemes that occur in two or fewer LMV languages, thus not playing a significant role in hypothesizing the LMV as a Sprachbund and listed only for informational purposes.

The presence of four language isolates makes an analysis of phonetic and phonological copying in the LMV difficult, since we cannot determine if ancestral languages of the isolates contained certain features and thus involved internal change. Thus, by necessity, certain possible phonetic and phonological borrowings involving these languages must remain uncertain as there is no longer a means of determining internal or external origin.

4.1 Inventory of Lower Mississippi Valley (LMV) phonemes.

4.1.1 Vowel phonemes.

A compilation of LMV vowel phonemes is:



Nasalized variants of a, i, and o occur in Biloxi and Ofo, as in most other Siouan languages. Nasalized variants of a, e, i, and o occur in Atakapa, and nasalized variants of all five vowels occur in Natchez, but only in word-final position as the result of phonological rules rather than phonemically. Nasalized variants of a, i, and o occur in Choctaw-Chickasaw as well as in the Mobilian Trade Language.

All LMV languages except Muskogean have at least a five-vowel system. In Muskogean (including MTL) there is only a three-vowel system (a, i, u), as also occurs in the peripheral Caddoan.

4.1.2 Consonant phonemes.

The cumulative LMV consonantal phonemes are:

	Bilabial	Labio-dental	Alveolar	Palato-Alveolar	Retroflex	Palatal	Velar	Glottal
Nasal	m		n				ŋ	
Plosive	p b		t d				k g	ʔ
Fricative		f	s	ʃ ʒ	ʂ		x	h
Approxi-mant						j		
Tap, flap			ɾ					
Lateral Fricative			ɬ					
Lateral Approxi-mant			l					

The voiced labiovelar approximate w occurs in all LMV languages. A labialized form of k (kʷ) occurs only in Natchez. The double articulated consonant tl occurs only in Atakapa. (For

phonemes of individual LMV languages, see Chapter 1.) Voiceless variants of m, l, and j occur only in Natchez, although devoicing of sonorants also occurs in Chitimacha and Tunica. Chitimacha appears to have had a /kʷ/ phoneme at an earlier period of its existence (Swadesh 1939: 34).

4.2 Most relevant phonetic/phonological features for determining a Sprachbund.

Features are ranked along a tripartite weighting scale: 0, 1, 2. A score of 0 indicates that the feature in question does not exist in the area I have delimited as the LMV. A rank of 1 indicates that the feature exists but extends well beyond the LMV and/or is so common crosslinguistically as to be irrelevant in supporting the LMV as a Sprachbund. A rank of 2, the highest weighting, indicates that the feature is either geographically limited to the LMV and its immediate periphery and/or is so crosslinguistically unusual as to be very relevant in supporting the LMV as a Sprachbund.

4.2.1 More highly weighted phonetic/phonological features.

Features that are weighted more highly, scoring 2 points instead of 1, are nasalized vowels, voiceless labiodental fricative, lateral fricative /f/, retroflex sibilant /ʂ/, alternation of /i/ and /u/, alternation of word initial /h/ ~ /Ø/, and vowel harmony, all features that are relatively rare around the LMV periphery and are thus most representative of a possible LMV Sprachbund.

4.2.1.1 Nasalized vowels.

Nasalized vowels are a feature of Siouan and Muskogean, and nasal vowels occur in several LMV languages: Atakapa, Biloxi, Choctaw-Chickasaw, MTL, Natchez, and Ofo. In

Natchez, however, nasal vowels occur only in phrase- or sentence-final position and are thought to be based on underlying final /n/, which acts as a type of declarative marker (Kimball, 2013, pers. comm.). Vowel nasalization in Atakapa is at times uncertain (see 4.3.4), perhaps being an allophone of the phoneme /ŋ/. Vowel nasalization in Atakapa and Natchez may be due to contact with Siouan and Muskogean languages of the LMV.

Vowel nasalization occurs in the following peripheral languages: Eastern Muskogean, in the Plains Siouan languages Dakota, Mandan, Ioway-Otoe, and Dhegiha (including Quapaw), Yuchi, Karankawa, Kiowa, Apache, and Cherokee. Nasalized vowels do not occur in the Great Basin Uto-Aztecan and Washo languages. Outside of North America, vowel nasalization is especially prominent in West Africa and in several South American languages.

Vowel nasalization is an internal Siouan development in Quapaw and possibly Yuchi, which may be a remote relative of Siouan. It is possible that nasalized vowels defused from Siouan and Muskogean into the peripheral languages.

The relative scarcity of nasal vowels among languages beyond the LMV in North America and universally warrants a more highly weighted score of 2.

4.2.1.2 Labiodental fricative /f/.

All Muskogean languages, including MTL, have the fricative /f/ phoneme. Haas postulated Muskogean /f/ as the modern reflex of Proto-Muskogean /xʷ/ (1969: 36). This phoneme is also found in Atakapa, Ofo, and at least as a dialectal reflex of Biloxi /xʷ/ as evidenced by Mrs. Jackson's pronunciation of *nixuxwi* (*nišofeʔ*) 'ear' (Haas 1968: 79). Timucua and Yuchi on the periphery of the LMV also have this phoneme.

Labial fricatives, both /f/ and /v/, are a "regional trait of the western region of the Southwest (linking it with Southern California and the Great Basin) and of the Tanoan region of the Southwest" (Sherzer 1976: 138). It also occurs in Comanche (ibid.: 173). These phonemes do not occur in the upper Plains or in the Northeast. Since it appears that /f/ was an internal change from /xʷ/ within Muskogean, it is likely that Atakapa, Ofo, Timucua, and Yuchi borrowed this phoneme from contact with Muskogean languages. The last known speaker of Biloxi, Emma Jackson, pronounced /xʷ/ as f, a pronunciation that correlates with the probable change of Proto-Muskogean /xʷ/ to f. (It is unclear whether this was a dialectal feature of Biloxi at the time data were elicited or whether this was an idiosyncratic pronunciation based on possible personal influence of Choctaw-Chickasaw.)

Since labiodental fricatives are relatively scarce among languages beyond the LMV in North America (with the notable exception of the U.S. Southwest), they have been more highly weighted with a score of 2.

4.2.1.3 Lateral fricative /ɬ/.

The voiceless lateral fricative /ɬ/ occurs in Atakapa, though rare, and in Muskogean languages, including MTL. This phoneme occurs in MTL, though variations of this phoneme arose (e.g., *ɬaɬo* > *šlašo* and *nani* 'fish'; Drechsel 1996: 282) presumably due to its rather difficult articulation to speakers of the pidgin unfamiliar with it in their own languages (e.g., English, French, Spanish). The fact that the phoneme /ɬ/ is rare in Atakapa may indicate that it was not originally a feature of Atakapa and was likely borrowed, probably through contact with Tonkawa, Muskogean, or both.

This phoneme occurs on the periphery of the LMV in Apache, Karankawa, Tonkawa, and Yuchi. The Mesoamerican language Totonac also has the /ɬ/ phoneme.

The relative scarcity of /ɬ/ among languages beyond the LMV in North America and universally warrants a more highly weighted score of 2.

4.2.1.4 Retroflex sibilant /ʂ/.

The retroflex phoneme /ʂ/ is a feature of Muskogean, including MTL, Natchez, and Tunica. This is not a typical phoneme among eastern North American languages, and it is now unknown whether this could have originally been a Natchesan or Tunican feature. A "back *ṣ*" is pervasive in an area centered in California but also extending into Oregon, the Great Basin, and western Mexico (Mithun 1999: 16; Bright 1984).

The fact that Tunica has this feature may lend support to the idea that Tunicas were once farther west and in contact with peoples of the Great Basin. However, retroflexed fricatives and affricates also occur in several Mesoamerican languages, including in some highland Mayan languages, Mixean, Yuman (Campbell et al. 1986: 544), and Totonac (MacKay 1999). Thus, there is also the possibility of diffusion of this phoneme into the LMV through contact with Mesoamerican languages via overland or maritime trade.

The phoneme /ʂ/ is thus a feature of the LMV that likely diffused via contact either from Tunica (though it is unknown whether this was originally a feature of Tunican or if Tunicans copied this phoneme from perhaps a Great Basin or other western language or from contact with Mesoamerican languages (Mayan, Mixean, Totonacan).

The relative scarcity of retroflex sibilants among languages beyond the LMV in North America and universally warrants a more highly weighted score of 2.

4.2.1.5 /i/ ~ /u/ alternation.

The alternation of /i/ and /u/ occurs in Biloxi, Natchez, and Tunica. This alternation appears to be a feature of Siouan languages, particularly of Biloxi but also of Dhegihan Siouan languages. Examples include Biloxi *ci* and *cu* 'put, place, plant,'; Natchez *išuš* and *ušuš* 'back'; and Tunica *tahišini* ~ *tahišuni* 'sieve'; *hiši* ~ *hišu* 'sift'. The transition of /u/ to /i/ in Siouan is most apparent in Kansa (Kaw), wherein /u/ is pronounced like German *ü*, apparently midway in transition between /u/ and /i/. Dorsey and Swanton (1912) also note such a phoneme in Biloxi pronunciation, though it was apparently infrequent.

This feature is likely not a genetic or internally developed feature and is crosslinguistically typologically rare. The feature is possibly borrowed from Siouan (Biloxi), and is a good indicator of a possible LMV Sprachbund.

4.2.1.6 Alternation of word initial /h/ ~ /Ø/.

The alternation of word initial /h/ ~ /Ø/ (zero marking) appears to be a feature of the LMV area. Examples include Atakapa *hipa* ~ *ipa* 'husband' (Swanton 1932: 42), *hikat* ~ *ikat* 'foot' (Swanton 1932: 40), *himatol* ~ *imatol* 'four' (Swanton 1932: 41), *huket* ~ *uket* 'mother' (Swanton 1932: 46); Biloxi *hane* ~ *ane* 'find', *hamihi* ~ *amihi* 'heat', *hasne* ~ *asne* 'thief' (Dorsey and Swanton 1912); and MTL *hat(t)ak* ~ *atak* 'man' (Crawford 1978: 88; Drechsel 1996: 295), *hoyba* ~ *oyba* 'rain' (Drechsel 1996: 306). This feature appears to be crosslinguistically insignificant.

This feature appears to be a Siouan language-internal development, since "glottal stop is often inserted before word-initial vowels in Siouan sentences as a *Grenzsignal*—a boundary marker—so it is possible that the Biloxi initial *h*- that comes and goes in these words is the local reflex of [ʔ]" (Rankin 2011). Regarding MTL, the alternation appears "to be instances of an *h*- that was present etymologically in Western Muskogean that was lost among certain users of Mobilian" (ibid.). While this may be true, the fact that three LMV languages—Atakapa, Biloxi, and MTL—exhibit such a feature is likely indicative of diffusion through contact. Since the change from [ʔ] to *h*- appears to be an internal Siouan development, it seems likely that this feature was copied from Siouan (Biloxi) into the other two languages and is a good indicator of a possible LMV Sprachbund.

4.2.1.7 Vowel harmony.

Vowel harmony occurs in Muskogean, including Choctaw, Natchez (regressive and progressive), and Tunica. In Natchez, regressive vowel harmony is optional while progressive is obligatory:

(1) *cuku·hu·–*
cuk-ə-·hə·-
trot-PL
'trot (plural subject)'
(Kimball 2005: 400)

(2) *ʔacpopo·noh*
ʔacpopopoh-·nuh
Irishman-DIM
'little Irishman'
(Kimball 2005: 400)

Vowel harmony is also known in Mayan and Copainalá Zoque (Campbell et al. 1986: 543).

The relative scarcity of vowel harmony among languages beyond the LMV in North America and universally warrants a more highly weighted score of 2.

4.2.2 Lesser weighted phonetic/phonological features.

The following features are weighted less primarily because they are crosslinguistically prominent or likely arose through internal impetus, making them less helpful in determining the LMV as a Sprachbund.

4.2.2.1 /x/.

The velar fricative /x/ is a feature of Atakapa and Siouan languages, and it occurs in Biloxi. (This phoneme appears to have largely disappeared from Ofo [Rankin 2013, pers. comm.].) Examples include Atakapa *itsix* 'above' and *sapixk* 'dead'; Biloxi *xuxwê* 'wind' and *naxê* 'hear'. It is now unknown whether Atakapan originally had this phoneme or if it was copied from Siouan, although the latter is probable.

The phoneme /x/ occurs far beyond the LMV, however. It occurs in Quapaw, Yuchi, Apache, Karankawa, Tonkawa, and Coahuiltec, spreading through the Great Basin into California and into Algonquian languages of the Upper Plains as well as also occurring in Huastec and Mayan. Its development in Quapaw and Yuchi is likely an internal development, while its occurrence in Karankawa and Coahuiltec could be influence from Huastec, Atakapa, or both.

I propose that the phoneme /x/ is a feature of the LMV likely having spread into Atakapa from Siouan (Biloxi). However, this phoneme is found far beyond the LMV and is crosslinguistically fairly common. It is thus ranked lower.

4.2.2.2 /l/.

The voiced liquid /l/ is present in Atakapa, Muskogean (including MTL), Ofo, Natchez, and Tunica; this phoneme is not present in Biloxi or Chitimacha. /l/ contrasts with /r/ in Tunica, the only LMV language to have /r/. While /l/ is a feature of the LMV, it is unlikely to have been diffused; it more likely arose in each language through internal impetus and is thus ranked lower.

4.2.2.3 Glottalized nasals.

Glottalized nasals are absent from the LMV; they do occur in Apachean in the Plains (Sherzer 1976: 141).

4.2.2.4 Devoicing of sonorants.

Devoicing of sonorants (l r y w) occurs in Chitimacha, Natchez, and Tunica. Final devoicing of sonorants is also a noted feature in Mesoamerica, including Mayan languages (primarily Quichean), Nahuatl (Uto-Aztecan), and Totonacan (Campbell et al. 1986: 537), thus also providing the possibility of diffusion through contact with Mesoamerica. While being a feature of the LMV, there is no sure way to determine if such devoicing arose through internal impetus in each language or if it diffused through contact. Thus, devoicing of sonorants is not indicative of the LMV being a Sprachbund.

The following features occur in only one LMV language and are thus not helpful or indicative of determining a Sprachbund. The following features are included only for informational purposes.

4.2.2.5 Ejective stops.

Ejectives (glottalized stops and affricates) occurred only in Chitimacha, though ejectives "are very common in North America" (Mithun 1999: 19), appearing in Siouan (though not in Biloxi or Ofo), Kiowa-Tanoan, Caddo, Coahuiltec, many languages of California and the northwestern U.S. (ibid.), Tonkawa (Campbell et al. 1986: 544), and Tepehua (Totonacan) and Mayan. Brown et al. (2011) have proposed that ejectives in Chitimacha arose through possible genetic inheritance with Totozoquean. (Brown et al. have coined the term "Totozoquean" to refer to the combination of Mixe-Zoquean and Totonacan, which, they argue, is the family from which Chitimacha derives.)

Since ejectives occurred only in one LMV language, this feature does not help in defining the LMV as a Sprachbund.

4.2.2.6 /kʷ/.

The labiovelar /kʷ/ is only a standard feature of Natchez, although Biloxi superficially shows kʷ as in *kwįhi* 'valley.' However, upon deeper examination this lexeme turns out to be composed of underlying *kuwi* 'up, above' + *įhi* 'reach, arrive,' thus demonstrating /u/ vowel devoicing in the first syllable rather than a true /kʷ/ phoneme. Since this phoneme occurs in only one LMV language, it is not indicative of a Sprachbund.

On the periphery, /kʷ/ occurs in Caddoan, Tonkawa, Comanche, Karankawa, Coahuiltec, and Timucua. It is possible Natchez developed this phoneme through contact with Caddoan or Timucua.

Crosslinguistically, labiovelars are quite prominent in West and Central Africa (Maddieson 2013). Since this feature occurs in only one LMV language, it does not help in determining a Sprachbund.

4.2.2.7 /ŋ/.

Atakapa is the only LMV language in which the phoneme /ŋ/ is known to occur. This phoneme occurs in the Great Basin into California and in the Southwest, including in Karankawa and Coahuiltec. It also occurs in Totonac.

Nasalization of an immediately preceding vowel /ⁿ/ (ñ in Swanton's [1932] data) may simply be an allophone of /ŋ/ in Atakapa. For example, Atakapa 'house' is written in Swanton's data as both *aŋ* and *aⁿ* (Swanton 1932: 27). This phoneme's variant as full vowel nasalization represented by /ⁿ/ in place of final /ŋ/ in Atakapa may be influence from contact with Siouan and/or Muskogean languages, although the original Atakapan /ŋ/ may have developed through contact with Great Basin or Southwestern North American languages (including Karankawa and Coahuiltec) in which this feature is prominent.

The velar nasal /ŋ/ is crosslinguistically quite ubiquitous, occurring quite prominently in the South Pacific, Australia, Papua New Guinea, Southeast and Central Asia, and across Central and Western Africa (Anderson 2013).

4.2.2.8 /r/.

The liquid /r/ occurs only in Tunica in the LMV. However, this phoneme has a broad distribution through the Great Basin into California and in the Southwest in Yuman, Hopi,

Acoma, and Tanoan (Sherzer 1976), as well as in Caddoan, Karankawa, and Comanche. The phoneme also occurs in Timucua as well as in Huastec and Mayan. It is possible Tunican copied the phoneme through contact with either Caddoan or Timucua, but it could also easily have been an original phoneme of Tunican languages.

The liquids /l/ and /r/ phonemically contrast in Tunica (see 4.3.6).

Since this phoneme occurs in only one LMV language and is crosslinguistically common, it is not indicative of a Sprachbund.

4.2.2.9 /r/ and /l/ opposition.

The opposition between /r/ and /l/ occurs only in Tunica, which is also the only LMV language that has the /r/ phoneme.

Since this feature occurs in only one LMV language, this feature is not indicative of a Sprachbund.

4.2.2.10 /tl/.

The lateral affricate /tl/ occurs only in Atakapa in the LMV. In the extant Atakapa data, /tl/ occurs only in word-initial position, e.g., *tlakš* 'dirty,' *tla* 'mosquito,' *tluk* 'smoke tobacco.' It is unknowable whether this phoneme arose through internal impetus in Atakapan or if it arose through external contact. However, the apparent phonological limitation of occurring only word initially, and the fact that Nahuatl /tl/ is not limited to word initial position would suggest an internal impetus.

On the periphery this phoneme occurs in Apache, Kiowa, Cherokee, and Totonac.

Crosslinguistically, the lateral affricate /tl/ is comparatively rare, occurring most prominently in the Pacific Northwest, the Caucuses, and Central Africa (Maddieson 2013).

The phoneme /tl/ occurs in the LMV only in Atakapa and is thus not indicative of a Sprachbund.

4.2.2.11 Preaspirated voiceless stops.

In the LMV this occurs only in Muskogean, though it also occurs in Osage, a Dhegihan member of the Siouan family on the periphery of the LMV.

4.2.2.12 Tone.

Tonal contrast occurs only in Natchez, in which there are four pitch contours: high, mid, rising, and falling (Kimball 2005: 396). Examples include:

(3) *kúNà* (3-1) (high-mid)
kuN-a
water- DEF
'the water'
(Kimball 2005: 396)

(4) *ʔiˇ·MšàLsìk* (3-4-1-1) (rising-mid-mid)
ʔi·M-ša-Lsi-k
agree-QT-AUX-CONN
'He agreed, so they say.'
(Kimball 2005: 396)

Choctaw also has pitch accent, "but there seem to be almost no pairs which are distinguished by pitch alone" (Broadwell 2006: 17). Tonal contrast is also known in Cherokee, some Mayan languages, and in Northern Tepehuan and Cora-Huichol (both Uto-Aztecan) (Campbell et al. 1986: 544).

In this assessment, each feature occurring in three or more LMV languages and known to be relatively scarce outside of the LMV and universally receives a score of 2, while those features that are relatively ubiquitous, both within North America and universally, receive a score of 1. Features that do not occur in an LMV language receive a score of 0.

Table 4.1 shows a chart summarizing LMV phonetic and phonological features. The total number of LMV features that each LMV language contains is shown at the bottom of the chart.

TABLE 4.1: Chart of LMV phonetic and phonological features. Certain features that are relatively scarce beyond the LMV and universally (those most determinative of the LMV as a Sprachbund) are given a score of 2; features that are relatively abundant outside of the LMV receive a score of 1; languages not containing a certain feature receive a score of 0.

	feature	source(s)	Atakapa	Biloxi	Chit.	MTL	Natchez	Ofo	Tunica	Western Muskogean
	PHONETIC/PHONOLOGICAL									
1	nasalized vowels	Sherzer 1976	2	2	0	2	2	2	0	2
2	ejective stop	Kaufman 2012	0	0	1	0	0	0	0	0
3	vowel alternation i ~ u	Kaufman 2012	0	2	0	0	2	n/d	2	0
4	word initial h ~ 0	Kaufman 2012	2	2	0	2	0	n/d	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	0	0	0	0	0	0	0
6	/k^{w}/	Sherzer 1976	0	0	0	0	1	0	0	0
7	/f/	Sherzer 1976	2	2	0	2	0	2	0	2
8	/x/	Sherzer 1976	1	1	0	0	0	1	0	0
9	/h/	Sherzer 1976	1	1	1	1	1	1	1	1
10	/l/	Sherzer 1976	1	0	0	1	1	1	1	1
11	/ʔ/ lateral fricative	Sherzer 1976	2	0	0	2	0	0	0	2
12	glottalized nasals	Sherzer 1976	0	0	0	0	0	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	1	0	0	0	0	0	0	0
14	/r/	Sherzer 1976	0	0	0	0	0	0	1	0
15	/q/	Sherzer 1976	0	0	0	0	0	0	0	0
16	r/l opposition	Sherzer 1976	0	0	0	0	0	0	1	0
17	s/š opposition	Sherzer 1976	0	0	1	1	0	1	1	1
18	/tl/	Kaufman 2012	1	0	0	0	0	0	0	0
19	glottalized semivowels	Sherzer 1976	0	0	0	0	0	0	0	0
20	preaspirated voiceless stops	Campbell 1997	0	0	0	0	0	0	0	1
21	retroflex sibilants	Campbell 1997	0	0	0	2	2	0	2	2
22	vowel harmony	Nicklas 1994	0	0	0	0	2	0	2	2
23	five-vowel system	Sherzer 1976	1	1	1	0	1	1	1	0
24	tone	Kaufman 2012	0	0	0	0	1	0	0	0
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	0	0	1	0	1	0	1	0
	TOTALS		**14**	**11**	**5**	**13**	**14**	**9**	**13**	**14**

TABLE 4.2: Charts of peripheral phonetic and phonological features.

	feature	source(s)	Eastern Muskogean	Quapaw (Dhegiha)	Caddoan	Yuchi	Karankawa	Tonkawa	Kiowa	Apache
	PHONETIC/PHONOLOGICAL									
1	nasalized vowels	Sherzer 1976	2	2	0	2	2	0	2	2
2	ejective stop	Kaufman 2012	0	1	1	1	0	0	1	1
3	vowel alternation i ~ u	Kaufman 2012	0	?	0	0	0	0	0	0
4	word initial h ~ 0	Kaufman 2012	0	?	0	0	0	0	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	0	0	0	0	0	0	0
6	/k^{w}/	Sherzer 1976	0	0	1	0	1	1	0	0
7	/f/	Sherzer 1976	2	0	0	2	0	0	0	0
8	/x/	Sherzer 1976	0	1	0	1	1	0	0	1
9	/h/	Sherzer 1976	1	1	1	1	1	1	1	1
10	/l/	Sherzer 1976	1	0	0	1	1	1	1	1
11	/ʔ lateral fricative	Sherzer 1976	2	0	0	2	2	0	0	2
12	glottalized nasals	Sherzer 1976	0	0	0	1	0	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	0	0	0	0	1	0	0	0
14	/r/	Sherzer 1976	0	0	1	0	1	0	0	0
15	/q/	Sherzer 1976	0	0	0	0	0	0	0	0
16	r/l opposition	Sherzer 1976	0	0	0	0	1	0	0	0
17	s/š opposition	Sherzer 1976	1	1	1	1	1	0	0	1
18	/tl/	Kaufman 2012	0	0	0	0	0	0	1	1
19	glottalized semivowels	Sherzer 1976	0	0	0	1	0	0	0	?
20	preaspirated voiceless stops	Campbell 1997	1	0	0	1	0	0	0	0
21	retroflex sibilants	Campbell 1997	2	0	0	0	0	0	0	0
22	vowel harmony	Nicklas 1994	2	0	0	0	n/d	0	0	0
23	five-vowel system	Sherzer 1976	0	1	0	1	1	1	1	0
24	tone	Kaufman 2012	0	0	1	0	n/d	0	0	1
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	0	0	0	0	0	0	0	0
	TOTALS		**14**	**7**	**6**	**15**	**13**	**4**	**7**	**11**

	feature	source(s)	Comanche	Shawnee	Coahuiltec	Timucua	Cherokee	Catawba	Nahuatl	Huastec
	PHONETIC/PHONOLOGICAL									
1	nasalized vowels	Sherzer 1976	0	0	0	0	2	2	0	0
2	ejective stop	Kaufman 2012	0	0	1	0	0	0	0	1
3	vowel alternation i ~ u	Kaufman 2012	0	0	0	0	0	?	0	0
4	word initial h ~ 0	Kaufman 2012	0	0	0	0	0	?	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	1	1	0	0	0	0	1
6	/k^{w}/	Sherzer 1976	1	0	1	1	0	0	1	1
7	/f/	Sherzer 1976	0	0	0	2	0	0	0	0
8	/x/	Sherzer 1976	0	0	1	0	0	0	0	1
9	/h/	Sherzer 1976	1	1	1	1	1	1	1	0
10	/l/	Sherzer 1976	0	1	1	1	1	0	1	1
11	/ʔ lateral fricative	Sherzer 1976	0	0	0	0	2	0	0	0
12	glottalized nasals	Sherzer 1976	0	0	0	0	0	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	0	0	0	0	0	0	0	0
14	/r/	Sherzer 1976	1	0	0	1	0	1	0	1
15	/q/	Sherzer 1976	0	0	0	0	0	0	0	?
16	r/l opposition	Sherzer 1976	0	0	0	1	0	0	0	1
17	s/š opposition	Sherzer 1976	0	0	1	0	0	1	1	0
18	/tl/	Kaufman 2012	0	0	0	0	1	0	1	0
19	glottalized semivowels	Sherzer 1976	0	0	0	0	0	0	0	0
20	preaspirated voiceless stops	Campbell 1997	0	0	0	0	0	0	0	0
21	retroflex sibilants	Campbell 1997	0	0	0	0	0	0	0	0
22	vowel harmony	Nicklas 1994	0	0	2	0	0	0	0	0
23	five-vowel system	Sherzer 1976	1	1	1	1	1	1	0	1
24	tone	Kaufman 2012	0	0	0	0	1	0	0	0
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	0	0	0	0	0	0	0	?
	TOTALS		**4**	**4**	**10**	**8**	**9**	**6**	**5**	**8**

	feature	source(s)	Mayan (other)	Totonac	English
	PHONETIC/PHONOLOGICAL				
1	nasalized vowels	Sherzer 1976	0	0	0
2	ejective stop	Kaufman 2012	1	0	0
3	vowel alternation i ~ u	Kaufman 2012	0	0	0
4	word initial h ~ 0	Kaufman 2012	0	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	0	1
6	/k^w/	Sherzer 1976	0	0	1
7	/f/	Sherzer 1976	0	0	2
8	/x/	Sherzer 1976	1	0	0
9	/h/	Sherzer 1976	1	1	1
10	/l/	Sherzer 1976	1	1	1
11	/ʔ/ lateral fricative	Sherzer 1976	0	2	0
12	glottalized nasals	Sherzer 1976	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	0	1	1
14	/r/	Sherzer 1976	1	0	0
15	/q/	Sherzer 1976	1	1	0
16	r/l opposition	Sherzer 1976	1	0	0
17	s/š opposition	Sherzer 1976	0	1	1
18	/tl/	Kaufman 2012	0	0	0
19	glottalized semivowels	Sherzer 1976	0	0	0
20	preaspirated voiceless stops	Campbell 1997	0	0	0
21	retroflex sibilants	Campbell 1997	2	2	0
22	vowel harmony	Nicklas 1994	2	2	0
23	five-vowel system	Sherzer 1976	1	0	1
24	tone	Kaufman 2012	1	0	0
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	1	0	0
	TOTALS		**14**	**11**	**9**

4.3 Summary.

All LMV languages except Chitimacha and Tunica have nasalized vowels, which is a strong feature of the LMV since its distribution across the periphery is limited. All languages except Biloxi and Chitimacha have /l/. Devoicing of sonorants occurs in Chitimacha, Natchez, and Tunica, but it is now impossible to know if any or all of these languages originally possessed this feature or if it was copied between languages. Ejective stops, the phonemes /k^w/, /ŋ/, /r/ (including /r/ and /l/ opposition), /tl/, preaspirated voiceless stops, and pitch/tone are present in

two or fewer languages of the region, and, in accordance with my definition of a Sprachbund, are not relevant in determining the LMV a Sprachbund.

The phonetic features that are most useful in determining the LMV as a Sprachbund are vowel nasalization, the phonemes /f/, /ʂ/, and /ɬ/, the alternation of /i/ and /u/, the alternation of word initial /h/ and /Ø/, and vowel harmony. These phonetic features have been rated 2 points each.

Based on the number of phonetic and phonological features present in LMV language as demonstrated in Table 4.1, Atakapa, Choctaw-Chickasaw (Western Muskogean), MTL, Natchez, and Tunica show the highest total of LMV phonetic and phonological features, followed closely by Biloxi and Ofo. Chitimacha shows the lowest total of phonetic and phonological LMV features.

On the periphery, Eastern Muskogean, Yuchi, Karankawa, Apache, Coahuiltec, and Timucua score close to LMV totals, suggesting perhaps that the LMV, at least as far as concerns phonetics and phonology, may be part of a much broader language area ranging from the Rio Grande Valley (Coahuiltec) to the Atlantic seaboard (Timucua).

It may be significant that several LMV features (/ʂ/, /ɬ/, ejective stops, /tl/, vowel harmony, and tonal contrast) also occur in Mesoamerican languages, suggesting possible diffusion from or origin in Mesoamerica, though this possibility will require further study.

In the next chapter I will examine morphological features in the LMV.

Chapter 5

Morphological features

5.0 Introduction.

In this chapter, I discuss morphological features of the Lower Mississippi Valley (LMV). Treatment of morphological features will be similar to that for phonetics and phonology, except that some morphological features will be weighted more heavily, i.e., given an extra point, since certain morphological features are easier to copy than others. I begin with a discussion of weighted features followed by non-weighted features and features that I judge to be inconsequential or non-significant for the determination of the LMV as a Sprachbund.

While phonetic resemblances have long been accepted as cases of borrowing, syntactic and morphological borrowing has met various degrees of objection. Sapir believed that morphology was very unlikely to be borrowed. The opposite belief also took hold, that all aspects of language could be borrowed so freely that every language had "multiple roots" and genetic classification was no longer even possible, a stance taken by Trubetzkoy (1923) that "Indo-Europeans" were never one people, but were a group of unrelated peoples who linguistically came to resemble each other through close association.

LMV languages support Greenberg's Universal 4, in which "[w]ith overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional" (1961[1939]: 79) and Universal 16, which states that "(i)n languages with dominant order SOV, an inflected auxiliary always follows the main verb" (ibid.: 85). LMV languages are indeed postpositional and have auxiliaries following the main verb.

5.1 Most relevant morphological features for determining a Sprachbund.

As in the preceding chapter, features are ranked along a tripartite weighting scale: 0, 1, 2. A score of 0 indicates that the feature in question does not exist in the area I have delimited as the LMV and is thus not relevant to the present discussion. A rank of 1 indicates that the feature exists in the area, but, like subject-object-verb (SOV) constituent order and reduplication, it is so common crosslinguistically that its presence in the LMV is not distinctive and thus not determined to be relevant to supporting the LMV as a Sprachbund. A rank of 2, the highest weighting, indicates that the feature is either geographically limited to the LMV and its immediate periphery and/or is so crosslinguistically unusual as to be very relevant in supporting the LMV as a Sprachbund.

The morphological features that are weighted more highly in this analysis are:

(1) Focus and topic marking.

(2) Indirect animate object prefix-valence reducer.

(3) Indirect inanimate object prefix-valence reducer.

(4) Positional verb auxiliaries.

(5) Verb number suppletion.

Table 5.2 is a chart summarizing morphological features in the LMV.

5.1.1 Discourse marking.

I use the term “discourse-marking” to include such speaker-centered emphatic marking often labeled ‘focus,’ ‘topic,’ and ‘assertion,’ as well as evidentiality and reference-tracking. These markers in each language in which they occur are discussed below.

5.1.2 Focus.

For this dissertation, I use the term 'focus' to refer to newly given information (what Prague school linguists call 'rheme') (Payne 1997: 271). LMV focus-marking suffixes can occur on both nouns and verbs.

Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, and Natchez have focus-marking suffixation. Atakapa and Chitimacha appear to share a focus-marking suffix *-š* while Choctaw-Chickasaw and Natchez appear to share *-ook*. Peripheral languages with focus-marking suffixes are Yuchi and Cherokee.

Atakapa and Chitimacha both have a focus-marking suffix *-š*. Atakapa *-š* appears suffixed to nouns, such as *yulc* (*yulš*), which acts as a type of definiteness marker:

(1) *ti-**š***
go-DEF
'the going' ?
(Swanton 1932: 17)

(2) *neš hišom-**š**-kin*
tree small-DEF-LOC
'in the small trees (bushes)'
(Swanton 1932: 11)

(3) *yul-**š***
writing-DEF
'the letter'
(Swanton 1932: 12)

The following shows the Chitimacha focus-marking suffix *-š*, which, as in Atakapa, is suffixed to the noun:

(4) *we ʔasi-**š** ha·nk ʔap ne-n-iʔi*
that man-FOC this-LOC here (come) water-out-3s
'That is how man came over here.'
(Hieber 2013, pers. comm.)

(5) *ha še·ni-**š** nenču· ʔati-i ni-n-šwi-čuki*
this pond-FOC too large aor.ind.3s to.water-out-MOVE.UP-1s.FUT
(Hieber 2013, pers. comm.)

A Choctaw focus marker is -*ook*, which Broadwell describes as "poorly understood" and tentatively glosses as "comparison" (2006: 80):

(6) *ofi-**hook**-ano isht iya-l-aačį-h*
dog-FOC-AC2 INST go-1p-IRR-TNS
'the dogs I'll take'
(Broadwell 2006: 81)

Natchez shares an identical focus marker *o·k*, which is either due to borrowing or due to the possibility that Natchez may be genetically distantly related to the Muskogean languages, though the former possibility seems more likely:

(7) *toMičo·k ʔele·he·-ʔi-lu-ha·t*
*toM-ič-**o·k** ʔel-ə·hə·-ʔi-lu-ha·t*
person-ERG-FOC see.PL/PL-PRT-AUX-NEG
'As for the people, they did not see them.'
(Kimball 2005: 448)

In Choctaw-Chickasaw, the suffix -*ooš* acts as a focus marker:

(8) *hattak-**ooš***
man-FOC
'the man (focus)'
(Broadwell 2006: 77)

(9) *Wak-**ooš** wọha.*
cow-FOC sound
'It's a cow that's lowing.'
(Haag and Willis 2001: 191)

In Biloxi, the marker -*di* is often suffixed to nouns in texts, particularly with nouns newly introduced into the narrative or discourse (Kaufman 2011). The suffix -*di* descends directly from Proto-Siouan *-*ri,* a focus marker also found in Hidatsa and Mandan (Boyle 2007, pers. comm.). This suffix is sometimes used for first mention when objects or characters are first introduced into a story, thus signaling new information, or FOCUS.

(10) *Skakana-**di** ewite-xti eyąhi yuhi yohi-yą.*

Ancient.of.Opposums-FOC early-INTENS 3s-arrive 3s-think pond-TOP
'The Ancient of Opossums thought he would reach a certain pond very early in the morning.'
(Dorsey and Swanton 1912: 26)

(11) *Ąyaa-**di** wax ni yukê*
person-FOC hunt walk MOVE
'Some people were hunting...'
(Dorsey and Swanton 1912: 65)

5.1.3 Topic.

In this dissertation, the term 'topic' refers to old, previously mentioned, or known information (what Prague school linguists call 'theme') (Payne 1997: 271). Therefore, *-yą* is a form of definite article that tends to occur most frequently when the noun to which it is suffixed has already been introduced into a story, thus marking old or already given information, or TOPIC, as the following examples from Biloxi show:

(12) *Ątatka-**yą** khu-ni ǫǫni e-tu xa.*
child-TOP 3.give-NEG PST 3.say-PL always
'always she did not give him the child' ('she never gave him the child'?)
(Dorsey and Swanton 1912: 43)

(13) *"Yamą na," e-di ąyaa-xohi-**yą***
no DECL.m 3s.say-ASRT person-old-TOP
'"No," the old woman saibid.'
(Dorsey and Swanton 1912: 67)

In the above examples, 'child' and 'old woman' were previously mentioned in the discourse.

The Choctaw-Chickasaw suffix *-aaš* indicates previous mention, in essence acting as a type of definite article, as was discussed earlier.

(14) *Hattak-Ø-**aaš**-at čaaha-h.*
man-COP-PREV-NOM tall-TNS
'The previously mentioned man is tall.'
(Broadwell 2006: 89)

5.1.4 Assertive-marking.

Atakapa, Biloxi, Chitimacha, and Natchez have assertive markers, with which a speaker may choose to add particular emphasis to a verb.

The following examples show the Atakapa assertive suffix *-š*:

(15) *šak-yon-**š**-ul-it*
person-call-ASRT-3subj.PL-PERF
'they called (him/them)'
(Swanton 1932: 10)

(16) *ini šak-nau-**š***
search PL-let-ASRT
'let them search'
(Swanton 1932: 13)

(17) *šoxmon iš-yam-**š**-ehe*
everything 1obj.PL-gather-ASRT-FUT
'we will (indeed) gather everything'
(Swanton 1932: 13)

Atakapa also has an emphatic suffix *-ne*:

(18) *n-yau-ta n-ok-**ne***
2s.obj-await-stand 2s.obj-come-EMPH
'I will expect you to come!'
(Swanton 1932: 12)

(19) *tsanuk miš-at pene-**ne***
horse give-PERF cure-EMPH
'She gave (him) a horse for curing her.'
(Swanton 1932: 13)

(20) *pel ha tsanuk-ki iteu ok-**ne***
far NEG horse-LOC travel come-EMPH
'It is not far to come by horse.'
(Swanton 1932: 14)

Atakapa *-ne* appears to correlate with Chitimacha *ne*. The Chitimacha particle *ne* is primarily used as the conjunction 'and' in Chitimacha (Hieber, 2013, pers. comm.), but it also occurs as an emphatic:

(21) *we huyu kamčin* ***ne***[22]
DEF turtle deer and
'the turtle and the deer'
(Swadesh 1939: 127)

(22) *na·kšbu* ***ne′*** *kaš ni gušmina?a′*
child also clam PVB eat
'the children too ate clams'
(Swadesh 1939: 128)

(23) *susbink pa·limičuy* ***ne′*** *himks geti ka·han*
gun shoot even 3s kill unable
'Even if you shot it with a gun, you could not kill it'
(Swadesh 1939: 129)

The Chitimacha particle carries "emphatic reference 'just, precisely.. [*sic*]'" (Swadesh 1939: 127). However, "[i]n the emphatic sense, the reason for the use of *ne* is not always clear. It is very common in negative sentences even where there is no strong reason for emphasis. Similarly, the use in positive sentences, through less common, is also not obviously called for. It seems that the degree of emphasis implied is rather mild and that the usage is largely 'stylistic'" (Swadesh 1939: 128):

We have seen the Biloxi focus marker *-di* attached to nouns, but the suffix *-di* also attaches to verbs. With verbs, *-di* shows more emphasis or immediacy and has been glossed as an 'assertive' marker (Kaufman 2011), as the following examples demonstrate:

(24) *Sǫǫnitǫǫni-k ǫha ąyaa ǫǫni ustax kanê-****di***
tar-ACC with man make stand.up EVID2-ASRT
'He made a tar baby [person] and stood it up there.'

[22] *-ne* "appears frequently in the formation of nouns, with which it has the aspect of an instrumental suffix and may be translated by the prepositions 'to' or 'for'" (Swanton 1929: 129). This seems to be a different suffix, however, from the *-ne* emphatic.

(Dorsey and Swanton 1912: 13)

(25) *Kąkǫǫni dǫhi tê dê-**di** ê-tu-xa*
trap see want go-ASRT they-say-always
'They say that he departed, as he wished to see the trap.'
(Dorsey and Swanton 1912: 184)

Chitmacha has similar assertive marking:

(26) *Kun čuw-g-**š** šeni-nk hup hi ni-čw-iʔi.*
indef go-PRT-ASRT pond-LOC to there water-MOVE.UP-3s
'Going and going some, he came there to a pond.'
(Hieber 2012, pers. comm.)

Natchez has three marked degrees of emphasis: *ya·* 'that,' *ka·* 'this,' and *ma·* 'that there,' the latter appearing to be the least emphatic of the three (Kimball 2005: 422). These are based on the deictics *ya·na*, *ka·na*, and *ma·na* (ibid.). Kimball calls these "exclamatory postverbs" (ibid.). Each of these is exemplified below:

(27) *ča·wiNčiya ʔi·Minu·k **ya·na***
ča·wiNči-ya-0 ʔi·ᴍ-ʔ-ni-w-k ya·na
deer-meat-ART-ABS be.tired.of-3PT-1STAT-AUX-CONN EMPH
'I am tired of deer meat!'
(Kimball 2005: 422-23)

(28) *mâ·h. tama·Lho-La toMa katitani·sa·t **ka·na***
mâ·h tama·L-ho-L-a-n toM-a-0
lo woman-virgin-ART-ABS man-ART-ABS
kat-ʔi-tani-·-0-sa·t ka·na
lack-PRT-DU-AUX-3dat-DAT-NEG EXCLAM
'Lo! The two girls never lack a man!'
(Kimball 2005: 423)

(29) *ʔeLhalawi.ta.N tama.L ʔawiti. kačassitanki **ma.na***
ʔeLhalawi.ta.N tama.L ʔawiti.-0 ka-čas-si-tan-ki-V ma.na
split-QT-AUX-MOD identical woman two-ABS PVB-stand-QT-DU-AUX-PHR.TRM EXCLAM
'two identical women stood there'
(Kimball 2005: 423)

Tunica has an emphatic suffix *-pa(n)* translated as 'too, also, even' (Haas 1946: 122):

(30) *ta'-ya-ku-**păn**, ʔuh-ka'li-n ʔun-ke'nì.*

DEF-deer-M-EMPH 3s.m-create-? 3s.M -?
'He created the deer, too.'
(Haas 1946: 122)

(31) *ko'tyuki-**păn**, sa'm-ʔahă-n.*
hominy-EMPH cook-NEG-INTER
'Hominy, even, is it not cooked?"
(Haas 1946: 122)

Tunica *-pa* thus correlates with Atakapa *-ne* and Chitimacha *ne*.

Focus and topic marking is weighted more heavily than certain other morphological features since discursive/pragmatic features are more embedded in the grammar of a language and are thus more difficult to borrow. Also, since focus and topic marking does not extend far into the LMV periphery, this can be considered a **strongly defining feature** of the LMV as a potential Sprachbund.

5.1.5 Prefix for indefinite animate subject or object marking, valence reducer.

A preverb or prefix meaning 'person' or 'people' is used in Atakapa, Choctaw-Chickasaw, and Natchez as a type of indefinite person or animate subject or object marker.

In Atakapa, the prefix is *šak-*:

(32) *yul-š **šak**-in ok*
letter- DEF INDF.AN-ask come
'the letter of invitation'
(Swanton 1932: 12)

The Choctaw word *oklah* 'people' is sometimes used for plural animate subjects:

(33) *Hitokooš čokfi **oklah** falaama-tok*
and:then rabbit INDF.PL meet-PST
'And then they met a rabbit.'
(Broadwell 2006: 41)

The Natchez indefinite animate prefix is *tah-*:

(34) ***tah***-*le·le·nal-ʔiš*
INDF.AN-burn.repeatedly-INF
'buckmoth caterpillar'[23]
(Kimball 2005: 434)

Peripherally, Nahuatl has a similar prefix for indefinite animate objects:

(35) *ni-**te**-tla-maka*
1s-INDF.AN-INDF.INAN-give
'I give it to someone'
(Lockhart 2001: 26)

Due to the relative scarcity of this feature in Native North American languages and in the periphery of the LMV, this can be considered a **strongly defining feature** of the LMV as a potential Sprachbund.

5.1.6 Prefix for indefinite inanimate object, valence reducer.

All languages have operations that adjust the relationship of semantic roles and grammatical relations in languages, using a range of structures for accomplishing this (Payne 1997: 169). In the LMV, a preverb or prefix is used as a valence-reducing operation. Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, and Ofo have valence-reducing prefixation. All of these languages, except Biloxi and Ofo, use a lexeme meaning 'thing, something' as a valence-reducing prefix. In the Siouan languages, Biloxi and Ofo, a special non-lexical prefix *(w)a-* is used. On the periphery, Quapaw, Yuchi, Apache, Coahuiltec, Nahuatl, and Totonac have similar affixation.

In Atakapa, the valence-reducing prefix is *šok-*:

(36) *šok-šil-kit*
INDF.OBJ-sew-CONT
'she was sewing (things)'

[23] Apparently so named in Natchez for its tendency to sting.

(Swanton 1932: 15)

(37) *šok-koi*
INDF.OBJ-speak
'chief' ('speaking things')
(Swanton 1932: 9)

The Chitimacha valence-reducing preverb is *ni*:

(38) ***ni*** *naki* *dempi*[24]
thing chicken.hawk killing
'the story'
(Hieber 2013: 6)

(39) ***ni*** *katš* *hamtši:k*
thing fortune having
'having (good) luck'
(Hieber 2013: 10)

The Choctaw valence-reducing prefix is ***naa*** - or ***nạn***–:

(40) ***nạn****-óffo-ʹ*
INDF.OBJ-plant-NZR
'plant'
(Broadwell 2006: 53)

(41) ***naa****-hóoyo-ʹ*
INDF.OBJ(SUBJ)-hunt-NZR
'hunter' or 'prey'
(Broadwell 2006: 53)

Example 41 demonstrate that Choctaw *nan-* or *naa-* can be ambivalent, since the preverb *naa-* can represent either the actor (hunter) or the patient (prey) (Broadwell 2006: 53). The Western Muskogean prefixes *nan-* and *naa-* likely derive from *nanta* 'what, something, someone.'

The Natchez valence-reducing prefix is *kin-*:

(42) *nokkinhantawąą*
nok*-kin-han-ta-w-aa-n*
PVB-INDF.OBJ-make-1s-AUX-INC-PHR.TRM
'I can work.'

[24] 'To tell a story' is literally 'to kill chicken hawks' (Hieber 2013: 6).

(Kimball 2005: 405)

Siouan languages have a prefix *wa-* (reduced to *a-* in Biloxi and Ofo), whose actual translation is murky, though it often can be translated as 'thing' or 'something' (i.e., an indefinite object prefix) and acts as a type of valence reducer (Rankin 2013, pers. comm.):

(43) ***a**-duska*
something-bite
'rat'
(Dorsey and Swanton 1912: 186)

Peripherally, Nahuatl and Totonac have indefinite inanimate object affixation. In Nahuatl the prefix is *tla-*:

(44) *ni-k-**tla**-maka*
1S-3S-INDF.OBJ-give
'I give him/her something.'
(Lockhart 2001: 26-27)

In Totonac, an affix *-nan* appears identical to Choctaw-Chickasaw *-nan*, except that the Totonac form is suffixed rather than prefixed:

(45) *ča**nan**kaɬ*
čan-nan-kan-la(ɬ)
SOW-INDF.OBJ-INDF.SUBJ-PERF
'someone planted (habitually), planting was done'
(MacKay 1999: 195)

It remains to be determined if borrowing of this form between Muskogean and Totonacan is indicated, but the correlation is intriguing, particularly in light of other such similarities discussed in this dissertation. In such case, since the Choctaw-Chickasaw affix appears to have an internal motivation from the lexeme for 'what' or 'thing' (see 40-41 above), if borrowing is indicated, it would likely be from Western Muskogean into Totonacan.

Due to the relative scarcity of this feature in Native North American languages and in the periphery of the LMV, the use of a valance-reducing prefix based on the word 'thing' or

'something' can be considered a **strongly defining feature** of the LMV as a potential Sprachbund.

5.1.7 Reference-tracking.

A reference-tracking device, often referred to as a Switch Reference (SR) system, is used, at least in part, to track the subject of consecutive clauses, primarily to determine whether a subject of a new clause is the same or different from the subject of an immediately preceding clause (Whaley 1997: 276).

Biloxi, Choctaw-Chickasaw, and Natchez have SR marking. Atakapa, Chitimacha, and MTL show no SR marking. Tunica allows two or more active verbs having the same subject to be linked together, the events expressed being either simultaneous or consecutive; Tunica also has a type of switch-topic marking indicating one sentence's dependence on a prior one. Data are insufficient for determining the existence of reference tracking in Ofo.

Peripheral languages with forms of reference tracking are Tonkawa, Kiowa, Comanche, and Coahuiltec. Three other Siouan languages of the northern Plains—Crow, Hidatsa, and Mandan—also have SR marking, although with markers non-cognate to Biloxi and to each other.

A SR system is particularly useful in languages with no third person marking, i.e., third person is Ø (zero-marked or null), in order to thus keep track of third person referents. Biloxi and Chickasaw-Choctaw, both with zero-marked third person pronouns, have SR marking.

The Biloxi markers are SS *hą* and different subject DS *ką*:

(46) *Ąsu-di čį-xti* ***ką*** *ąk-učučati ąk-pačo ąk-paxa* ***hą*** *ąktąhį.*
pine-TOP fat-INTENS DS 1s-split my-nose 1s-stick.in SS 1s-run
'That fat pine (branch), I will split it and put it in my nose and run (with it).'
(Dorsey and Swanton 1912: 67)

In example 46, the pine tree is the subject of the first clause, then the subject in the next clause changes to the Old Woman who sticks the pine branch into her nose and runs with it.

It is likely that the Biloxi SS SR marker *hą* evolved from this particle's use as a phrasal coordinator meaning 'and.' The origin of the DS marker is uncertain, though it exactly corresponds to the Choctaw DS marker *-ką*.

Choctaw markers for third person switch reference are *-kat* (SS) and *-ką* (DS):

(47) *John-at anokfilli-h pisačokma-**kat***
John-NM think-TNS good.looking-SS
'John thinks that he (himself) is good-looking.'
(Broadwell 2006: 269)

(48) *John-at anokfilli-h pisačokma-**ką***
John-NM think-TNS good.looking-DS
'John thinks that he/she is good-looking.'
(Broadwell 2006: 269)

In example 47, John thinks that he himself is good-looking, indicating use of the SS marker. In 48, however, John thinks someone else is good-looking, indicating use of the DS marker. When other than third person reference is involved (i.e., either first or second person), the Choctaw markers are *-ooš* (SS) and *-o* (DS):

(49) *Kaah sa-nna-haatok**ooš**, iskali' ittahobli-li-tok.*
car 1s-want-because:SS money save-1s-PST
'Because I wanted a car, I saved money.'
(Broadwell 2006: 263)

(50) *Kaah banna-haatok**o**, iskali' ittahobli-li-tok.*
car want-because:DS money save-1s-PST
'Because he wanted a car, I saved money.'
(Broadwell 2006: 263)

Choctaw has a second type of SS reference marking, using the suffix *-t* as a serial verb linker when each verb has the same subject or agent:

(51) *Holisso' hokmi-**t** ammohmiči-li-tok.*

paper burn-SS complete-1s-PST
'I completely burned all the papers.'
(Broadwell 2006: 207)

(52) *Bill-at itti' čą-**t** aya-h.*
Bill-SUBJ tree chop-SS go.along-TNS
'Bill went along chopping (down) trees.'
(Broadwell 2006: 219)

(53) *Apa-**t** ak-tahl-o-h.*
eat-SS 1s-complete-NEG-TNS
'I didn't eat it up.'
(Broadwell 2006: 205)

While "[t]he Choctaw construction bears a striking similarity to the clause chaining phenomena in several Papuan languages" (Broadwell 2005:218), the construction also bears strong similarity to the Turkic *-ip* clause-chaining suffix, indicating same-subject concordance, as this Uyghur example demonstrates:

(54) *Men tünügün bazaar-gha bër-**ip**, alma ël-**ip**, tamaq ye-**p**, öy-ge*
1s yesterday market-DIR go-SS apple take-SS meal eat-SS house-DIR
qayt-tim.
return-1s.PST
'Yesterday I went to the market, bought apples, ate a meal, (then) went back home.'
(Engesaeth et al. 2009: 220)

In both Choctaw and Uyghur, the final verb is the focus and takes the tense and person suffixes. As indicated above, Biloxi and Choctaw demonstrate similar DS marking.

Contra Watkins (1976: 36), the fact that SR systems are generally lacking in Siouan languages (with the exception of the northerly Siouan Mandan, Crow, and Hidatsa) suggests that the borrowing likely went from Muskogean into Biloxi rather than in the opposite direction.

Natchez employs three reference tracking devices: first is the suffix *-k*, which "indicates that one phrase has ended and another is to follow" (Kimball 2005: 445), in essence marking continuance of subject, theme, or topic:

(55) *ma·na toM-piš-ič-a, čop-a-p-ku-**k***
that.one man-2POSS-ERG-ART pluck-1OPT-2OBJ-AUX-CONN
'That one, your husband said to me, I will pluck you….'
(Kimball 2005: 445)

Second is the suffix *-Ṽ* indicating "that a sentence, which can be made up of many phrases, has come to an end, that there may or may not be a further sentence, and that if there is, there will be a shift in tone or focus from the previous sentence" (Kimball 2005: 445), thus acting as a type of different subject and/or different topic marker:

(56) *nuhka·wah ʔiyo· ka·šuhti·*
*nuhka·wah ʔiyo· ka·-šu-hti-**Ṽ***
silently elsewhere PST-QT-go.s-PHR.TRM
'He silently went elsewhere.'
(Kimball 2005: 447)

Third is a new-topic marker *-šu·*, which simultaneously occurs with the modal affix *-ne* 'when' (Kimball 2005: 415):

(57) *toM heMkup še-n-či-**šu·**-ne*
person widowed QT-IMP-dwell.s-NEW.TOP-MOD
'Now, it is said that there was once a widowed person dwelling there, and …'
(Kimball 2005: 415)

Tunica also has a suffix *-k* that acts as a "future subjunctive" (Haas 1946: 120), or irrealis marker. It thus acts as a type of subordination marker, similar to Chitimacha and Natchez *-k*, indicating a non-final sentence:

(58) *hon-uwi-k, ʔu-ni-sinani.*
come.down-3S.M-FUT 3S.M-tell-?
'They told him to come down' (that he should come down).
(Haas 1946: 120)

(59) *hihč-ʔaka-wi-k, ʔu-ni-koni.*
there-enter-3S.M?-FUT 3S.M-tell-?
'He told him to go in there' (that he should go in there).
(Haas 1946: 120)

Reference tracking is weighted more heavily than certain other morphological features since this feature is discursive/pragmatic in nature and thus is more imbedded in the grammar of a language and more difficult to borrow. Due to the relative scarcity of reference tracking in Native North American languages and in the periphery of the LMV, this can be considered a **strongly defining feature** of the LMV as a potential Sprachbund.

5.1.8 Positional verb auxiliaries.

Classificatory verbs of the LMV signal position classification of nouns: SIT, STAND, LIE, and MOVE. Positional verbs have been grammaticized in the Siouan languages as continuative aspect markers and proximal demonstrative determiners (Mithun 1999: 116). The positionals SIT, STAND, LIE, and MOVE occur as markers of continuative aspect in most if not all of the Siouan languages (Rankin 2004: 203). Atakapa, Biloxi, Choctaw, Ofo, and Tunica all use positionals in a similar manner, indicating possible borrowing between them. Similar positional verb usage also occurs in Nahuatl and Totonac.

Following are examples of positional auxiliary verb usage in the LMV languages:

(60) Atakapa
keu kam-š-kin-tu
sit protrusion-DEF-LOC-sit?
'I am (seated) paddling.'
(Gatschet and Swanton 1932: 61; Watkins 1976: 27)[25]

(61) Biloxi
Nihǫ ani dêxtowê nê.
cup water full STAND
'The cup is full of water.'
(Dorsey and Swanton 1912: 166)

(62) Chitimacha
wekt kas tuhjyi:kˀ peˀanki

[25] Watkins (1976) identified *kamškintu* only as 'paddle.' I analyzed it into its component parts.

we-t-k *kas* *tuhjte-:ik*ʔ *pe-*ʔ*e-nk-i*
DEM-REF-LOC back(PREV) stoop.down-PRTP be(horizontal)-3s-LOC-NZR
'when he had stooped down'
(Swadesh, unpublished notes)

(63) Choctaw-Chickasaw
Bill-at *ma* *binḭli*
SUBJ there sit(ANIM)-N
'Bill is over there.'
(Watkins 1976: 21)

(64) Ofo
b-ašĕ *nąki*
1-sit SIT
'I am sitting down.'
(Rankin 2002: 20)

(65) Natchez
ya· potkop kaʔašup kaʔepe·nakiyaku·š
ya· *potkop* *kaʔašup-Ø* *ka·ʔepe·-na-ki-ya-ku·š*
that mountain blue-ABS PVB-lie-3P-AUX-ART-ALL
'(where) that blue mountain is (lying)'
(Kimball 2005: 438)

(66) Tunica
*t-uruna-t*ʔ*e-ku* *ʔuna*
DEF-frog-large-M.S sit
'There is the bullfrog.'
(Watkins 1976: 26)

In many languages of the world the same lexical item can express both actual physical stance and can be used as an auxiliary. In Biloxi, however, physical stance and locative-existential predicates/verbal auxiliaries generally form two different sets of lexemes (see suppletive verbs, 5.2.1.8). The stance verbs used as independent verbs in Biloxi are *toho* ('lie'), *xêhê* ('sit'), *sḭhḭ* ('stand'), and *hine* and *ni* ('move'). Their grammaticized auxiliary counterparts are *mąki* ('lie'), *nąki* ('sit'), *nê* ('stand'), and *ąde* and *hine* ('move'). The form *hine* is used for both singular and plural while *ąde* has a suppletive plural form, *yuke*. *Ąde* is used for general movement and running while *hine* is for walking only. These auxiliary verbs SIT, STAND,

LIE, and MOVE form a discrete set of auxiliary verbs that often no longer specify actual physical position or movement but, rather, are used to express nuanced aspectual meanings. *Mąki*, *nąki*, and *nê* are used for both animates and inanimates, while *ąde* and *hine* are confined to use only with animates. *Mąki*, *nąki*, and *nê* share a common plural form *(h)amąki*, apparently a form of *mąki*, 'lie.' The origin of these positionals is uncertain, but it appears that *mąki* may be related to the word *(a)mą*, 'land' or 'earth,' and *ąde* seems to incorporate the word for 'go' (*ą* ? + *de* [perhaps *dêê*] 'go').

The Chitimacha positional verbs are *hi(h)* 'neutral,' *ci(h)* 'standing,' and *pe(h)* 'lying.' What is unique about the Chitimacha positional system is that the connotation of a positional is more important than the denotation (Watkins 1976: 28). The horizontal positional *pe* connotes disrespect while *ci* connotes respect (ibid.).

In Tunica, nouns are also classified into three positions: standing (*ka'ˀura* < *ka'li* 'to stand' + *ˀura* 'lies' [lit. stand-lie]), sitting (*ˀu'na*), and lying (*ˀu'ra*) (Haas 1946: 111). "Although the choice of auxiliary is in certain cases apparently arbitrary, it is found to depend in large part on a combination of the features of gender and position" (ibid.: 112). Human or non-human animate nouns can take any of these positions as their characteristic form of embodiment allows:

(67) *t-o'nĭ-ku, ˀurá*
DEF-man-MASC.SG LIE
'There is the man (in a lying position).'
(Haas 1946: 110)

(68) *ta'-să-ku, ˀuná*
DEF-dog-MASC.SG sit
'There is the dog (in a sitting position).'
(Haas 1946: 110)

Certain non-human elongated animates, as fish, snakes, and alligators, are always classified in the horizontal position:

(69) *ta′-nară-ku, ʔurá*
DEF-snake-M.SG lie
'There is the (lying) snake.'
(Haas 1946: 110)

Certain other non-human animates, as frogs, birds, and insects, are always classified in sitting position:

(70) *t-e′hkuna-ku, ʔuná*
DEF-mosquito-M.SG sit
'There is the (sitting) mosquito.'
(Haas 1946: 110)

Inanimate nouns that have a characteristic erect position use the 'standing' classifier:

(71) *ta′-hkă-ku, ka′lʔurá*
DEF-corn.plant-M.SG STAND.LIE
'There is the (standing) corn plant.'
(Haas 1946: 111)

Atakapa appears to have a correlation to the Tunica STAND.LIE positional form, which may be due to contact:

(72) *yil lat himatol u ta-tixi n ta-at ha išat pam-lik-š mon*
day three four or STAND.LIE and stand-PST his head beat-mash-ASRT all
'For three or four days he lie there with his head all beaten and mashed in.'

Tunica abstract nouns are classified as supine, or 'lying':

(73) *hi′nahkŭn, la′hon sa′hkŭn, ʔará, ha′tikàn*
now morning one LIE again
'Now there is one morning (left for you to do it) again.' ('Now one morning lies again.')
(Haas 1946: 111)

The following example is from the peripheral Nahuatl:

(74) *wetska-tikak*
laugh-stand
's/he is (standing) laughing'

(Lockhart 2001: 39)

(75) *ti-koč-tok*
2-sleep-lie
'you are (lying) sleeping'
(Lockhart 2001: 39)

And from the peripheral Totonac:

(76) *ut ɬtata-ta-wila*
3 sleep-INC-seated
's/he sleeps (sitting)'
(MacKay 1999: 225)

(77) *hun-čiwiš ta-nuu-maa-la(ɬ)*
DET-stone INC-inside-lie-PERF
'the stone is (lying) inside'
(MacKay 1999: 225)

It is worth noting that the positionals in both Nahuatl and Totonac indicate a progressive or ongoing state or action, just as positionals do in the LMV.

The ubiquitous occurrence of positional auxiliaries in the LMV and their relative absence in the periphery makes this a **strong determining feature** of the LMV as a Sprachbund.

5.1.9 Verbal number suppletion.

For this section, the definition of suppletion includes cases that satisfy either of the following criteria: (1) exceptions to very productive derivational patterns, and (2) exceptions to established agreement patterns (Veselinova 2013). The verbal suppletion treated here relates to nominal arguments of the verb, and the verb agrees with its arguments. All languages of the LMV, except MTL and Natchez, have verbal number suppletion in relation to nominal arguments. This feature is further limited in the region by being primarily used in relation to the positional auxiliaries STAND, SIT, LIE, MOVE (see 5.2.1.6), and, in languages like Tunica, only these auxiliary verbs show suppletion while other verbs in the language do not (Haas 1946: 40).

The Atakapa singular positional verb forms and their suppletive plural equivalents are (Swanton 1932):

	singular	plural
STAND	*to* or *ta*	*tsot*
SIT	*ke*	*nul*
LIE	*tixt*	*yoxt*

The Biloxi forms are (Dorsey and Swanton 1912):

	singular	plural
STAND	*nê*	
SIT	*nąki*	*(h)amąki*
LIE	*mąki*	
MOVING	*ąde*	*yuke*

In Chitimacha, the conjugations of auxiliary (positional) verbs "are complicated and irregular, so that the simplest account is a list of the forms" (Swadesh 1939: 32). These forms are:

	singular	plural
STAND	*ci(h)*	
SIT	*hi(h)*	*na(h)*
LIE	*pe(h)*	

Chitimacha, like Biloxi, neutralizes the singular auxiliary forms to a single plural form, *na(h)*.

The Choctaw-Chickasaw forms include a dual as well as plural form and animate and inanimate forms of SIT:

	singular	dual	plural
STAND	*hikiya*	*hiili*	*(hi)yoh-*
SIT (anim.)	*binili*	*chiiya*	*binoh-*
SIT (inanim.)	*talaya*	*taloha*	*taloh-*
LIE	*ittola*	*kaha*	*kah-*

Choctaw-Chickasaw has both animate and inanimate forms for SIT.

In Tunica, suppletion is "a process not used by any other word-class of the language" (Haas 1946: 40). Forms are:

	singular	dual	plural
STAND	*kali*	*?*	*?*
SIT	*ʔuna*	*ʔunana*	*ʔukʔɛra*
LIE	*ʔura*	*ʔurana*	*naʔara*

No such suppletion is evident in MTL. Verb number suppletion does not occur in Natchez, and, unfortunately, we have insufficient data to make any determination about verb number suppletion in Ofo.

Other languages of North America that have similar suppletion are Ute, Cahuilla (both Uto-Aztecan), Passamaquoddy-Maliseet (Algonquian), Slave (Athapaskan), and Northern Tepehuan. Other languages around the world having a similar form of suppletion include: Shipibo-Konibo (Panoan), Wari, and Canela-Kraho (Jean) in South America, Samoan (Austronesian), Ainu (Isolate), Ket (Isolate), Burushaski (Isolate), Ingush (North Caucasian) in Asia, Kunama, Krongo, Murle (all Nilo-Saharan), and !Xun (Khoisan) in Africa.

Since nominal verbal suppletion does not extend far into the LMV periphery, and, in fact, is quite rare crosslinguistically, this can be considered a **strongly defining feature** of the LMV as a potential Sprachbund.

5.2 Least relevant morphological features in determining a Sprachbund.

These features are weighted less than other features since they:

(1) geographically extend well beyond the LMV, and/or

(2) occur in only one or two languages of the LMV and are thus not pervasive enough within the LMV (as here delineated) to be considered an LMV feature, and/or

(3) are universal enough crosslinguistically that they are of little value in defining the LMV as a Sprachbund.

These features are:

- evidentiality
- overtly-marked case system
- definite article
- demonstrative precedes noun
- circumfixed negative construction
- reduplication in nominal stems for plurality
- reduplication in verbal stems for plurality
- plurality in pronouns
- duality in pronouns
- plurality in nouns
- duality in nouns
- locative-directional affixes
- subject person prefixes
- subject-object-verb (SOV) constituent order
- quinary number marking
- masculine/feminine gender distinction
- inclusive/exclusive plural pronouns

These lesser weighted features will be addressed in the order given above.

5.2.1 Evidentiality.

Evidential, also called ‘verificational’ and ‘validational’ (Aikhenvald 2006: 320), marking, indicates source of information, i.e., whether the information relayed by a speaker was gained from personal (firsthand) experience or from secondary (non-firsthand) reporting or inference. While every language has some lexical means of referring to information source, e.g., the English words “reportedly” or “allegedly,” not all languages grammatically encode or require a speaker to indicate source of information (Aikhenvald 2006: 320). While many of the most familiar Indo-European (IE) languages, such as English and French, lack evidential marking (Aikhenvald 2004: 3), evidentials appear in many non-IE languages, including those of the Caucuses, Central Asia, and Siberia, as well as in many indigenous American languages, including those of the LMV.

Omitting an evidential marker among languages that employ them can result in an ungrammatical and even “highly unnatural” sentence (Aikhenvald 2006: 320). “Languages with evidentials fall into a number of subtypes, depending on how many information sources acquire distinct grammatical marking” (ibid.) so that, for instance, some languages have just two choices: *firsthand* versus *nonfirsthand and everything else*. Other languages may have three or more choices, including an *inferred* evidential, in which case an event is inferred based on physical evidence (e.g., it [must have] rained, since the ground is wet).

Biloxi and Choctaw-Chickasaw have at least three subtypes of evidential marking: firsthand, nonfirsthand, and inferred. No other LMV languages show evidential marking per se, although quotative markers, often subsumed under evidentiality, appear in Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, and Tunica. Such marking appears to be absent from Atakapa and the MTL pidgin. It is possible that the Biloxi evidentiality system was influenced through contact with Choctaw-Chickasaw.

Evidential marking is fairly widespread among Native American languages and occurs peripherally in Quapaw (Siouan), Yuchi (Isolate), Caddoan, Tonkawa (Isolate), Apache (Athapaskan), Comanche (Uto-Aztecan), Cherokee (Iroquoian), the Plains (Algonquian, Siouan), the Great Basin (Northern and Southern Paiute, Washo), and the Southwest (Papago, Apachean, Taos) (Sherzer 1976). It also occurs in Totonac (Totonacan).

The LMV would not be the first language area to share the concept of evidentiality marking. We have seen, for instance, that the Balkan Sprachbund likely received evidential marking from Turkish, the only non-Indo-European language to participate in that Sprachbund. An example of inferred evidentiality is from Matses, a Panoan language of South America:

(78) *nënëchokid-n ak-**ak***
shaman-ERG kill-REC.PST.EVID.INFER
'A shaman (must have) killed him.'
(Aikhenvald 2012: 254)

A similar form of inferred information evidential appears in Turkish (Turkic):

(79) *Yer-ler ıslak. Yağmur yağ-**miş**.*
floor-PL wet.3P rain fall.3S-EVID.INFER
'The floors are wet. It must have rained.'
(Gül 2006: 180)

Due to the pervasive nature of evidential marking in Native North America, including in the periphery of the LMV, it has not been weighted more heavily than certain other morphological features, and evidentiality cannot be considered a defining characteristic of the LMV as a Sprachbund.

5.2.2 Overtly marked case system.

All languages of the LMV, except for MTL, have case-marking suffixes. These suffixes, however, unlike those of case-marking languages like Latin or Russian, are not consistently

overtly marked, indicating that these systems are *differential*, being more discursive or pragmatic in nature and perhaps more in line with the discussion in 5.2.1. "Choctaw speakers tend to interpret NPs [noun phrases] with overt accusative marking as topical" (Broadwell 2006: 74).

Case systems also occur in Comanche, Tonkawa, Dhegiha Siouan, in the Great Basin (Uto-Aztecan and Washo), in the Southwest (Yuman and Hopi), and in California. "Tonkawa has the most elaborate case system in the Plains, with suffixes marking nominative, accusative, genitive, instrumental, conjunctive, and two dative cases" (Sherzer 1976: 177). Case systems do not occur in Algonquian or Iroquoian.

The following is an example of case from Rumsen Ohlone (Penutian) in central California:

(80) *Ka-**s** sennen palakans-akay 'uyk uuyakaw 'immun ka čewwor ṭuuṭk*
1S-ACC bite mosquito-PL yesterday evening when 1S sit outside
*ka taccon činyawkw-akay xukkar čiiwo-kay-**om**.*
1S watch child-PL play goat-PL-COM/INST
'Mosquitoes were biting me yesterday evening while I was sitting outside watching the children play with the goats.'
(Harrington n.d. 2:067:0033a:1:7)

Note that the first person singular pronoun bears the *-s* suffix, indicating that it is in the accusative case, and 'with the goats' bears the *-om* suffix, indicating comitative, or instrumental, case.

The following Uyghur example demonstrates the use of case in the Turkic languages of Central Asia:

(81) *Ürümchi-**din** Ghulji-**gha** nečče kilomëtr?*
Ürümchi-ABL Ghulja-LOC how.many kilometer
'How many kilometers (is it) from Ürümchi to Ghulja?'
(Engesaeth et al. 2009: 66)

In Uyghur, the origin city bears the ablative case suffix *-din*, while the destination city bears the locative case suffix *-gha*.

Russian (Indo-European) provides another example:

(82) *k yug-**u** ot Minsk-**a***
to south-DAT.M from Minsk-GEN.M
'to the south of Minsk'
(Thompson 2006: 821)

In Russian, the lexemes *yug* 'south' and the name Minsk, both masculine nouns, sport masculine dative and genitive case endings respectively. Indo-European languages, with the primary exception of English, are renowned for their case systems, as anyone who has studied Russian, German, Greek, and Latin knows.

Due to this feature's crosslinguistic commonality, it is rendered irrelevant in determining the LMV a Sprachbund.

5.2.3 Definite article.

Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, and Tunica all have forms of definite article. (There is no extant data for articles in Ofo.) In Atakapa, Biloxi, Choctaw-Chickasaw, and Natchez the definite article is a suffix, whereas in Tunica it is a prefix. Peripheral languages with definite articles are Quapaw, Yuchi, Timucua, Totonac, and Mayan.

Definite articles may, at times, overlap with focus and topic marking (see 5.2.1.1). "A number of researchers … have observed that in various languages expressions referring to topics are necessarily definite" (Gundel 1988: 213).

(83) Coptic (Afroasiatic)
***p**-rome*
DEF.SG.M-man
'the man'

(Lambdin 1983: 2)

(84) Hawaiian (Austronesian)
ka *hanohano*
DEF glory
'the glory'
(Pukui and Elbert 1986: 106)

(85) Romanian (Indo-European)
*suflet-**ul***
soul-DEF.SG.M
'the soul'
(Schönkron 1991: 214)

Note that in Coptic (modern Egyptian) the definite article is prefixed to the noun, while in Romanian, the definite article is suffixed, an effect of membership in the Balkan Sprachbund in which Bulgarian and Albanian also have suffixed articles (though not Greek).

Due to this feature being crosslinguistically common, it is rendered irrelevant in determining the LMV a Sprachbund.

5.2.4 Demonstrative precedes noun.

Demonstratives precede the noun in all LMV languages with the exception of Biloxi, Choctaw-Chickasaw, and MTL. Since, for the most part, other Siouan languages have demonstratives preceding nouns, it is possible that Biloxi borrowed this demonstrative constituent order from Choctaw-Chickasaw or MTL.

(86) Turkish (Turkic)
bu *gazete-yi*
this newspaper-ACC
'this newspaper'
(Kornfilt 1997: 312, 315)

(87) Nar-Phu (Sino-Tibetan)
cû *nâwar*
this cat
'this cat'

(Noonan 2003: 348)

(88) Mongolian (Mongolic)
en avtobus
this bus
'this bus'
(Sanders and Bat-Ireedui 1996: 58)

Due to this feature being crosslinguistically common, it is rendered irrelevant in determining the LMV a Sprachbund.

5.2.5 Circumfixed negative construction.

Biloxi[26], Ofo, and Choctaw-Chickasaw have a periphrastic, or circumfixed, negative construction. In both the Biloxi and Ofo negative constructions the prefixed element (*ka-* and *ki-* respectively) appears to be stylistic or speaker-centered and is not required.

A circumfixed negative construction also occurs in Tutelo, another Ohio Valley Siouan (OVS) language, indicating that this negation paradigm is an internal development within the OVS branch of Siouan. Given the rather complex structure of Choctaw-Chickasaw circumfixed negation, this feature most likely arose internally in both language families (OVS and Muskogean) and is thus not indicative of borrowing.

Double marking of negation is not common nor is it rare (Whaley 1997: 228). Its occurrence is found in standard French, Zulu, and Khmer:

(89) French (Indo-European)
Pierre ***ne*** *parle* ***pas*** *français*
Pierre NEG speak.3S NEG French
'Pierre does not speak French.'
(Whaley 1997: 227)

[26] Although Dryer (2013) notes that Biloxi has a negative particle (marked by a blue dot), Biloxi has both a particle and affixation, thus in reality categorizing it as varying between negative word and affix(es), marked with a purple dot, though the circumfixed negative affixation is predominant.

(90) Zulu (Niger-Congo):
angi-*bhem*-***i***
1S.NEG-smoke-NEG
'I don't smoke.'
(Wilkes and Nkosi 1996: 110)

(91) Khmer (Austroasiatic)
kñom ***mɨn*** *trəw-kaa kafei* ***tee***
1S NEG want coffee NEG
'I don't want any coffee.'
(Hoffman 1970: 23)

Given the relative non-rarity of negative circumfixation crosslinguistically, this feature is not a strong determining feature of the LMV as a Sprachbund.

5.2.6 Reduplication in nominal stems for plurality.

Reduplication, both nominal and verbal, is "a widely used morphological device in a number of the world's languages" (Rubino 2013). Nominal reduplication for plural or distributive occurs in the LMV in Atakapa, Biloxi, and Natchez. Reduplication of nominal stems also occurs in the Great Basin (Uto-Aztecan, Washo), the Plains (Siouan, Comanche, Tonkawa), and the Southwest (but only in Uto-Aztecan Papago, Hopi, and Taos), thus being particularly rare in the Southwest (Sherzer 1976: 144).

Contra Rubino, who indicates that "no productive reduplication" occurs in Totonac (2013), MacKay provides several examples of reduplication, both nominal and verbal, in Totonac (1999: 374). This feature also occurs in Nahuatl and Mayan.

Reduplication in nominal stems for plurality is crosslinguistically frequent, as these examples demonstrate:

(92) Pangasinan (Austronesian)
bal-báley (< *báley* 'town')
town-REDUP
'towns'

(Rubino 2001: 540)

(93) Khmer (Austroasiatic)
proh-proh (< *proh* 'man')
man-REDUP
'several men, men in general'
(Hoffman 1970: 185).

Due to this feature extending well beyond the LMV, it is rendered irrelevant in determining the LMV a Sprachbund.

5.2.7 Reduplication in verbal stems.

Verbal reduplication often indicates iterative (repetitive) actions. Verbal reduplication occurs as such in Atakapa, Biloxi, Choctaw-Chickasaw, and Natchez. In Tunica, reduplication is employed only in auxiliary verbs and is not used elsewhere in the language (Haas 1946). Limited use of verbal reduplication is noted to occur in Chitimacha.

Peripherally, verbal reduplication occurs in Eastern Muskogean, Comanche (Uto-Aztecan), Yuchi (Isolate), Nahuatl (Uto-Aztecan), and Mayan. Crosslinguistically, verbal reduplication is quite common, as these examples demonstrate:

(94) Alamblak (Sepik)
*hingna-**marŋa**-ba-**marŋa**-më-r*
work-REDUP-PART-straight-PST.REM-3S.M
'He worked very well.'
(Bruce 1984)

(95) Paumarí (Arauan)
*a-o**dora**-**dora**-bakhia-loamani-hi*
1PL-gather.up-REDUP-frequently-really-theme
'We keep gathering them.'
(Chapman and Derbyshire 1991)

Due to this feature extending well beyond the LMV and being crosslinguistically common, it is rendered irrelevant in determining the LMV a Sprachbund.

5.2.8 Plurality in pronouns.

Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, and Ofo have plural pronouns. Tunica has both dual (see 5.3.4) and plural pronouns. Pronominal plural occurs in all Northeast languages and is "a family trait of Algonquian, Iroquoian, and Siouan" (Sherzer 1976: 196).

Given the ubiquitous nature of pronominal plurality marking throughout North American languages, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.9 Duality in pronouns.

Tunica is the only LMV language to have dual as well as plural pronouns, thus following Greenberg's Universal 34: "No language has a dual unless it has a plural" (1961[1939]: 94). Dual pronouns occur in the Great Basin (Uto-Aztecan and Washo) and in the Southwest (Apachean, Zuni, Acoma, Taos) (Sherzer 1976). This is a family trait of Iroquoian (Sherzer 1976: 196), and it occurs in Cherokee. It is possible that Tunica developed this feature through contact with Great Basin or Southwestern languages.

Since Tunica is the only LMV language to have pronominal dual, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.10 Plurality marking in nouns.

Biloxi, Chitimacha, and Tunica have nominal plural marking. Atakapa, MTL, and Natchez do not show plural marking on nouns. Data are insufficient to determine nominal plurality in Ofo. Choctaw-Chickasaw generally does not show plural marking on nouns, but, at

least in Chickasaw, "[a] few complex nouns that include verb stems that change depending on the number of their subject do have singular and plural forms" (Munro and Willmond 1994: lv).

Nominal plural occurs ubiquitously in the Southwest, and "[a]ll Algonquian and Iroquoian languages of the Northeast have an overtly marked nominal plural" (Sherzer 1976: 196). Nominal plural marking occurs in many other languages of the world, as in:

(96) Hawaiian (Austronesian)
nā *lani*
DEF.PL chief
'the chiefs'
(Pukui and Elbert 1986: 257)

(97) Coptic (Afroasiatic)
m-peiwe
DEF.PL-sky
'the heavens'
(Lambdin 1983: 2)

Given the ubiquitous nature of nominal plurality marking crosslinguistically, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.11 Duality in nouns.

Tunica is the only LMV language to show a dual form of nouns.

Dual noun-marking occurs peripherally in Kiowa, Comanche, Northern Paiute, Shoshone, and Hopi. Tunica may have developed this feature through contact with Plains or Southwestern languages.

Since this feature occurs in only one LMV language, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.12 Locative and directional affixes.

All LMV languages with the exception of MTL have locative and directional affixation. Locative and directional affixation also occurs in the Great Basin and in the Southwest (Yuman, Papago, Apachean).

Locative-directional affixation is common crosslinguistically, as the following examples show:

(98) Burushaski (Isolate)
*šahar-**a***
town-LOC
'to town'
(Grune 1998: 8)

(99) Zulu (Bantu)
e**-kiši-**ni
LOC-kitchen-LOC
'in, to, from the kitchen'
(Wilkes and Nkosi 1996: 127)

Example 99 shows Zulu circumfixed locative-directional affixation.

Since locative and directional marking through affixation is ubiquitous throughout North American languages, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.13 Subject person prefixes.

All LMV languages, like the majority of North American languages, and again with the exception of the MTL pidgin (which has only independent pronouns), have subject person affixation. However, both Atakapa and Tunica suffix subject (agentive) pronouns while object (patientive) pronouns are prefixed. In Choctaw-Chickasaw, only the first person agentive pronoun is suffixed while all other person pronouns are prefixed[27]. Actor/subject affixes precede patient/object affixes except in Atakapa and Tunica.

[27] As Haas demonstrated, Koasati, an Eastern Muskogean language, has three pronominal paradigms used according to the particular verb class, one of which has prefixed pronouns except for first person singular, which is suffixed,

Chitimacha has subject/agent pronouns only for first person, while second and third persons, i.e., non-first persons, are unmarked. This runs counter to Greenberg's Universal 42, stating that "[a]ll languages have pronominal categories involving at least three persons and two numbers" (1961[1939]: 96).

Both the Muskogean and Siouan language families share the feature of zero-marking of third person singular pronoun prefixes, a feature that also occurs in Nahuatl (Uto-Aztecan).

Since subject prefix marking is ubiquitous among Native North American languages, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.14 Subject-object-verb (SOV) constituent order.

All languages in the LMV, with the sole exception of MTL, are of SOV constituent order. While this is an areal feature, it is by no means unique to the area. Many languages of the eastern United States, particularly those of the Siouan, Iroquoian, Caddoan, and Muskogean families, have SOV constituent order. For this reason, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.15 Quinary number marking.

All but one of the LMV languages has number systems that are semi-quinary (based on 5) in nature (see Table 5.1). Atakapa is the only LMV language to have a semi-dual (based on 2) number system.

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just as in the Choctaw-Chickasaw case (1969b: 54-55). Such a paradigm shift from suffixed to prefixed pronominals is thus an internal Muskogean development rather than being due to the effects of contact with, say, Siouan languages like Biloxi and Ofo, in which all pronominals are prefixed.

TABLE 5.1: Numbers in the LMV.

	Biloxi	Ofo	Tunica	Atakapa	Chitimacha	Natchez	Western Muskogean	MTL
1	s?sa	nufha	sa'hku	tanuk / hannik	unk'u	wiitąą	ačafa	ačofa
2	n?pa	nųųpha	i'li	tsik / happalst	(h)upa, (h)upkamiig	awitii	tuklo	tokolo
3	dani	taani	e'nihku	lat	kaayči	neetii	tučina	točena
4	topa	toopa	ma'nku	himatol / tsets	meša	kinawatii	ušta	ošta
5	ksani, ksą	kifą	si'nku	nit	husa, huskamiig	išpitii	ta?api	ta?ape
6	akaxe	akape	ma'sahki	latsik / latst, talst	hatka(m), hatkamiig	lahanah	hannali	hanale
7	n?pahudi	fakumi	ta'yihki	pax(e) / pagho	kišta, kištkamiig	ąkwah	untuklo	ontokolo
8	dąhudi	patani	ti'sihku	himatol tsik / tsikhuiau	keeta	apkatupiš	untočena	ontočena
9	ckanê	kištateška	to'hkusa'hku	woš išol han / tekhuiau	mišta	witipkatupiš	čakali	čakale
10	ohi	iftaptą	mi'ču sa'hku	wošpe / hiising	heytši	ooko	pokoli	pokole
11	ohis?saxêhe	iftaptą nufha	mi'ču sa'hteya sa'hku	woš pe ha(l) tanuk / halk hannik	heytši unk'u patniš	ooko wiitanišiiwic	pokoli auah ačafa	pokole awa čafa
12	ohin?paxêhe	n/a	mi'ču sa'they 'i'li	woš pe ha(l) tsik / halk happalst	heytši hupa patniš	ooko awitišiiwic	pokoli auah tuklo	pokol(e) awa tokolo
13	ohidanaxêhe	n/a	mi'ču sa'htey 'e'nihku	woš pe ha(l) lat / halk lat	heytši kaayči patniš	ooko neetišiiwic	pokoli auah tučina	pokol(e) awa točena
14	ohitopaxêhe	n/a	mi'ču sa'hteya ma'nku	woš pe ha(l) / halk tsets	heytši meša patniš	ooko kinawitišiiwic	pokoli auah ušta	pokol(e) awa ošta
15	ohiksanaxêhe	n/a	mi'ču sa'hteya si'nku	woš pe ha(l) himatol, halk nit	heytši husa patniš	ooko išpitišiiwic	pokoli auah ta?api	pokol(e) awa ta?ape
16	ohiakaxpaxêhe	n/a	mi'ču sa'hteya ma'sahki	woš pe ha(l) nit / halk latst (talst)	heytši hatka(m) patniš	ooko lahanawišiiwic	pokoli auah hannali	pokol(e) awa hanale
17	ohin?pahuxêhe	n/a	mi'ču sa'hteya ta'yihku	woš pe ha(l) latsik / halk pagho	heytši kišta patniš	ooko ąkwahišiiwic	pokoli auah untuklo	pokol(e) awa ontokolo
18	ohidąhuxêhe	n/a	mi'ču sa'hteya ti'sihku	woš pe ha(l) tsikhuiau, halk tsikhuiau	heytši keeta patniš	ooko apkatupišiiwic	pokoli auah untočena	pokol(e) awa ontočena
19	ohickanaxêhe	n/a	mi'ču sa'hteya to'hkusa'hku	woš pe ha(l) himatol tsik / halk tekhuiau	heytši mišta patniš	ooko witipkatupišiiwic	pokoli auah čakali	pokol(e) awa čakale
20	ohi n?pa	iftaptą nųpha	mi'ču 'i'li	woš pe tsik / halk hiising	heytši 'upa	ookahp	pokoli tuklo	pokol(e) tok(o)lo
30	ohi dani	iftaptą taani	mi'ču e'nihku	woš pe lat / hiising lat	heytši kaayči	ookneetii	pokoli tučina	pokol(e) točena
40	ohi topa	iftaptą toopa	mi'ču ma'nku	woš pe himatol / hiising tsets	heytši meša	ookkinaw	pokoli ušta	pokol(e) ošta
50	ohi ksą	iftaptą kifą	mi'ču si'nku	woš pe nit / hiising nit	heytši husa	ookišpitii	pokoli ta?api	pokol(e) ta?ape
60	ohi akaxpê	iftaptą akape	mi'ču ma'sahki	woš pe latsik / hiising latst	heytši hatka(m)	ooklahanah	pokoli hannali	pokol(e) hanale
70	ohi n?pahudi	iftaptą fakumi	mi'ču ta'yihku	woš pe pax(e) / hiising pagho	heytši kišta	ookąkwah	pokoli untuklo	pokol(e) ontokolo
80	ohi dąhudi	iftaptą patani	mi'ču ti'sihku	woš pe himatol tsik / hiising tsikhuiau	heytši keeta	ookapkatupiš	pokoli untučina	pokol(e) ontočena
90	ohi ckane	iftaptą kištateška	mi'ču to'hkusa'hku	woš pe woš išol han / hiising tekhuiau	heytši mišta	ookwitipkatupiš	pokoli čakali	pokol(e) čakale
100	tsipa	iftapta nufha	po'lun sa'hku	hiyen pon / hehin pon	puup 'unku	puup	ta?apa	ta?epa, čokpe
1000	tsipa įcya	ącaaki keehi	po'lunt'e sa'hku	hiyen pon tsakop / hehin pon ioliš	puup 'axinjada	puuptoMšii?	ta?apa sipokni	ta?epa sepe, čokpe čoba čafa

Biloxi-Ofo and Choctaw-Chickasaw well demonstrate the quinary (base 5) system. Biloxi and Choctaw-Chickasaw repeat the stems for 'two' and 'three' in the numbers for 'seven' and 'eight' (see Table 5.1). (Calques, or semantic borrowings, seem apparent between Biloxi and Choctaw-Chickasaw in the numbers for 'seven' and 'eight'; see Table 5.1). Ofo repeats the stem for 'three' in 'eight' but, unlike Biloxi, does not show repetition in 'seven.'

These systems are termed semi-quinary in nature since they are not fully quinary. A fully quinary number system is clearly expressed, for example, in Khmer (Austroasiatic) in which numbers run 1, 2, 3, 4, 5, 5+1, 5+2, 5+3, 5+4, 10[28]. As seen above, only the remnants of this fully quinary system remain in Biloxi and Choctaw-Chickasaw, in which only certain numbers, i.e., seven and eight, retain quinary features. This is because the tendency of quinary number systems is toward the establishment of another and larger base with the formation of a number system in which both systems are used (Conant 1896). The peripheral Nahuatl (Aztec) distinctly shows a combination of two number systems, the quinary and vigessimal (base 20), the latter system kicking in after the number 20.[29]

Atakapa shows a type of dual (base 2) system, since the word for 'six' is composed of the numbers 'three' and 'two' (3 x 2 = 6) and the number 'eight' is composed of the numbers 'four' and 'two' (4 x 2 = 8). Atakapa shows two sets of numbers from purportedly two main dialects, Western and Eastern (Swanton 1932: 21) (in Table 5.1, the left side of Atakapa is Western, the right side is Eastern). Oddly, however, the numbers appear drastically different for supposedly being mere dialects of each other, making one wonder whether the numbers may actually be

[28] Khmer numerals from 1-10 are: muəy, pii, bəy, buən, pram, pram**muəy**, pram**pil**, pram**bəy**, pram**buən**, dap (Hoffman 1970: 15). Note the repetition of numerals 1-4 suffixed to the number 5 to indicate numbers 6-9, demonstrating a fully quinary system.

[29] Nahuatl numerals from 1-10 are: ce, ome, yei, nahui, macuilli, chiqua**ce**, chic**ome**, chicu**ei**, chiuc**nahui**, matlactli. This combination of number systems supports a probable northerly Nahuatl origin in a region where quinary number systems flourished before a southerly migration to Mexico, where vigessimal number systems abound, as in Mayan.

from completely different languages. The Atakapa number ‘nine’ is literally ‘hand(s) little finger minus.’ This matches the Plains Sign Language finger-counting system where both hands are shown with all fingers extended but one pinky finger (see Fig. 5.2).

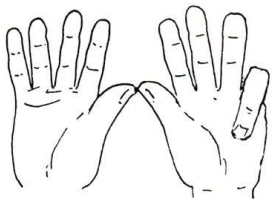

FIG. 5.2: Plains Sign Language number nine (from Tomkins 1969(1926): 22).

Tunica likewise seems to correlate the number nine, which is literally ‘strike together one’, with a type of sign language, but apparently not the Plains Sign Language as was apparently used by the Atakapas. To my knowledge, there has not been a comprehensive examination of oral counting systems or other spoken language patterns with visual sign language systems such as the Plains Sign Language; such a correlation awaits further study.

Numbers will be further examined in Chapter 6 in regards to lexical and semantic borrowing.

5.2.16 Masculine/feminine noun gender distinction.

Tunica is the only LMV language to have a nominal gender distinction in inanimate as well as animate nouns. Among peripheral languages, Comanche, Yuchi, and Cherokee show systems of gender differentiation.

Since Tunica is the only LMV language to have masculine-feminine gender marking on all nouns, this feature is rendered irrelevant in determining the LMV a Sprachbund.

5.2.17 Inclusive/exclusive plural pronouns.

Only Choctaw-Chickasaw shows inclusive/exclusive plural in pronouns. On the periphery, this feature occurs in Yuchi, Caddoan, Comanche, Shawnee, and Cherokee. Since this feature occurs in only one LMV language, it is not significant in determining the LMV as a Sprachbund.

Since Choctaw-Chickasaw is the only LMV language to have inclusive-exclusive plural pronominal markings, this feature is rendered irrelevant in determining the LMV a Sprachbund.

TABLE 5.2: LMV morphological features. Each language that includes a particular feature receives a score of 1 while those not containing a feature receive 0. Those morphological features weighted more heavily (in Italics) are given a score of 2 rather than just 1.

	feature	source(s)	Atakapa	Biloxi	Chit.	MTL	Natchez	Ofo	Tunica	Western Muskogean
	NOMINALS									
26	focus particle	Campbell 1997	2	2	2	0	2	n/d	0	2
27	overtly marked case system	Sherzer 1976	0	1	0	0	0	0	1	1
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	1	1	0	0	1	n/d	0	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0	0	0	0	1	0
30	animate/inanimate gender	Sherzer 1976	0	0	0	0	0	0	0	0
31	plurality in pronouns	Sherzer 1976	1	1	1	0	1	1	1	1
32	plurality in nouns	Sherzer 1976	1	1	1	0	1	1	0	1
33	inclusive/exclusive plural in pronouns	Sherzer 1976	0	0	0	0	0	0	0	1
34	dual in pronouns	Sherzer 1976	0	0	0	0	1	0	1	1
35	dual in nouns	Sherzer 1976	0	0	0	0	0	0	1	0
36	locative suffixes	Sherzer 1976	1	1	1	0	1	1	1	1
37	definite article	Kaufman 2012	0	1	1	0	1	n/d	1	1
38	demonstrative follows noun	Campbell 1997	0	1	0	1	0	1	0	1
	VERBALS									
39	subject person prefixes	Sherzer 1976	1	1	1	0	1	1	1	1
40	reduplication in stems	Sherzer 1976	1	0	?	0	1	0	1	1
41	instrumental markers	Sherzer 1976	1	1	1	0	1	1	1	1
42	evidentiality marking	Sherzer 1976	0	1	0	0	1	n/d	1	1
43	indir anim obj pref/valence reducer	Kaufman 2012	2	0	0	0	2	0	0	2
44	indir inanim obj pref/valence reducer	Kaufman 2012	2	0	0	0	2	0	0	2
45	reference tracking	Sherzer 1976	2	0	0	0	2	n/d	2	2
46	SOV word order	Sherzer 1976	1	1	1	0	1	1	1	1
47	quinary number system (base 5)	Campbell 1997	0	1	1	1	1	1	1	1
48	vigesimal number system (base 20)	Kaufman 2012	0	0	0	0	0	0	0	0
49	positional verb auxiliaries	Campbell 1997	2	2	2	0	2	2	2	2
50	circumfixed negative construction	Campbell 1997	0	1	0	0	0	1	0	1
51	number suppletion/verbal arguments	Kaufman 2012	2	2	2	0	0	n/d	2	2
	TOTALS		**20**	**19**	**14**	**2**	**22**	**11**	**19**	**27**
	TOTALS		**34**	**31**	**19**	**15**	**36**	**20**	**32**	**41**

TABLE 5.3: Peripheral morphological features.

	feature	source(s)	Eastern Muskogean	Quapaw (Dhegiha)	Caddoan	Yuchi	Karankawa	Tonkawa	Kiowa	Apache
	NOMINALS									
26	focus particle	Campbell 1997	2	?	0	2	n/d	0	?	0
27	overtly marked case system	Sherzer 1976	1	1	1	0	n/d	1	0	0
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	1	?	0	1	n/d	1	0	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0	1	1	0	0	0
30	animate/inanimate gender	Sherzer 1976	0	0	0	1	0	0	0	0
31	plurality in pronouns	Sherzer 1976	1	1	1	1	n/d	1	1	0
32	plurality in nouns	Sherzer 1976	1		1	1	n/d	1	1	0
33	inclusive/exclusive plural in pronouns	Sherzer 1976	0	0	1	1	n/d	0	0	0
34	dual in pronouns	Sherzer 1976	0	1	1	?	n/d	1	1	1
35	dual in nouns	Sherzer 1976	0	0	0	0	n/d	0	1	0
36	locative suffixes	Sherzer 1976	1	1	1	1	n/d	1	1	1
37	definite article	Kaufman 2012	?	1	0	1	0	?	?	?
38	demonstrative follows noun	Campbell 1997	?	0	0	0	n/d	1	?	0
	VERBALS									
39	subject person prefixes	Sherzer 1976	0	1	1	1	0	0	1	1
40	reduplication in stems	Sherzer 1976	1	1	1	1	n/d	1	1	0
41	instrumental markers	Sherzer 1976	1	1	1	1	n/d	1	0	0
42	evidentiality marking	Sherzer 1976	1	1	1	1	n/d	1	1	1
43	indir anim obj pref/valence reducer	Kaufman 2012	0	0	0	0	n/d	0	?	?
44	indir inanim obj pref/valence reducer	Kaufman 2012	2	2	0	2	n/d	0	?	?
45	reference tracking	Sherzer 1976	2	0	0	?	n/d	2	2	?
46	SOV word order	Sherzer 1976	1	1	1	1	n/d	1	?	1
47	quinary number system (base 5)	Campbell 1997	1	1	1	1	n/d	1	1	1
48	vigesimal number system (base 20)	Kaufman 2012	0	0	0	0	n/d	0	0	0
49	positional verb auxiliaries	Campbell 1997	2	2	2	2	n/d	0	?	0
50	circumfixed negative construction	Campbell 1997	?	1	0	0	n/d	0	?	0
51	number suppletion/verbal arguments	Kaufman 2012	2	2	0	0	n/d	0	0	0
	TOTALS		**20**	**18**	**14**	**20**	**1**	**14**	**11**	**6**
	TOTALS		**34**	**25**	**20**	**35**	**14**	**18**	**18**	**17**

	feature	source(s)	Comanche	Shawnee	Coahuiltec	Timucua	Cherokee	Catawba	Nahuatl	Huastec
	NOMINALS									
26	focus particle	Campbell 1997	0	0	0	0	2	0	?	?
27	overtly marked case system	Sherzer 1976	1	0	1	0	0	0	?	0
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	1	0	0	0	0	1	1	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0	0	1	0	0	0
30	animate/inanimate gender	Sherzer 1976	1	1	0	0	0	0	0	0
31	plurality in pronouns	Sherzer 1976	0	1	1	1	1	1	1	1
32	plurality in nouns	Sherzer 1976	1	1	1	1	1	?	1	?
33	inclusive/exclusive plural in pronouns	Sherzer 1976	1	1	0	0	1	0	?	?
34	dual in pronouns	Sherzer 1976	1	0	0	0	1	0	0	0
35	dual in nouns	Sherzer 1976	1	0	0	0	0	0	0	0
36	locative suffixes	Sherzer 1976	1	1	1	1	1	1	1	?
37	definite article	Kaufman 2012	?	?	0	1	?	1	0	?
38	demonstrative follows noun	Campbell 1997	0	0	1	0	0	1	?	?
	VERBALS									
39	subject person prefixes	Sherzer 1976	1	1	1	1	1	1	1	1
40	reduplication in stems	Sherzer 1976	1	1	0	1	0	1	?	?
41	instrumental markers	Sherzer 1976	1	1	0	1	1	1	?	0
42	evidentiality marking	Sherzer 1976	1	?	0	?	1	1	?	0
43	indir anim obj pref/valence reducer	Kaufman 2012	?	?	?	?	?	?	1	0
44	indir inanim obj pref/valence reducer	Kaufman 2012	?	?	1	0	0	2	2	0
45	reference tracking	Sherzer 1976	2	0	2	0	?	0	?	0
46	SOV word order	Sherzer 1976	1	0	1	1	1	?	?	0
47	quinary number system (base 5)	Campbell 1997	1	1	0	?	0	1	0	0
48	vigesimal number system (base 20)	Kaufman 2012	0	0	1	0	0	0	1	1
49	positional verb auxiliaries	Campbell 1997	0	0	0	0	2	2	0	0
50	circumfixed negative construction	Campbell 1997	0	0	0	0	1	0	?	0
51	number suppletion/verbal arguments	Kaufman 2012	0	0	0	0	0	2	0	0
	TOTALS		**16**	**9**	**11**	**8**	**15**	**16**	**9**	**3**
	TOTALS		**20**	**13**	**21**	**16**	**24**	**22**	**14**	**11**

	feature	source(s)	Mayan (other)	Totonac	English
	NOMINALS				
26	focus particle	Campbell 1997	0	0	0
27	overtly marked case system	Sherzer 1976	0	0	0
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	0	1	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0
30	animate/inanimate gender	Sherzer 1976	0	0	0
31	plurality in pronouns	Sherzer 1976	1	1	1
32	plurality in nouns	Sherzer 1976	1	1	1
33	inclusive/exclusive plural in pronouns	Sherzer 1976	0	0	0
34	dual in pronouns	Sherzer 1976	0	0	0
35	dual in nouns	Sherzer 1976	0	0	0
36	locative suffixes	Sherzer 1976	1	1	0
37	definite article	Kaufman 2012	1	1	0
38	demonstrative follows noun	Campbell 1997	?	0	0
	VERBALS				
39	subject person prefixes	Sherzer 1976	1	1	0
40	reduplication in stems	Sherzer 1976	?	?	0
41	instrumental markers	Sherzer 1976	0	1	0
42	evidentiality marking	Sherzer 1976	0	1	0
43	indir anim obj pref/valence reducer	Kaufman 2012	0	0	0
44	indir inanim obj pref/valence reducer	Kaufman 2012	0	2	0
45	reference tracking	Sherzer 1976	0	0	0
46	SOV word order	Sherzer 1976	0	0	0
47	quinary number system (base 5)	Campbell 1997	0	0	0
48	vigesimal number system (base 20)	Kaufman 2012	1	1	0
49	positional verb auxiliaries	Campbell 1997	0	2	0
50	circumfixed negative construction	Campbell 1997	1	0	0
51	number suppletion/verbal arguments	Kaufman 2012	0	2	0
	TOTALS		**7**	**15**	**2**
	TOTALS		**21**	**26**	**11**

5.3 Summary.

The ranking of morphological features is a bit trickier than for phonetic and phonological features, since data on morphological features for languages in and around the LMV are often lacking for specific features. For example, MTL totals very low on the morphological features scale simply because the language is largely isolating and contains few morphological features. Ofo also scores low, simply because extant data on the language is scanty, not because it did not participate more fully in the LMV language area.

Morphological features that have been determined most relevant in analyzing the LMV as a possible Sprachbund are (1) focus-topic marking, (2) indefinite animate subject/object preverb

or prefix, (3) indefinite inanimate subject/object preverb or prefix, (4) positional verb auxiliaries, and (5) verbal number suppletion. These features have been determined most relevant in the analysis of a possible Sprachbund partly because of their limited overall distribution beyond the LMV and their relative rarity among the world's languages. Such limited distribution indicates a comparatively confined area probably once having a high volume of ongoing contact, through such means as trade, marriage, and ritual.

Choctaw-Chickasaw (Western Muskogean) scores highest in the realm of morphology, followed by Natchez, Atakapa, Biloxi, and Tunica. Consistent with phonetic and phonological scoring, Chitimacha is lowest. On the periphery, Eastern Muskogean, Quapaw, and Yuchi score as high as some of the LMV languages, indicating that these languages were in intimate contact with some LMV groups. Cherokee and Comanche also score fairly high. Again, these higher morphological peripheral numbers may indicate that the LMV is part of a broader language area, although apparently not as broad as the scoring of phonetic and phonological features would suggest.

Not surprisingly there is evidence of close contact between pairs of LMV languages that were likely in more intimate contact with each other by virtue of their geographical proximity. Atakapa and Chitimacha have certain morphological features in common, including an identical focus suffix, and Biloxi and Choctaw-Chickasaw have common features such as switch reference, including an identical DS particle, and the sharing of determiners after nouns.

What also becomes evident from the foregoing analysis is that certain LMV features may have spread into the Plains and along the Gulf coast into the Rio Grande Valley.

Chapter 6

Lexical borrowings and calques

6.0 Introduction.

In this chapter I will examine lexical and semantic copying, or borrowing, between the languages of the LMV. Although lexical borrowing is considered less important than phonetic, phonological, and morphological borrowing, the degree of borrowing between languages and the semantic categories of such borrowings can help us infer something about migration patterns and the items of cultural importance at such a distant time period.

Lexical borrowing is also considered less important for establishing the LMV as a Sprachbund since the Mobilian Trade Language (MTL) may have been the primary catalyst for several lexical, as well as some phonetic, borrowings in the LMV. Drechsel hypothesizes that the words for bison/buffalo, goose, and milk likely spread via the MTL (1997: 316). For this reason, among others (see Chapter 3), lexical copying is rated less highly than morphosyntactic features in the effort to determine if the LMV is a Sprachbund.

I will first examine individual lexemes that appear to be shared between two or more languages. I will also examine borrowing according to the Leipzig-Jakarta 100 basic word list. I will examine the direction of borrowing as best as we can tell and the semantic classes of borrowings, which may help us infer something about cultural practices and encounters.

After an examination of lexical and semantic data, I will examine lexical and semantic borrowings in the context of oral histories and what is known from certain aspects of the archaeological data. Then I will examine what we may conclude about the historical and cultural patterns of the LMV based on the extant data.

6.1 Lexical borrowing.

Word borrowings operate according to a certain set of probabilities. Languages are more likely to borrow nouns than verbs (Tadmor et al. 2010: 231). Adjectives and adverbs are almost as hard to borrow as verbs (ibid.), and words with grammatical meanings ('function words') are harder to borrow than verbs (ibid.). Basic vocabulary (see 6.1.1) is borrowed before structure (Thomason 2001: 69) and is indicative of more intense contact, while non-basic vocabulary is easiest to borrow (ibid.) and gets borrowed under conditions of casual contact (Tadmor et al. 2010: 231).

Intensity of contact is, however, "a vague concept, and it cannot be made much more precise because it interacts with speakers' attitudes as well as with more easily specified factors, such as the level of fluency of the borrowers and the proportion of borrowing-language speakers who are fully bilingual in the source language" (Tadmor et al. 2010: 231).

6.1.1 Basic vocabulary.

The concept of basic vocabulary is important to the analysis of lexical borrowings in the LMV. Several lists have been created to reflect basic concepts that are considered to be universal and culturally independent, such as basic kinship (e.g., mother, father) and general animal terms (e.g., fish, bird), and basic verbs (e.g., make, go). The stability of the resulting list of "universal" vocabulary has been brought into question, however, and multiple lists of basic vocabulary have been published. The first was the Swadesh 100 basic word list.

The Swadesh 100 basic word list (1971) was assembled by the linguist Morris Swadesh. Swadesh "determined a priori what constituted basic vocabulary based on his intuitions, and then proceeded to refine his list by trial and error" (Tadmor et al. 2010: 230). A newer list, the

Leipzig-Jakarta (L-J) 100-word list (2009), is based on systematic empirical data from 40 different languages, but such newer lists are not yet as widely known and used as the Swadesh list. Some 62 items overlap between the L-J and Swadesh lists (Tadmor et al. 2010: 242), and these differences will be noted where appropriate. However, "the major advantage of the Leipzig-Jakarta list is that it has a strong empirical foundation and is thus a more reliable tool for scientific purposes" (ibid.). For this reason, I have chosen the L-J list as the one most appropriate for this analysis. However, as with acceptance of any word list, things are not always perfect and certain questions remain unaddressed, such as why black is considered a basic 'color' but not white.

TABLE 6.1: Leipzig-Jakarta (2009) 100 basic word list.

ant	*egg*	*leg/foot*	*smoke*
arm/hand	*eye*	*liver*	*soil*
ash	*to fall*	*long*	*to stand*
back	*far*	*louse*	*star*
big	*fire*	*mouth*	*stone/rock*
bird	*fish*	*name*	*to suck*
to bite	*flesh/meat*	*navel*	*sweet*
bitter	*fly*	*neck*	*tail*
black	*to give*	*new*	*to take*
blood	*to go*	*night*	*thick*
to blow	*good*	*nose*	*thigh*
bone	*hair*	*not*	*this*
breast	*hard*	*old*	*to tie*
to burn (intransitive)	*he/she/it/him/her*	*one*	*tongue*
	to hear	*rain*	*tooth*
to carry	*heavy*	*red*	*water*
child (reciprocal of parent)	*to hide*	*root*	*what?*
	to hit/to beat	*rope*	*who?*
to come	*horn*	*to run*	*wide*
to crush/to grind	*house*	*salt*	*wind*
to cry/to weep	*I/me*	*sand*	*wing*
to do/to make	*in*	*to say*	*wood*
dog	*knee*	*to see*	*yesterday*
drink	*to know*	*shade/shadow*	*you (singular)*
ear	*to laugh*	*skin/hide*	
to eat	*leaf*	*small*	

TABLE 6.2: Chart of LMV lexical borrowings.

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
			tol (Swanton 1915)		anus, backside	n	anatom
				ahal 'hand' (Swadesh 1952)	arm, hand	n	anatom
			hatse-ec, ikau (Swanton 1915)		bad	adj	
				paci (Swadesh 1952)	ball	n	
wuhe (Dorsey-Swanton 1912)		wóhu (Haas 1953)	weweu, wewef (Swanton 1932)	wāx (Swadesh 1952)	bark, howl	v, n	
		peka (Haas 1953)	pak (Swanton 1932)		beat	v	
h? 'make sound' (Dorsey-Swanton 1912)			hon 'bellow' (Swanton 1932)		bellow (make noise)	v	
		čihki (Haas 1953)		či (Swadesh 1952)	belly 1	n	anatom
	itefi (Swanton 1912)				belly 2	n	anatom
			kok 'bend' (Swanton 1932)		bend/bent	adj	
					berry	n	bot
			šokšoš (Swanton 1932)		bird	n	zool
yinisa, yanasa,ąsa (Dorsey-Swanton 1912)	naf 'cow' (Dorsey-Swanton 1912)	yaniši / yaniškáši (Haas 1953)			bison/buffalo	n	zool
		meli (Haas 1953)	mel (Swanton 1915)		black	adj	color
			tsok (Swanton 1932)		blackbird	n	zool
po (Dorsey-Swanton 1912)			pun (Swanton 1932)	puuh(te) (Swadesh 1952)	blow	v	
					bow 1	n	instr. Weapon

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
					anus, backside	n	anatom
ahal 'arm' (Haas ms)					arm, hand	n	anatom
					bad	adj	
puhš(u) (Haas ms)					ball	n	
weh-hakiiš (Haas ms)	wuhwuha (?), woha (Byington et al. 1915)	wohwoya (Drechsel 1996)			bark, howl	v, n	
					beat	v	
					bellow (make noise)	v	
					belly 1	n	anatom
	itikfi (Choctaw) (Byington et al. 1915)				belly 2	n	anatom
konookop 'bent' (Haas ms)					bend/bent	adj	
aanohk (Haas ms)	ani (Byington et al. 1915)		aʔi (Alabama) (Sylestine et al. 1993)		berry	n	bot
šokoL (Haas ms)					bird	n	zool
yanašah (Haas ms)	yanaš (Byington et al. 1915)	yanaš (Drechsel 1996)	yanasa (Martin, McKane Mauldin 2000)		bison/buffalo	n	zool
					black	adj	color
šokkop (Haas ms)					blackbird	n	zool
puuh-hoo'iš (Haas ms)					blow	v	
					bow 1	n	instr. Weapon

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				anus, backside	n	anatom
				arm, hand	n	anatom
			ex (Swanton 1915)	bad	adj	
				ball	n	
				bark, howl	v, n	
				beat	v	
				bellow (make noise)	v	
				belly 1	n	anatom
				belly 2	n	anatom
				bend/bent	adj	
				berry	n	bot
				bird	n	zool
				bison/buffalo	n	zool
				black	adj	color
				blackbird	n	zool
				blow	v	
				bow 1	n	instr. Weapon

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
		til' (Swanton 1915)		anus, backside	n	anatom
				arm, hand	n	anatom
		k'aux (Swanton 1915)		bad	adj	
				ball	n	
				bark, howl	v, n	
				beat	v	
				bellow (make noise)	v	
				belly 1	n	anatom
				belly 2	n	anatom
				bend/bent	adj	
				berry	n	bot
				bird	n	zool
				bison/buffalo	n	zool
mel (Swanton 1915)				black	adj	color
				blackbird	n	zool
				blow	v	
		kruę (Grant 1994)	karua (Grant 1994)	bow 1	n	instr. Weapon

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				anus, backside	n	anatom
				arm, hand	n	anatom
				bad	adj	
				ball	n	
				bark, howl	v, n	
				beat	v	
				bellow (make noise)	v	
				belly 1	n	anatom
				belly 2	n	anatom
				bend/bent	adj	
				berry	n	bot
				bird	n	zool
	ya(na)se (Robinson 1996)		yanaha·s, yana·s (Rudes 2003)	bison/buffalo	n	zool
				black	adj	color
				blackbird	n	zool
				blow	v	
				bow 1	n	instr. Weapon

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
				anus, backside	n	anatom
				arm, hand	n	anatom
				bad	adj	
				ball	n	
huahualoa (Herrera 2004)				bark, howl	v, n	
				beat	v	
				bellow (make noise)	v	
				belly 1	n	anatom
				belly 2	n	anatom
				bend/bent	adj	
				berry	n	bot
				bird	n	zool
			tiyana (MacKay 1999)	bison/buffalo	n	zool
				black	adj	color
				blackbird	n	zool
				blow	v	
				bow 1	n	instr. Weapon

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
			te (Swanton 1932)		bow 2	n	instr. Weapon
paska (Dorsey-Swanton 1912)					bread	n	food
kuts(u) (Dorsey-Swanton 1912)		kušu (Haas 1953)	kets/kuts (Swanton 1932)		break	v	
		nic (Swanton 1919)	nik (Swanton 1919)	mi (Swanton 1919)	breast (female)	n	body
		htat$^{?}$e (Gursky 1969)		tati (Gursky 1969)	brother	n	kin
k?ninuhi (Dorsey-Swanton 1912)		uruna(ťe) (ťe = big) (Haas 1953)	anenūī (Swanton 1919)		bullfrog	n	zool
				ooš (Haas ms)	buzzard	n	zool
					canoe	n	instr. Transp.
cuwahana (Dorsey-Swanton 1912)					cedar	n	bot
hu (Dorsey-Swanton 1912)			hūx (Swanton 1932)		come in, enter (to)	v	
įką (Dorsey-Swanton 1912)		yúnka (Haas ms)			cord, rope	n	
			tso$^{?}$ots (Swanton 1932)		corn 1	n	bot
ayêêki (Dorsey-Swanton 1912)			nešo'um (poss. neso < Arik neesu (< Cad kisi < Tot kusi) corn + grass (Swanton 1932)		corn 2	n	bot
		hahka (Haas ms)			corn 3	n	bot
				časa (Swanton 1919)	corn 4	n	bot

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
					bow 2	n	instr. Weapon
	paska (Byington et al. 1915)	paska (Drechsel 1996)			bread	n	food
keš (Haas ms)					break	v	
					breast (female)	n	body
					brother	n	kin
hánanai (Swanton 1919)		hanono (Drechsel 1996)	hanono (Alabama) (Sylestine et al. 1993)		bullfrog	n	zool
ooš (Haas ms)					buzzard	n	zool
					canoe	n	instr. Transp.
	cuwa?a (Byington et al. 1915)				cedar	n	bot
					come in, enter (to)	v	
					cord, rope	n	
					corn 1	n	bot
				riiksu (Pawnee) (Parks & Pratt 2008)	corn 2	n	bot
haku (Haas 1953)					corn 3	n	bot
		čašše (Drechsel 1996)	čassi (Ala/Koa) (Drechsel 1996: 275)		corn 4	n	bot

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				bow 2	n	instr. Weapon
				bread	n	food
				break	v	
				breast (female)	n	body
				brother	n	kin
				bullfrog	n	zool
				buzzard	n	zool
				canoe	n	instr. Transp.
				cedar	n	bot
				come in, enter (to)	v	
				cord, rope	n	
				corn 1	n	bot
				corn 2	n	bot
				corn 3	n	bot
				corn 4	n	bot

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
				bow 2	n	instr. Weapon
				bread	n	food
				break	v	
				breast (female)	n	body
				brother	n	kin
				bullfrog	n	zool
				buzzard	n	zool
		tualagle (Grant 1994)		canoe	n	instr. Transp.
				cedar	n	bot
				come in, enter (to)	v	
				cord, rope	n	
				corn 1	n	bot
				corn 2	n	bot
				corn 3	n	bot
				corn 4	n	bot

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				bow 2	n	instr. Weapon
				bread	n	food
			kit 'break' (Shea 1984)	break	v	
				breast (female)	n	body
				brother	n	kin
	kanuna (Robinson 1996)		ararai (Shea 1984)	bullfrog	n	zool
				buzzard	n	zool
tataple (Grant 1994)				canoe	n	instr. Transp.
				cedar	n	bot
				come in, enter (to)	v	
				cord, rope	n	
				corn 1	n	bot
				corn 2	n	bot
				corn 3	n	bot
				corn 4	n	bot

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
		t'e 'wood/tree' (Kaufman)		bow 2	n	instr. Weapon
				bread	n	food
				break	v	
				breast (female)	n	body
				brother	n	kin
				bullfrog	n	zool
				buzzard	n	zool
				canoe	n	instr. Transp.
				cedar	n	bot
				come in, enter (to)	v	
				cord, rope	n	
		tzo'o' (Kaq. 'hominy'; PM *tsutuj, Soke tzutu? 'corn flower'?		corn 1	n	bot
				corn 2	n	bot
				corn 3	n	bot
				corn 4	n	bot

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
tąsi 'grass' (Dorsey-Swanton 1912)					corn 5	n	bot
					corn 6	n	bot
p(a)tato (Dorsey-Swanton 1912)			patiteu (Swanton 1932)		cotton	n	bot
				waštik (Swadesh 1952)	cow	n	zool
	oska (Swanton 1912)				crane	n	zool
wahe (Dorsey-Swanton [illegible]		wáha (Haas 1953)			cry, scream	v	
k(u)tsi (Dorsey-Swanton 1912)		kušu (Haas 1953)	kets/kuts (Swanton 1932)		cut (to)	v	
sokuno (Dorsey-Swanton 1912)					cypress	n	bot
wite(di) 'today' (Dorsey-Swanton 1912)					day	n	
(i)tha (Dorsey-Swanton 1912)					deer	n	zool
					die, to	v	
				kiš (Swadesh 1952)	dog	n	zool
					dress (clothing)	n	clothing
					duck	n	zool
			ya (Swanton 1915)		eat	v	

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
	tąče (Drechsel 1996)	tąče (Drechsel 1996)			corn 5	n	bot
					corn 6	n	bot
					cotton	n	bot
waštaaN (Haas ms)					cow	n	zool
	uskap (Choctaw) (Byington et al. 1915)				crane	n	zool
					cry, scream	v	
kec (Haas ms)					cut (to)	v	
	šankolo (Drechsel 1996)	šąkolo (Drechsel 1996)			cypress	n	bot
wit (Haas ms)					day	n	
caa (Gursky 1965)				taa (Parks & Pratt 2008)	deer	n	zool
					die, to	v	
					dog	n	zool
					dress (clothing)	n	clothing
					duck	n	zool
					eat	v	

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				corn 5	n	bot
				corn 6	n	bot
				cotton	n	bot
				cow	n	zool
				crane	n	zool
				cry, scream	v	
	kutsu (Grant 1994)		kaetca (Swanton 1915)	cut (to)	v	
				cypress	n	bot
				day	n	
		taer, tar, ta (Harrington 1928)		deer	n	zool
				die, to	v	
				dog	n	zool
	kwasu'u (Grant 1994)			dress (clothing)	n	clothing
			cona (Swanton 1915)	duck	n	zool
			yax (Swanton 1915)	eat	v	

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
				corn 5	n	bot
				corn 6	n	bot
				cotton	n	bot
				cow	n	zool
				crane	n	zool
				cry, scream	v	
				cut (to)	v	
				cypress	n	bot
				day	n	
				deer	n	zool
tzam (Kaufman 1980)				die, to	v	
keš (Grant 1994)			kissa (fox) (Grant 1994)	dog	n	zool
kwiss (Grant 1994)				dress (clothing)	n	clothing
				duck	n	zool
				eat	v	

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				corn 5	n	bot
	selu (Robinson 1996)			corn 6	n	bot
				cotton	n	bot
				cow	n	zool
				crane	n	zool
				cry, scream	v	
			kit 'break' (Shea 1984)	cut (to)	v	
				cypress	n	bot
				day	n	
				deer	n	zool
				die, to	v	
				dog	n	zool
				dress (clothing)	n	clothing
				duck	n	zool
				eat	v	

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
				corn 5	n	bot
xilotl (Herrera 2004)				corn 6	n	bot
				cotton	n	bot
				cow	n	zool
				crane	n	zool
				cry, scream	v	
				cut (to)	v	
				cypress	n	bot
				day	n	
				deer	n	zool
	cam (Kaufman 1980)			die, to	v	
				dog	n	zool
				dress (clothing)	n	clothing
canauhtli (Herrera 2004)				duck	n	zool
				eat	v	

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
ịsto (Dorsey-Swanton 1912)			est (Swanton 1919)		elbow	n	anatom
iNti (Dorsey-Swanton 1912)			it (Swanton 1932)		excrement	n	
ithê 'forehead' (Dorsey-Swanton 1912)			īt (Swanton 1952) / iti (Gursky 1969), in front of / ice (Gursky 1969), top of head		face	n	anatom
			mak (Swanton 1915)		fall (to)	v	
		nini (Haas 1953)			fish	n	zool
p(a)taax(i) 'flat' (Dorsey-Swanton 1912)			pax (Swanton 1932)	bakbakn(iš) (Swadesh 1952)	flat	adj	
cika (Dorsey-Swanton 1912)		cahki (Haas 1953)			flying squirrel	n	zool
					fox	n	zool
				ketaa (Swadesh 1952)	friend	n	
		lalahki (Haas 1952)			goose	n	zool
			woš (Swanton 1932)	waši (Swadesh 1952)	hand	n	anatom
			ka (Swanton 1915)		have (to)	v	
naxê (Dorsey-Swanton 1912)			nak (Swanton 1932)		hear (to)	v	
tuphê (Dorsey-Swanton 1912)			tūū / tehup (Swanton 1932)	tuu (Swadesh 1952)	hole 1	n	

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
					elbow	n	anatom
					excrement	n	
	itisopi (Choctaw) cheek (Drechsel 1996)	etesope (Drechsel 1996)			face	n	anatom
					fall (to)	v	
	nani (Drechsel 1996)	nane (Drechsel 1996)			fish	n	zool
					flat	adj	
					flying squirrel	n	zool
	chula (Byington et al. 1915)				fox	n	zool
kitah (Haas ms)					friend	n	
laalak (Haas ms)	shilaklak (Byington el al. 1915)				goose	n	zool
					hand	n	anatom
					have (to)	v	
					hear (to)	v	
					hole 1	n	

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				elbow	n	anatom
				excrement	n	
				face	n	anatom
				fall (to)	v	
				fish	n	zool
				flat	adj	
				flying squirrel	n	zool
				fox	n	zool
				friend	n	
				goose	n	zool
				hand	n	anatom
			ka (Swanton 1915)	have (to)	v	
				hear (to)	v	
				hole 1	n	

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
				elbow	n	anatom
				excrement	n	
				face	n	anatom
amoak (Swanton 1915)				fall (to)	v	
				fish	n	zool
				flat	adj	
				flying squirrel	n	zool
				fox	n	zool
				friend	n	
la'ak (Grant 1994)				goose	n	zool
				hand	n	anatom
				have (to)	v	
				hear (to)	v	
				hole 1	n	

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				elbow	n	anatom
				excrement	n	
				face	n	anatom
				fall (to)	v	
				fish	n	zool
				flat	adj	
				flying squirrel	n	zool
	tsula (Robinson 1996)			fox	n	zool
				friend	n	
				goose	n	zool
				hand	n	anatom
				have (to)	v	
				hear (to)	v	
				hole 1	n	

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
				elbow	n	anatom
				excrement	n	
				face	n	anatom
				fall (to)	v	
				fish	n	zool
				flat	adj	
				flying squirrel	n	zool
				fox	n	zool
				friend	n	
				goose	n	zool
				hand	n	anatom
				have (to)	v	
				hear (to)	v	
				hole 1	n	

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
	hupi 'dig' (Swanton 1919)		hop 'hole' (Swanton 1919)	hapt 'bore (hole)' (Swanton 1919)	hole 2	n	
			a? (Swanton 1932)	hana (Swadesh 1952)	house	n	
tsipa (Dorsey-Swanton 1912)					hundred 1	num	
				puup (Swadesh 1952)	hundred 2	num	
cinąki (Dorsey-Swanton 1912)		cina(hki) (Haas 1953)	timak (Swanton 1932)		knee	n	anatom
			ne (Swanton 1932)	ney' (Swadesh 1952)	land/earth	n	
xahaye (Dorsey-Swanton 1912)			hayu (Swanton 1932)		laugh	v	
				om 'grass' (Swadesh 1952)	medicine	n	
ihi (Dorsey-Swanton 1912)				i, tooth (Swadesh 1952)	mouth	n	anatom
			he-u (Swanton 1915)		much, many	adj	
xanami (Dorsey-Swanton 1912)					north	dir	
			nak (Swanton 1919)		now	adv	
caxku (Dorsey-Swanton 1912)		čúhki (Haas 1953)			oak tree	n	bot
			kokam (Troike 1964)		ocean	n	
tokono (Dorsey-Swanton 1912)					peach	n	bot

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
					hole 2	n	
					house	n	
	ta?epa (Byington et al. 1915)	talepa (Drechsel 1996)			hundred 1	num	
puup (Haas ms)					hundred 2	num	
					knee	n	anatom
					land/earth	n	
					laugh	v	
om 'medicine' (Haas ms)					medicine	n	
ihi (Haas ms)					mouth	n	anatom
					much, many	adj	
	falammi (Byington et al. 1915)	falami (Drechsel 1996)			north	dir	
	himaka (Choctaw) (Drechsel 1996)	(he)maka (Drechsel 1996)			now	adv	
			čoska 'white oak' Creek (Martin, McKane Mauldin 2000)		oak tree	n	bot
					ocean	n	
	takkon (Drechsel 1996)	tak? (Drechsel 1996)			peach	n	bot

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				hole 2	n	
				house	n	
				hundred 1	num	
				hundred 2	num	
				knee	n	anatom
				land/earth	n	
			xaxaya (Swanton 1915)	laugh	v	
				medicine	n	
				mouth	n	anatom
			hiwel (Swanton 1915)	much, many	adj	
				north	dir	
				now	adv	
				oak tree	n	bot
				ocean	n	
				peach	n	bot

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
				hole 2	n	
				house	n	
				hundred 1	num	
				hundred 2	num	
				knee	n	anatom
				land/earth	n	
				laugh	v	
				medicine	n	
				mouth	n	anatom
				much, many	adj	
				north	dir	
		nakuē (Swanton 1919)		now	adv	
				oak tree	n	bot
komkom-dem 'water-salt' (Troike 1964)				ocean	n	
				peach	n	bot

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				hole 2	n	
				house	n	
				hundred 1	num	
				hundred 2	num	
				knee	n	anatom
				land/earth	n	
				laugh	v	
				medicine	n	
				mouth	n	anatom
				much, many	adj	
				north	dir	
	naquu (Robinson 1996)			now	adv	
	tsusga (Robinson 1996)			oak tree	n	bot
				ocean	n	
				peach	n	bot

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
				hole 2	n	
				house	n	
				hundred 1	num	
				hundred 2	num	
				knee	n	anatom
				land/earth	n	
				laugh	v	
	tom 'grass'			medicine	n	
				mouth	n	anatom
				much, many	adj	
				north	dir	
				now	adv	
				oak tree	n	bot
				ocean	n	
				peach	n	bot

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
					pepper	n	bot
awiusk/awisk 'turnip' (Dorsey-Swanton 1912)					pumpkin/turnip	n	bot
	aboki (Swanton 1912)				river 2	n	
sįkuki (Dorsey-Swanton 1912)		wišk$^{?}$ohku (Haas 1953)			robin	n	zool
		uxšik (Swanton 1919)	uk 'closed shell' (Swanton 1932)	ukšču 'oyster' (Swanton 1919)	shell	n	
			tsik (Swanton 1915)		six	num	
			ciniw (Gursky 1969)		skunk	n	zool
			utse/otse (Swanton 1932)	ukš (Haas ms)	snake	n	zool
			wan (Gursky 1969)	wen (Gursky 1969)	speak	v	
					speckled	adj	
tučku (Dorsey-Swanton 1912)		čuhu (Swanton 1919)	kitūš (spittle) (Swanton 1919)	tûx (Swanton 1919)	spit	v	
ca (Dorsey-Swanton 1912)		čal (Swanton 1919)	čal (Swanton 1919)	cap (Swanton 1919)	split	v	
pisi (Dorsey-Swanton 1912)					suck (to)	v	
toho (Dorsey-Swanton 1912)		tohu (Haas 1953)			throw down, fall (to)	v	

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
oomah (Haas ms)			huuma (Creek) (Martin, McKane Mauldin 2000)		pepper	n	bot
iwisk(a) 'pumpkin' (Haas ms)					pumpkin/turnip	n	bot
	bok (Choctaw) (Byington et al. 1915)	bok/bayok (Drechsel 1996)			river 2	n	
miškokw (Haas ms)	biškoko (Drechsel 1996)	beškoko (Drechsel 1996)	čiiskokko (Alabama) (Sylestine et al. 1993)		robin	n	zool
					shell	n	
					six	num	
				niwi (Arikara) (Gursky 1969)	skunk	n	zool
					snake	n	zool
					speak	v	
šukšukup (Haas ms)	čikčiki (Choctaw) (Byington et al. 1915)		čukčuki (Koasati)		speckled	adj	
		tofa (< tox^{w}a?) (Drechsel 1996)			spit	v	
	ču?alli (Choc.) (Drechsel 1996)	čołale (Drechsel 1996)			split	v	
	piši (Byington et al. 1915)	peše(k) (Drechsel 1996)			suck (to)	v	
					throw down, fall (to)	v	

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				pepper	n	bot
				pumpkin/turnip	n	bot
				river 2	n	
				robin	n	zool
				shell	n	
				six	num	
				skunk	n	zool
				snake	n	zool
				speak	v	
				speckled	adj	
				spit	v	
				split	v	
				suck (to)	v	
				throw down, fall (to)	v	

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
				pepper	n	bot
				pumpkin/turnip	n	bot
				river 2	n	
				robin	n	zool
				shell	n	
		tcikuās (Swanton 1915)		six	num	
				skunk	n	zool
				snake	n	zool
				speak	v	
				speckled	adj	
				spit	v	
				split	v	
				suck (to)	v	
				throw down, fall (to)	v	

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				pepper	n	bot
				pumpkin/turnip	n	bot
				river 2	n	
	tsisquoquo (Robinson 1996)			robin	n	zool
				shell	n	
				six	num	
				skunk	n	zool
				snake	n	zool
				speak	v	
				speckled	adj	
				spit	v	
				split	v	
				suck (to)	v	
				throw down, fall (to)	v	

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
				pepper	n	bot
				pumpkin/turnip	n	bot
				river 2	n	
				robin	n	zool
				shell	n	
chicuase (Herrera 2004)				six	num	
				skunk	n	zool
				snake	n	zool
				speak	v	
				speckled	adj	
				spit	v	
				split	v	
				suck (to)	v	
				throw down, fall (to)	v	

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	English	PoS	cat.
wite (Dorsey-Swanton 1912)					today/morning	adv	
				i (Swadesh 1952)	tooth	n	anatom
mixi (Dorsey-Swanton 1912)		maxsi (Swanton 1919)	miš (Swanton 1932)	tamix (Swanton 1919)	turn, rotate (to)	v	
			ak (Eastern) (Swanton 1932)		water 1	n	
			kaukau (Western) (Swanton 1932)	ku (Swadesh 1952)	water 2	n	
			pats (Swanton 1915)		whip (to)	v	
			kop (Swanton 1932)		white	adj	color
tumocka (Dorsey-Swanton 1912)		čomu (Haas 1953)			wildcat	n	zool
xux(w)e (Dorsey-Swanton 1912)		húri (Haas 1953)	howi 'blow wind' (Swadesh 1952)		wind	n	
			kiš (Swanton 1932)	kiča (Swadesh 1952)	woman	n	
				šuš (Gursky 1969)	wood	n	
pakpakhayi (Dorsey-Swanton 1912)		páhpahkana (Haas 1953)			woodpecker	n	zool

Natchez	Western Musk.	MTL	Eastern Musk.	Caddoan	English	PoS	cat.
wit (Haas ms)					today/morning	adv	
					tooth	n	anatom
					turn, rotate (to)	v	
					water 1	n	
kų (Haas ms)				koko (Caddo only) (Troike 1964)	water 2	n	
					whip (to)	v	
kahaap (Haas ms)					white	adj	color
					wildcat	n	zool
					wind	n	
					woman	n	
cuu (Gursky 1969)					wood	n	
pukpúku (Haas ms)	bakbak (Chickasaw) (Munro Wilmond 1994)		bakbá (pileated woodpecker) (Sylestine et al. 1993)		woodpecker	n	zool

Apache	Comanche	Kiowa	Tonkawa	English	PoS	cat.
				today/morning	adv	
				tooth	n	anatom
				turn, rotate (to)	v	
			ax (Campbell 1996)	water 1	n	
				water 2	n	
				whip (to)	v	
				white	adj	color
				wildcat	n	zool
				wind	n	
				woman	n	
				wood	n	
				woodpecker	n	zool

Karankawa	Shawnee	Coahuilteco	Cotoname	English	PoS	cat.
				today/morning	adv	
e, ey (Ramer 1996)				tooth	n	anatom
				turn, rotate (to)	v	
			a, ax (Campbell 1996)	water 1	n	
komkom (Troike 1964)				water 2	n	
		wats (Swanton 1915)		whip (to)	v	
				white	adj	color
				wildcat	n	zool
				wind	n	
				woman	n	
				wood	n	
				woodpecker	n	zool

Comecrudo	Cherokee	Timucua	Catawba	English	PoS	cat.
				today/morning	adv	
i (Ramer 1996)				tooth	n	anatom
				turn, rotate (to)	v	
ax (Campbell 1996)				water 1	n	
				water 2	n	
				whip (to)	v	
				white	adj	color
				wildcat	n	zool
				wind	n	
				woman	n	
				wood	n	
			wi?spakpak 'robin' (Shea 1984: 188) / pakpi? 'pileated woodpecker' (id.: 254)	woodpecker	n	zool

Nahuatl	Huastec	(other) Maya	Totonac	English	PoS	cat.
				today/morning	adv	
				tooth	n	anatom
				turn, rotate (to)	v	
				water 1	n	
				water 2	n	
				whip (to)	v	
				white	adj	color
				wildcat	n	zool
				wind	n	
				woman	n	
				wood	n	
				woodpecker	n	zool

6.1.2 Semantic classes of borrowings.

As can be seen in Table 6.2, several semantic classes are involved in copied lexemes in the LMV, including body parts, animals, food, colors, trees, and numbers. Several of these

borrowings include basic vocabulary (see 6.2.1) according to the L-J basic word list: arm/hand, belly, bird, black, blow, breast (female), cord/rope, cry, die, dog, eat, to fall, fish, to hear, house, knee, earth/soil, to laugh, mouth, to speak, to suck, tooth, water, white, wind, woman, and wood.

The number of borrowings between LMV languages can tell us something about the prior location and migration patterns of LMV groups. For example, the sheer volume of borrowings between Atakapa and Biloxi suggests that these languages were heavily in contact at one time. This seems extraordinary given the post-contact geographic locations of these groups, being on opposite sides of the Mississippi River. It is also notable that there are fewer borrowings between Chitimacha and Biloxi than between Atakapa and Biloxi, even though the Chitimachas, at least according to their post-contact location, were in between. This could indicate, however, that Atakapas and Biloxis were geographically much closer to each other at one time. Biloxis may once have been located west of the Mississippi River before migrating eastward to the Pascagoula River region along the Gulf of Mexico where they encountered the French in 1699.

The following table is a list of LMV borrowings by semantic category (L-J basic vocabulary in bold):

TABLE 6.3

Agricultural: (2) *seed, turn (soil?).*
Body parts: (9) *anus/back,* ***arm/hand****, belly,* ***breast****, elbow, face,* ***knee****,* ***mouth****,* ***tooth****.*
Botanical: (9) *berry, cedar, corn, cotton, cypress, oak, peach, pepper, pumpkin/turnip.*
Color: (2) *black,* ***white****.*
Food: (2) *tortilla, bread.*
Kin: (1) *brother.*
Transport: (1) *canoe.*
Weapon: (1) *bow.*
Zoological: (19) *bee,* ***bird****, bison/buffalo, blackbird, bullfrog, buzzard, cow/calf, crane, deer,* ***dog****, duck,* ***fish****, flying squirrel, raccoon, robin, skunk, snake, wildcat, woodpecker.*

A total of nine basic words have been shared between LMV languages. The following table lists the basic vocabulary, according to the L-J Basic Word List, that has been copied between LMV languages:

TABLE 6.4

Atakapa-Biloxi: *hear, laugh.*
Atakapa-Chitimacha: *earth, house, soil.*
Atakapa-Chitimacha-Natchez-Caddo-Karankawa: *water.*
Atakapa-Natchez: *bird, white.*
Biloxi, Atakapa, Chitimacha, Natchez: *blow.*
Biloxi-Tunica: *cord, cry, rope.*
Biloxi-Tunica-Atakapa: *knee.*
Biloxi-Ofo-Natchez: *mouth.*
Biloxi-Tunica-Chitimacha: *wind.*
Chitimacha-Natchez: hand, *wood.*
Tunica-Atakapa-Chitimacha: *breast.*
Tunica-Choctaw: *fish.*

Atakapa, Chitimacha, and Biloxi have the largest number of shared basic vocabulary with 9, 8, and 8 respectively. Tunica and Natchez have 7 and 6 respectively. Ofo and Choctaw-Chickasaw rank the lowest with only 1 and 0 respectively. In addition, Atakapa and Chitimacha share basic words with languages on the periphery of the LMV: Comecrudo, Cotoname, Karankawa, and Tonkawa.

TABLE 6.5

Atakapa-Tonkawa: *eat*.
Atakapa-Karankawa: *fall*.
Chitimacha-Karankawa-Cotoname: *dog*.
Chitimacha-Karankawa-Comecrudo: *tooth*.

6.1.3 Widespread borrowings in the LMV.

Certain nouns, and at least three verbs, are fairly widespread in their diffusion: bison/buffalo, bullfrog, cut, deer, goose, metal, robin, split, town, turn, water, and woodpecker.

(1) *Bison/buffalo*: A similar term for 'bison/buffalo' is particularly widespread in its diffusion, ranging from Caddoan in the western Plains to Catawba near the eastern seaboard. (The Ofo term *naf* 'cow' is likely also derived from this widespread bison term.) While the source of the borrowing is unknown, Taylor (1976: 166) suggested the possibility of its origin in an Athapascan language. I concur with him that the Apache *iyaná ɬa'* (with loss of the initial *i* and the second element being the enclitic for indefinite determiner) could indeed be the source of copying. Apaches were a Plains group who may have been in contact on a regular basis with buffalo hunting parties of other groups from the LMV and Southeast and were probably also involved in the buffalo fur trade. Totonac has the word *tiyaná* for 'ox,' raising the possibility of borrowing between this Mexican Gulf coastal language and the LMV and U.S. Southeast for this similar bovine.

(2) *Bullfrog*: Atakapa, Biloxi, Choctaw-Chickasaw, MTL, and Natchez have similar terms for 'bullfrog'; the term also extends into Eastern Muskogean and Cherokee. The source language of the borrowing is unknown.

(3) *Cut*: A similar term for 'cut' appears to be fairly widespread in the LMV and spreading into the Plains. Atakapa, Biloxi, Natchez, and Tunica in the LMV all share a similar term while the Plains languages Comanche, Tonkawa, and possibly Caddoan share similar terms to the LMV form. The source language of the borrowing is unknown.

(4) *Deer*: A similar term for 'deer' appears to have been borrowed in the LMV as well as in the Plains periphery. The Proto-Siouan form is **wi-htáa*, indicating possible borrowing from Siouan (possibly Biloxi) into Natchez (Natchesan), Pawnee (Caddoan), and Kiowa (Kiowa-Tanoan).

(5) *Goose*: Western and Eastern Muskogean, including MTL, as well as Natchez and Tunica share a similar term for 'goose.' The term also occurs to the west in Karankawa and all the way into California, including Mutsun (Costanoan) */alak*, Nisenan (Maiduan) */a·lak'*, Pomoan */ala*, Luiseño (Uto-Aztecan) */aʔla*, and Southern Sierra Miwok (Miwokan) */aŋlaŋ* (Haas 1969: 82). This may lend credence to the idea that Tunicas may have migrated from much farther west into the LMV.

(6) *Metal*: several LMV languages have similar words for the substance based on *mas(a)*. Forms of this word also occur on the other side of the Gulf in Yukatek (Mayan).

(7) *Robin*: Similar terms for 'robin' occur in the LMV among Biloxi, Choctaw-Chickasaw, MTL, Natchez, and Tunica. The term also extends into Eastern Muskogean.

(8) *Split*: A similar term for 'split' occurs in Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, MTL, and Tunica. It may be significant that the semantically similar verb 'cut' also has a fairly widespread distribution.

(9) *Town*: A similar term for 'town' occurs in Western Muskogean (but not Eastern Muskogean) and is widespread across Siouan languages. It is possible that the term was borrowed between the two families, though the direction of borrowing is uncertain.[30]

(10) *Turn*: Similar terms for 'turn' occur in Atakapa, Biloxi, Chitimacha, and Tunica.

[30] It is unlikely that a similar-looking Algonquian term (e.g., Ojibwe *oodena* [Nichols and Nyholm 1995: 272]) is copied from either Siouan or Western Muskogean due to the Algonquian initial o(o)-. Another possibility for the origin of the term exists, however, which warrants further examination: the Totonacan term *tamawan* (*tamāhuan*) means 's/he buys' while *liitamaw* (*li̱tama̱u*) and *puutamawan* (*pu̱tama̱huán*) means 'plaza' or 'place to buy' (Aschmann 1973: 110) (the Totonac prefix *lii-* is an instrumental prefix while *puu-* is a locative prefix [MacKay 1999: 386, 388]). Assuming that there may have been circum-Gulf navigation and trade, it is possible that this term entered Choctaw-Chickasaw and MTL as *tamaha* from Totonacan *tamawan* as a means of referring to a center for buying, selling, and trading (i.e., a plaza or town center) which may then have been copied into Siouan. Such a scenario might indicate that the term was borrowed into Siouan from Western Muskogean (or MTL) at a time that predated the westward migration of Siouan groups from perhaps the Ohio Valley or Appalachian region.

(11) *Water*: A similar term for ‘water’ occurs in Atakapa, Chitimacha, and Natchez, extending west into Caddoan, Karankawa, Tonkawa, and Coahuiltecan.

(12) *Woodpecker*: Similar terms for ‘woodpecker’ occur in the LMV in Biloxi, Choctaw-Chickasaw, Natchez, and Tunica, extending into Eastern Muskogean.

Certain of the above terms (e.g., goose, woodpecker) may be due to onomatopoeia, or words mimicking the sounds of nature. Yet “some resemblances are remarkably precise even if one allows for onomatopoeia” (Haas 1969b: 82), as in the above examples. It might also be noted that certain widespread terms may be cultural in nature, as attested by the Chickasaw text (see Appendix) in which The Redheaded Woodpecker is of high cultural prominence. (The Redheaded Woodpecker has a particular association with the ball game in Chickasaw; the cultural iconicity of this bird associated with this sport and its nomenclature could easily have been copied by other groups through the ritual of intergroup ball play.)

The significance of sharing certain terms such as ‘cut’, ‘split’, and ‘turn’ is unknown. ‘Cut’ and ‘split’ may be related to such activities as communal hunting and feasting and the sharing of meat. ‘Turn’ may be related either to the turning of soil involved in agriculture or perhaps to communal dancing. But the instigation of such lexical copying on a broad scale remains mere speculation.

6.2 Calques.

Calques are loan translations (word-for-word semantic translations) shared among languages. Rather than an individual term being copied, as in lexical borrowing, calques involve the copying of a semantic phrase, the concept behind the phrase being copied rather than just the individual words.

TABLE 6.6: Calques in the LMV.

Biloxi	Chitimacha	MTL	Natchez	Tunica	Western Musk.	English	Calque	Langs
akidi xapka (DS 1912)						bedbug	flat bug	Biloxi / Caddoan
waaktasacįni (DS 1912)		wak (em)peš neha (Drechsel 1996)	šuukuNnehkw (Haas ms)			butter	cow/milk grease	Atakapa, Biloxi, MTL, Natchez / Nahuatl
ani naphihi 'water good-smelling' (DS 1912)						cologne	water smell good	Biloxi, Natchez
ayêêkathi (DS 1912)			haku'eet (Haas ms)	hahkari (Haas 1953)		corn crib	corn house	Atakapa, Biloxi, Natchez, Tunica
tahôôxknixux naskê (DS 1912)		soba haksobeš falaya 'long-ear horse' (Drechsel 1996)	waškupšiiL'imp okwataa (Haas ms)		isuba haksobish falaia 'long ear horse' (Byington et al. 1915)	donkey	long ears	Atakapa, Biloxi, Choctaw, MTL, Natchez / Caddoan, Cherokee
	hanša'a (Swadesh 1952)		iitih(i) 'doorway' (Haas ms)			door	house mouth	Atakapa, Chitimacha, Natchez / Mayan
			eetka-haciiš (Haas ms)		chukoa (Byington et al. 1915: ?)	enter	house-enter	Muskogean, Natchez / Nahuatl

Atakapa	Biloxi	Chitimacha	MTL	Natchez	Tunica	Western Musk.	English	Calque	Langs
		kix qakin (Swadesh 1952)		waškupšiiL (Haas ms)	sat'e (Haas 1953)		horse	big dog	Chitimacha, Natchez, Tunica
a^{n} lak 'strong house' (Swanton 1932)	thisąhą 'strong house' (DS 1912)		čoka kamasa 'strong house' (Drechsel 1996)			abooha kallo 'strong house' (Byington et al. 1915)	jail	strong house	Atakapa, Biloxi, Choctaw, MTL / Creek
		ʔowi kesuym(iš) 'raccoon that usually causes trouble' (?) (Hieber 2011 pc)	šawi hattak 'raccoon man' (Drechsel 1996)			šawi hattak 'raccoon man' (Drechsel 1996)	monkey	raccoon	Chitimacha, Choctaw, MTL
uts kalhopc (Swanton 1932)	picʔ tuphê (DS 1912)			šamašpakašku p (Haas ms)			nostril	nose hole	Atakapa, Biloxi, Natchez / Caddoan, Comanche, Nahuatl
	ani nithąąyą (DS 1912)			ku^{n}šiiL (Haas ms)			ocean	big water	Biloxi, Natchez / Comanche, Cherokee, Nahuatl

Atakapa	Biloxi	Chitimacha	MTL	Natchez	Tunica	Western Musk.	English	Calque	Langs
						kitt-osh(i) (Choc) (Byington 1915)	pestle	child of mortar	Choctaw / Totonac
	ądêês-nithani 'big snake' (DS 1912)				narat'e 'big snake'		rattlesnake 1	big snake	Biloxi, Tunica / Eastern Muskogean, Tonkawa
				uulahcuunah 'chief snake' (Haas ms)			rattlesnake 2	chief snake	Biloxi, Natchez / Yukatek (Mayan)
	ądêês-xi 'sacred snake' (DS 1912)		sęte holo 'sacred snake' (Drechsel 1996)			sįthollo 'sacred snake'	rattlesnake 3	sacred snake	Atakapa, Biloxi, Choctaw, MTL, Natchez / Mayan (lowland)
tsanuk a? (Swanton 1932)	tahôôxka thi (DS 1912)						stable	horse house	Atakapa, Biloxi / Comanche, Nahuatl
neck-ol	waaxckuuyê (DS 1912)		hape cãbole (Drechsel 1996)	wai tsakalokúpin (Haas ms)		hapi campuli 'sweet salt' (Byington et al. 1915)	sugar	sweet salt	Atakapa, Biloxi, Choctaw, MTL, Natchez

Atakapa	Biloxi	Chitimacha	MTL	Natchez	Tunica	Western Musk.	English	Calque	Langs
hehin pon ioliš (Swanton 1932)	tsipjcya 'old (man) hundred' (DS 1912)	puup 'axinjada	ta?epa sepe, čokpe čoba čafa			ta?apa sipokni	thousand 1	old (man) one hundred	Atakapa, Biloxi, Chitimacha, Choctaw, MTL
				puuptoMšiiL (Haas ms)	polunt'e (Haas 1953)		thousand 2	big one hundred	Natchez, Tunica
woš hets 'big hand' (Swanton 1932)	caakxohi 'old hand' (DS 1912)			iiššiiL 'big hand' (Haas)	hkent'e 'big hand' (Haas 1953)		thumb	big/old hand	Atakapa, Biloxi, Natchez, Tunica / Comanche, Nahuatl
pock a? (Swanton 1932)	ayithi (DS 1912)						vein	blood house	Atakapa, Biloxi
kitsonš ak 'fire water' (Swanton 1932)				uwahkuN 'fire water' (Haas ms)			whisky	fire water	Atakapa, Natchez, Tunica

The following table list calques that are found among LMV languages (some of which are found beyond the LMV in peripheral languages):

TABLE 6.7

bedbug	‘flat bug’	Biloxi, Caddoan
butter	‘cow/milk grease’	MTL, Natchez, Atakapa, Biloxi
cologne	‘smell good water’	Biloxi, Natchez
corn crib	‘corn house’	Biloxi, Tunica, Atakapa, Natchez
donkey/mule	‘long ear’	Biloxi, Natchez, Atakapa, Choctaw, MTL, Caddoan
door	‘house mouth’	Atakapa, Chitimacha, Natchez, Mayan
horse	‘big dog’	Tunica, Chitimacha, Natchez
jail	‘strong house’	Biloxi, Atakapa, Choctaw, MTL, Creek
monkey	‘raccoon man’	Choctaw, Chitimacha
nostril	‘nose hole’	Biloxi, Atakapa, Natchez, Caddoan, Comanche, Kiowa, Nahuatl
ocean	‘big water’	Biloxi, Natchez, Comanche, Nahuatl
pestle	‘child of mortar’	Choctaw, Totonac
rattlesnake 1	‘big snake’	Biloxi, Tunica, Tonkawa
rattlesnake 2	‘chief/king snake’	Biloxi, Tunica, Natchez, Yukatek (Mayan)
stable (horse)	‘horse house’	Biloxi, Atakapa, Comanche, Nahuatl
sugar	‘sweet salt’	Biloxi, Atakapa, Natchez, Choctaw, MTL
thumb	‘big/old hand’	Biloxi, Tunica, Atakapa, Natchez, Comanche
vein	‘blood house’	Biloxi, Atakapa
whisky	‘fire water’	Atakapa, Natchez, Tunica (‘heated water’)

As with borrowings, certain calques are particularly widespread: ‘long ear’ for mule/donkey, ‘strong house’ for jail, ‘nose hole’ for nostril, ‘chief snake’ for rattlesnake, ‘sweet salt’ for sugar, and ‘big hand’ for thumb. As with the borrowing for ‘metal’, the calque ‘chief snake’ for rattlesnake occurs not only in the LMV but also across the Gulf in the Mayan language Yukatek.

Some of the most widespread calques—butter, donkey, jail, sugar—were likely diffused through the MTL pidgin, which also contains the calques. Since extant data is limited for MTL, it is now impossible to know if other borrowings and calques were diffused through this medium, though it seems likely.

Both Chitimacha and Choctaw have ‘raccoon man’ for monkey.

6.3 Thomason borrowing scale.

While it is difficult to assess the degree of contact and convergence between languages in a Sprachbund, Thomason compiled a “borrowing scale” (2001: 70), which I have used to obtain a clearer picture of the intensity of contact between languages in the LMV. Although a borrowing scale is only a matter of probabilities, not possibilities, “these predications are robust… they are valid in the great majority of cases that have been described in the literature” (Thomason 2001: 70). Thomason’s scale relies heavily on the concept of basic vocabulary (see 6.2.1) in determining the degree of contact between languages.

Thomason borrowing scale:

(1) CASUAL CONTACT, in which only *non-basic vocabulary* is copied;

(2) SLIGHTLY MORE INTENSE CONTACT, in which copying includes function words and slight structural borrowing;

(3) MORE INTENSE CONTACT, in which there is *copying of basic as well as of non-basic vocabulary* and moderate structural borrowing; and

(4) INTENSE CONTACT, in which there is both heavy lexical and structural copying.

(Thomason 2001; italics mine)

Using Thomason's scale, we find level (3) to be the most adequate ranking for contact in the LMV based on the sharing of basic vocabulary. This indicates that the level of contact in the LMV was quite intense, and this assessment correlates with the intensity of contact implied by the phonetic/phonological and morphological data.

6.4 Other.

The following section is devoted to a discussion of what we can infer about agriculture, weaponry, migration, oral history, and possible LMV-Mesoamerican connections based on LMV lexical data.

6.4.1 LMV lexicon and agriculture.

At early LMV sites, farming, where it existed, was probably done only on a very limited basis, perhaps as private garden plots, so a sedentary population to tend crops was unnecessary, unlike some 4,700 years later when the arrival of large-scale maize agriculture demanded a large sedentary maintenance population.

There is evidence that farming to some degree may have begun in the LMV ca. 4000 BCE. Language evidence that demonstrates lack of copying of agricultural terminology in the LMV (see Fig. 6.3) indicates that LMV groups likely developed farming separately and independently. Nichols' (1992) proposal that a language area may be a residual zone for groups

who have been pushed into a peripheral area opens the possibility that many LMV groups may have been "pushed" into the region. One potential "push" factor could have been the arrival of Hopewell culture (the LMV Hopewell variant is what archaeologists call the 'Marksville culture' centered near present-day Marksville, Louisiana) ca. 100 CE, or possibly the Mississippian culture into the LMV.

TABLE 6.8: LMV lexemes related to planting and agriculture.

	Biloxi	Ofo	Atakapa	Natchez	Tunica	Chitimacha	Choctaw	MTL
Source	Dorsey-Swanton 1912	Dorsey-Swanton 1912	Swanton 1932	Haas ms	Haas 1952	Swadesh 1952 ms	Byington and Swanton 1915	Drechsel 1996
bean	tątka yį̨ki	ąkonaki	kimat	inawal	šihpari	uksgasma (*lit*. snake-corn)	bala / tobi	bala tohbe
crop				kimpaa'ikti		huwo, huu	awaya / hatip	
cultivate (crops), to					laču		toksali	
field	am??ni		neyuc nepom	peeLiluu 'land cleared off'	haluni	hukatsi	osaapa	osaba
gather, to	da	aktuwa		tem-hoo'iš	mari	heyct-	itannali	ayowa
gourd	kôô		kipadsu	iwi	šuhkali	kupu	isht kafa / shukshi okpulo / shukshubok	sheshekowa / sheshekoshe
grow / come up (of something planted), to		ith?		ecale-haa'iš / mip-haakiš	šuka	huštka-		
hoe	mąyįke / mik??ni		kantsau			čaahpada	chahe	čahe
hoe, to	mąyįke / mik??ni	tufthahe				aawit-	leeli / okchali / hopochi	
irrigate, to			kaukau hikikcne				lachali	
pitchfork	maastucutka						tali chufak	falakto
plant, to	ci / cu	akhe (*lit*. 'dig in certain place')	hi	paa-heluu'iš		ni gast-	hokchi	hokči
plow	paya		ne pom	caaškeh-šiiL	tamakini / halitamakini	ney šapti	isuba inchahe, yakni isht patafa	ehan ešt baša
plow, to	pay??ni	khewe (*lit*. dig-cause)	pom	kwee-helahciiš	maki	ney šapt-	aleli, yakni bashli, yakni pataffi	lokfe bašle
pumpkin	(t)ąthaani	?tą	moyum	iwišk(a-) (cf. Bi. turnip?)	šulihki	čiška	isito	(e)seto
rake					halitakosa		kalaffi; chupilhkash isht piha; onush api isht peli	
rake, to				weh-helahciiš		qapš heeti	itannali / peli	
scythe/sickle	tąsicayê	am?fi				keta	onush isht basha / onush isht almo	
seed	su	ifhu	šo	į̨c	tosu	kapi	nihi / atia	nihi
sow, to			pam ('throw')	wac-hoo'iš		witi- / witma-	fimmi, hokchi	
squash	(t)ąthaani			cooy	šulihtohku		isito	(e)seto
sunflower			texlk lak ('glittering? flower')				hashi (same as sun)	

6.4.1.1 Maize in the LMV.

Maize (*Zea mays* ssp. *mays*) was first domesticated as a wild grass, called teosinte (*Zea mays* ssp. *parviglumis*) (from Nahuatl *teocintli*), which currently grows primarily in the Rio

Balsas region of western Mexico (Blake 2010: 45). Maize was first domesticated in this region between ca. 8000-4300 BCE (Jaenicke-Després and Smith 2010: 32).

Maize arrived in North America from Mesoamerica (Blake 2010: 45). Maize appears in southwestern North America ca. 3000 BCE, then later in eastern North America ca. 1500 BCE at Lake Shelby (Clark and Knoll 2005; Fearn and Liu 1995: 109), in modern-day coastal Alabama near Mobile Bay, and ca. 400 BCE at the north end of the Tombigbee River, a tributary of the Mobile River, in what is now northeastern Mississippi (ibid.: 110)[31]. Maize occurs in the Cumberland Plateau region ca. 200 CE at the Icehouse Bottom site and ca. 400 CE at Tuskeegee Pond, both in modern-day eastern Tennessee (ibid.). The first securely dated evidence of maize (based on pollens) in eastern North America occurs near the Mobile Bay region. "The genetic characteristics of maize in the American Northeast are most similar to southwestern maize" (Blake 2010: 47), suggesting that "maize from the Southwest was carried eastward across the Plains" (White 2005: 16). "But in the Southeast there is greater genetic variability in the different strains of maize … possibly indicating more direct connections with Mexican varieties" (ibid.). This suggests that southeastern North American strains of maize may have arrived directly from Mexico, perhaps via Mobile Bay.

Large-scale maize farming appears to have largely accompanied, although data to support this is "generally inferential, with site locations and settlement patterns cited as evidence that maize agriculture was practiced" (Kidder and Fritz 1993: 283). Increased birth rate and reduced rate of human infant mortality lead to "the very large increase in population density which can result from the inception of farming in a given area" (Renfrew 2002: 8). The decline of freshwater ecosystems being a good indicator of growing population worldwide, there was a

[31] Though peripheral to this dissertation, evidence of maize also occurs in south-central Florida ca. 500 BCE and in the Dismal Swamp region of coastal Virginia ca. 200 BCE (Fearn and Liu 1995: 110).

decline in freshwater mussels in the Southeast beginning ca. 3000 BCE likely related to the development of agriculture (Peacock et al. 2005). This time period agrees with the archaeological evidence presented above. This decline became even more evident ca. 1000 CE, likely with the advent of maize agriculture (ibid.: 549). Further, women were the primary farmers in most of these societies (Tunicas being an exception in which men did the majority of farming [Brain 1988]), and female work-related medical pathology changed significantly in a manner consistent with "a model of increased labor for women with the acquisition of maize agriculture" (Buikstra et al. 1986: 531).

6.4.2 LMV lexicon and weaponry.

Terms for weaponry in the LMV support what we have seen with farming vocabulary: there is little to no borrowing involved in either of these cultural spheres (see Table 6.4). This may tell us something about timelines. Since the bow and arrow did not arrive in North America until ca. 600 CE, it seems likely that speakers of LMV languages were not in contact at the time of this weapon's arrival. From this we can infer that most of the languages treated in this dissertation were likely not in the LMV around this time.

TABLE 6.9: Weaponry in the LMV.

Biloxi	Ofo	Tunica	Atakapa	Chitimacha	Natchez	W Musk.	MTL	English
ąksi	?fhi	ala	tik / skenne	?akt (also flute, reed, horn, etc.)	išahkw	oski / šumo naki	oske nake šomate	arrow
ąksi	ųfaptąta (lit. ?fhi + ?) / šleka	wiškatahi	te (cf. Maya t'e 'tree/wood', but also At. tei 'vine' and MTL ete 'wood/tree')	?akt	kunahal'ete'ikti	iti tanąpo	ete tanąbo	bow
aphuh??ni		alatašuru	tikpuns (lit. 'arrow-blow')	puhtibak	uwaloho / uwatololkop	oski ?ųpa	oske tanąbo	blowgun
ąpanah??ni		roha 'stab'	tsa	zhaat- / zhama-	ęcakhal'iš	api, išt baha		spear

6.4.3 Language, migration, and oral history.

We should take into account migration stories of Native peoples themselves in assessing their possible origins and migrations. Scholars often minimize tales of oral tradition, perceiving them as largely irrelevant for serious academic consideration, or, as Deloria puts it, "attacking Indian knowledge of the past as fictional mythology" (Deloria 1997: 9). Migration legends gathered from indigenous Creek sources speak of "a general 'Moskoqui' migration from northwest Mexico (!) to eastern Alabama/western Georgia...." (Galloway 1995: 329, original emphasis), which Galloway touts as "romanticized" and "fictionalized" (ibid.). This despite the fact that, in Haas' unpublished field notes, a Creek consultant informed her of a Muskogean migration from Mexico occurring in the ninth century, thus not only specifying Mexico as the origin point but also an actual time period of migration, an idea of which Haas was apparently less critical and felt was important enough to include in her notes. Add to this that Native American "[r]eligious ceremonials generally involved the recitation of the origin and *migration* stories" (Deloria 1997: 37; emphasis mine) and, therefore, should not be so readily dismissed by Western scholars and academics.

6.4.4 Possible LMV-Mesoamerica connections.

Biloxis and Ofos copied Caddoan terms for maize. Yet, so far, the absence of material evidence for maize in regions such as what is now western Louisiana and along the Red River, where Caddoans are known to have lived, leads one to consider the possibility of Gulf coastal maritime trade in lieu of overland trade. Linguistic evidence for a possible Gulf coastal aquatic trade route comes from several languages along the northern Gulf—Alabama, Koasati, MTL, Chitimacha, and Catawba—which share a possible cognate with a word for 'maize' from the Totonac language of east-central Mexico. Since the first three languages mentioned were in close

proximity to Mobile Bay, such a potential borrowing would support this region as a Gulf coastal trading port.[32] Yet another potential borrowing for 'maize' occurring in Atakapa possibly from Proto-Maya or Soke (Zoque) would further support possible maritime Gulf trade between the Lower Mississippi Valley (LMV) and Mexico.

Choctaw-Chickasaw shares calques that are also found in Mesoamerica, including 'child of mortar' for pestle and 'mother of hand' for thumb. 'House mouth' for door appears in Atakapa, Chitimacha, and Natchez, as well as in Mayan. Such calques help bolster the argument for Muskogean and Chitimacha origins in Mesoamerica.

Possible borrowings between Chitimacha and Atakapa in the LMV with languages on the western periphery into the Rio Grande Valley and Mexico include:

TABLE 6.10

back, bad, divide-separate, whip	Atakapa-Coahuiltec
black	Atakapa-Tunica-Karankawa
dog	Chitimacha-Karankawa-Cotoname
(to) fall, ocean	Atakapa-Karankawa
now	Atakapa-Choctaw/Chickasaw-MTL-Coahuiltec
shell	Atakapa-Chitimacha-Huastec
six	Atakapa-Coahuiltec-Nahuatl
tooth	Chitimacha-Karankawa-Comecrudo
water	Atakapa-Coahuiltec-Tonkawa

Such borrowings, including basic words, suggest a continuum of intimate language contact from the LMV over into Gulf coastal Mexico, suggesting trade routes between the LMV, the Rio Grande Valley, and the Mexican Gulf. (It also suggests a possible much broader Sprachbund, extending from the Rio Grande Valley or even northeastern Mexico all the way to the Atlantic seaboard. [See Chapter 7.]) Archaeological evidence supports language contact

[32] Though peripheral to this dissertation, Cherokee has a potential cognate for 'maize,' *selu*, shared with Nahuatl *xilotl* 'ear of (tender) corn' (Hall 2012: 61). Cherokees and Catawbas were both located near the head of the Chattahoochee River (near the borders of modern-day North Carolina and South Carolina), which is a tributary of the Apalachicola River originating on the Gulf coast of present-day western Florida. This indicates a possible trade route up these rivers from the Gulf of Mexico.

evidence of Mississippian-era contact between the LMV and the Huasteca region of Mexico (see, for example, Zaragoza-Ocaña 2005 and Cabrera 2005). This indicates that northeastern Mexico was indeed an extension of the "Southeast" culture area traditionally considered, in line with modern political boundaries, to end at the modern U.S.-Mexico border in Texas. However, Mexican sites, such as Tantoc and Tlacolula (San Luis Potosi) and Las Flores and El Triunfo (Tamaulipas), "have earthen mounds very different from the architecture of classic Mesoamerica" (Zaragoza-Ocaña 2005: 249), looking more like structures of the U.S. Southeast. Other evidence includes sculptures and other artistic motifs appearing very similar to motifs found in parts of the U.S. Southeast (Zaragoza-Ocaña 2005).

The region of the northern part of Tamaulipas, Mexico and the southern part of Texas has been considered to be a great barrier to trade and communication due to its hostile desert environment. This region was supposedly inhabited

> only by the nomadic groups who were well adapted to those climatic conditions. For this reason interactions among the prehistoric people were more likely facilitated by the maritime and fluvial routes that we know were already very well established in the sixteenth century, such routes as the Pánuco River, the Gulf Coast shoreline, and the Mississippi River (Zaragoza-Ocaña 2005: 248).

We might also add Mobile Bay to this list of maritime routes that may have been well known to traders.

6.5 Summary.

By far the most lexical borrowings in the LMV occur in the realm of zoology, with 19 terms having been copied between two or more languages. The next closest category is anatomy,

or body parts, with 11 terms copied. Agricultural and food terms rank a close third with nine terms copied.

Atakapa and Biloxi have 16 terms copied between them. Biloxis and Choctaws, however, share only six terms. Biloxis were found living in close proximity to Choctaws ca. 1700. Since the number of borrowed lexical terms is greater between Biloxi and Atakapa than between Biloxi and Choctaw, this would seem to indicate that Biloxis were in much closer contact with Atakapans and for perhaps a longer period of time than they were with Choctaws. This may indicate a fairly recent migration of Biloxis from perhaps somewhere west of the Mississippi River, thus placing them closer to Atakapas. Borrowing between Biloxi and Chitimacha, Choctaw, and Natchez was fairly equal, indicating little if any status differentiation between these groups. The much lesser rate of borrowing between Biloxi and Chitimacha than between Biloxi and Atakapa (six with the former, 16 with the latter), who were just east of the Chitimachas, would indicate a more intimate and frequent rate of contact between Biloxis and Atakapans.

The relatively high number of borrowings between Chitimacha and Natchez (9) indicates close contact between these two groups.

Chapter 7

Endings and beginnings

7.0 Endings: summary and conclusions.

In this chapter I focus on endings, i.e., summary and conclusions of the foregoing analysis, as well as on beginnings, i.e., what questions remain to be answered and what the implications are for further research. Any conclusions drawn at this point are tentative, subject to correction or modification on the basis of information on languages not included in the current survey, or on the basis of better information on languages that were included.

7. 1 History, geography, and people.

We have seen that the geography and environment of the Lower Mississippi Valley (LMV) was conducive to the development and maintenance of a Sprachbund. The myriad waterways of the region, including one of the world's longest rivers, provided excellent communication and trade routes while, at the same time, allowing enough anonymity to provide a degree of autonomy and maintenance of separate cultures, a situation ideally suited to a Sprachbund (Matras 2009).

The LMV has a lengthy history dating well back into what archaeologists have termed the Archaic period. The period ca. 3500 BCE is especially important, since this time period represents the first earthen monumental mound structures built in the Americas, constructed in the LMV in what is now northeastern Louisiana. The LMV seems to lie at the very heart of the mound-building tradition in North America, a tradition that lasted into the 18th century. Unfortunately, we do not know who frequented or inhabited the first mound sites like Watson Brake and Poverty Point.

We do know, based on post-European documentation, which groups came to settle in the LMV: Atakapas, Biloxis, Chitimachas, Choctaw-Chickasaws, Natchez, Ofos, and Tunicas, whose languages and their interactions are the subject of this dissertation. Language evidence (Fig. 6.4) suggests that most of these peoples already were at least small-scale farmers who, for various reasons, either willingly or involuntarily migrated to the LMV, where farming on a large scale was not practiced until ca. 1200 CE. It was around this time that large-scale agriculture, dominated by maize, developed in the LMV, probably in tandem with the spread of Mississippian (which became Plaquemine in the LMV) Culture, which had already been spreading from the north toward the south and west for a couple hundred years before reaching its tentacles into the LMV.

It has been suggested that Proto-Muskogeans (ancestors of Choctaws and Chickasaws) may have migrated from northern Mexico while Proto-Siouans (ancestors of Biloxis and Ofos) likely migrated from the Appalachian Mountains region. From where came Atakapas, Chitimachas, Natchez, and Tunicas is largely unknown, although new language evidence suggests that Proto-Chitimachas may also have migrated from Mexico (Brown et al.: 2011), and Proto-Tunicas may have migrated from the Rocky Mountains or even from farther west (see Chapter 1). The LMV may have been a "residual zone" (Nichols 1992) in which several languages from different families were somehow propelled into this peripheral area (LMV) where an amount of anonymity from a spreading economic, political, and religious culture farther north, perhaps the Mississippian, was possible.

In any case, the peoples who settled in the LMV came into contact with each other through trade, intergroup gathering and feasting, intergroup marriage, and, at least on occasion, through war. We have seen that certain broad-ranging lexical, in addition to phonetic and

morphological, borrowing may have been the result of such intergroup gatherings, perhaps involving hunting, feasting, and dancing. Such intimate interactions resulted in bilingualism and multilingualism, which in turn led to aspects of their languages sharing certain features.

TABLE 7.1: Overall LMV and periphery features.

	feature	source(s)	Atakapa	Biloxi	Chit.	MTL	Natchez	Ofo	Tunica	Western Muskogean
	PHONETIC/PHONOLOGICAL									
1	nasalized vowels	Sherzer 1976	2	2	0	2	2	2	0	2
2	ejective stop	Kaufman 2012	0	0	1	0	0	0	0	0
3	vowel alternation i ~ u	Kaufman 2012	0	2	0	0	2	n/d	2	0
4	word initial h ~ 0	Kaufman 2012	2	2	0	2	0	n/d	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	0	0	0	0	0	0	0
6	/k^w/	Sherzer 1976	0	0	0	0	1	0	0	0
7	/f/	Sherzer 1976	2	2	0	2	0	2	0	2
8	/x/	Sherzer 1976	1	1	0	0	0	1	0	0
9	/h/	Sherzer 1976	1	1	1	1	1	1	1	1
10	/l/	Sherzer 1976	1	0	0	1	1	1	1	1
11	/ʔ/ lateral fricative	Sherzer 1976	2	0	0	2	0	0	0	2
12	glottalized nasals	Sherzer 1976	0	0	0	0	0	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	1	0	0	0	0	0	0	0
14	/r/	Sherzer 1976	0	0	0	0	0	0	1	0
15	/q/	Sherzer 1976	0	0	0	0	0	0	0	0
16	r/l opposition	Sherzer 1976	0	0	0	0	0	0	1	0
17	s/š opposition	Sherzer 1976	0	0	1	1	0	1	1	1
18	/tl/	Kaufman 2012	1	0	0	0	0	0	0	0
19	glottalized semivowels	Sherzer 1976	0	0	0	0	0	0	0	0
20	preaspirated voiceless stops	Campbell 1997	0	0	0	0	0	0	0	1
21	retroflex sibilants	Campbell 1997	0	0	0	2	2	0	2	2
22	vowel harmony	Nicklas 1994	0	0	0	0	2	0	2	2
23	five-vowel system	Sherzer 1976	1	1	1	0	1	1	1	0
24	tone	Kaufman 2012	0	0	0	0	1	0	0	0
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	0	0	1	0	1	0	1	0
	TOTALS		**14**	**11**	**5**	**13**	**14**	**9**	**13**	**14**
	NOMINALS									
26	focus particle	Campbell 1997	2	2	2	0	2	n/d	0	2
27	overtly marked case system	Sherzer 1976	0	1	0	0	0	0	1	1
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	1	1	0	0	1	n/d	0	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0	0	0	0	1	0
30	animate/inanimate gender	Sherzer 1976	0	0	0	0	0	0	0	0
31	plurality in pronouns	Sherzer 1976	1	1	1	0	1	1	1	1
32	plurality in nouns	Sherzer 1976	1	1	1	0	1	1	0	1
33	inclusive/exclusive plural in pronouns	Sherzer 1976	0	0	0	0	0	0	0	1
34	dual in pronouns	Sherzer 1976	0	0	0	0	1	0	1	1
35	dual in nouns	Sherzer 1976	0	0	0	0	0	0	1	0
36	locative suffixes	Sherzer 1976	1	1	1	0	1	1	1	1
37	definite article	Kaufman 2012	0	1	1	0	1	n/d	1	1
38	demonstrative follows noun	Campbell 1997	0	1	0	1	0	1	0	1
	VERBALS									
39	subject person prefixes	Sherzer 1976	1	1	1	0	1	1	1	1
40	reduplication in stems	Sherzer 1976	1	0	?	0	1	0	1	1
41	instrumental markers	Sherzer 1976	1	1	1	0	1	1	1	1
42	evidentiality marking	Sherzer 1976	0	1	0	0	1	n/d	1	1
43	indir anim obj pref/valence reducer	Kaufman 2012	2	0	0	0	2	0	0	2
44	indir inanim obj pref/valence reducer	Kaufman 2012	2	0	0	0	2	0	0	2
45	reference tracking	Sherzer 1976	2	0	0	0	2	n/d	2	2
46	SOV word order	Sherzer 1976	1	1	1	0	1	1	1	1
47	quinary number system (base 5)	Campbell 1997	0	1	1	1	1	1	1	1
48	vigesimal number system (base 20)	Kaufman 2012	0	0	0	0	0	0	0	0
49	positional verb auxiliaries	Campbell 1997	2	2	2	0	2	2	2	2
50	circumfixed negative construction	Campbell 1997	0	1	0	0	0	1	0	1
51	number suppletion/verbal arguments	Kaufman 2012	2	2	2	0	0	n/d	2	2
	TOTALS		**20**	**19**	**14**	**2**	**22**	**11**	**19**	**27**
	TOTALS		**34**	**31**	**19**	**15**	**36**	**20**	**32**	**41**

	feature	source(s)	Eastern Muskogean	Quapaw (Dhegiha)	Caddoan	Yuchi	Karankawa	Tonkawa	Kiowa	Apache
	PHONETIC/PHONOLOGICAL									
1	nasalized vowels	Sherzer 1976	2	2	0	2	2	0	2	2
2	ejective stop	Kaufman 2012	0	1	1	1	0	0	1	1
3	vowel alternation i ~ u	Kaufman 2012	0	?	0	0	0	0	0	0
4	word initial h ~ 0	Kaufman 2012	0	?	0	0	0	0	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	0	0	0	0	0	0	0
6	/k^w/	Sherzer 1976	0	0	1	0	1	1	0	0
7	/f/	Sherzer 1976	2	0	0	2	0	0	0	0
8	/x/	Sherzer 1976	0	1	0	1	1	0	0	1
9	/h/	Sherzer 1976	1	1	1	1	1	1	1	1
10	/l/	Sherzer 1976	1	0	0	1	1	1	1	1
11	/ɬ/ lateral fricative	Sherzer 1976	2	0	0	2	2	0	0	2
12	glottalized nasals	Sherzer 1976	0	0	0	1	0	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	0	0	0	0	1	0	0	0
14	/r/	Sherzer 1976	0	0	1	0	1	0	0	0
15	/q/	Sherzer 1976	0	0	0	0	0	0	0	0
16	r/l opposition	Sherzer 1976	0	0	0	0	1	0	0	0
17	s/š opposition	Sherzer 1976	1	1	1	1	1	0	0	1
18	/tl/	Kaufman 2012	0	0	0	0	0	0	1	1
19	glottalized semivowels	Sherzer 1976	0	0	0	1	0	0	0	?
20	preaspirated voiceless stops	Campbell 1997	1	0	0	1	0	0	0	0
21	retroflex sibilants	Campbell 1997	2	0	0	0	0	0	0	0
22	vowel harmony	Nicklas 1994	2	0	0	0	n/d	0	0	0
23	five-vowel system	Sherzer 1976	0	1	0	1	1	1	1	0
24	tone	Kaufman 2012	0	0	1	0	n/d	0	0	1
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	0	0	0	0	0	0	0	0
	TOTALS		**14**	**7**	**6**	**15**	**13**	**4**	**7**	**11**
	NOMINALS									
26	focus particle	Campbell 1997	2	?	0	2	n/d	0	?	0
27	overtly marked case system	Sherzer 1976	1	1	1	0	n/d	1	0	0
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	1	?	0	1	n/d	1	0	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0	1	1	0	0	0
30	animate/inanimate gender	Sherzer 1976	0	0	0	1	0	0	0	0
31	plurality in pronouns	Sherzer 1976	1	1	1	1	n/d	1	1	0
32	plurality in nouns	Sherzer 1976	1		1	1	n/d	1	1	0
33	inclusive/exclusive plural in pronouns	Sherzer 1976	0	0	1	1	n/d	0	0	0
34	dual in pronouns	Sherzer 1976	0	1	1	?	n/d	1	1	1
35	dual in nouns	Sherzer 1976	0	0	0	0	n/d	0	1	0
36	locative suffixes	Sherzer 1976	1	1	1	1	n/d	1	1	1
37	definite article	Kaufman 2012	?	1	0	1	0	?	?	?
38	demonstrative follows noun	Campbell 1997	?	0	0	0	n/d	1	?	0
	VERBALS									
39	subject person prefixes	Sherzer 1976	0	1	1	1	0	0	1	1
40	reduplication in stems	Sherzer 1976	1	1	1	1	n/d	1	1	0
41	instrumental markers	Sherzer 1976	1	1	1	1	n/d	1	0	0
42	evidentiality marking	Sherzer 1976	1	1	1	1	n/d	1	1	1
43	indir anim obj pref/valence reducer	Kaufman 2012	0	0	0	0	n/d	0	?	?
44	indir inanim obj pref/valence reducer	Kaufman 2012	2	2	0	2	n/d	0	?	?
45	reference tracking	Sherzer 1976	2	0	0	?	n/d	2	2	?
46	SOV word order	Sherzer 1976	1	1	1	1	n/d	1	?	1
47	quinary number system (base 5)	Campbell 1997	1	1	1	1	n/d	1	1	1
48	vigesimal number system (base 20)	Kaufman 2012	0	0	0	0	n/d	0	0	0
49	positional verb auxiliaries	Campbell 1997	2	2	2	2	n/d	0	?	0
50	circumfixed negative construction	Campbell 1997	?	1	0	0	n/d	0	?	0
51	number suppletion/verbal arguments	Kaufman 2012	2	2	0	0	n/d	0	0	0
	TOTALS		**20**	**18**	**14**	**20**	**1**	**14**	**11**	**6**
	TOTALS		**34**	**25**	**20**	**35**	**14**	**18**	**18**	**17**

	feature	source(s)	Comanche	Shawnee	Coahuiltec	Timucua	Cherokee	Catawba	Nahuatl	Huastec
	PHONETIC/PHONOLOGICAL									
1	nasalized vowels	Sherzer 1976	0	0	0	0	2	2	0	0
2	ejective stop	Kaufman 2012	0	0	1	0	0	0	0	1
3	vowel alternation i ~ u	Kaufman 2012	0	0	0	0	0	?	0	0
4	word initial h ~ 0	Kaufman 2012	0	0	0	0	0	?	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	1	1	0	0	0	0	1
6	/k^w/	Sherzer 1976	1	0	1	1	0	0	1	1
7	/f/	Sherzer 1976	0	0	0	2	0	0	0	0
8	/x/	Sherzer 1976	0	0	1	0	0	0	0	1
9	/h/	Sherzer 1976	1	1	1	1	1	1	1	0
10	/l/	Sherzer 1976	0	1	1	1	1	0	1	1
11	/ʔ/ lateral fricative	Sherzer 1976	0	0	0	0	2	0	0	0
12	glottalized nasals	Sherzer 1976	0	0	0	0	0	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	0	0	0	0	0	0	0	0
14	/r/	Sherzer 1976	1	0	0	1	0	1	0	1
15	/q/	Sherzer 1976	0	0	0	0	0	0	0	?
16	r/l opposition	Sherzer 1976	0	0	0	1	0	0	0	1
17	s/š opposition	Sherzer 1976	0	0	1	0	0	1	1	0
18	/tl/	Kaufman 2012	0	0	0	0	1	0	1	0
19	glottalized semivowels	Sherzer 1976	0	0	0	0	0	0	0	0
20	preaspirated voiceless stops	Campbell 1997	0	0	0	0	0	0	0	0
21	retroflex sibilants	Campbell 1997	0	0	0	0	0	0	0	0
22	vowel harmony	Nicklas 1994	0	0	2	0	0	0	0	0
23	five-vowel system	Sherzer 1976	1	1	1	1	1	1	0	1
24	tone	Kaufman 2012	0	0	0	0	1	0	0	0
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	0	0	0	0	0	0	0	?
	TOTALS		**4**	**4**	**10**	**8**	**9**	**6**	**5**	**8**
	NOMINALS									
26	focus particle	Campbell 1997	0	0	0	0	2	0	?	?
27	overtly marked case system	Sherzer 1976	1	0	1	0	0	0	?	0
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	1	0	0	0	0	1	1	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0	0	1	0	0	0
30	animate/inanimate gender	Sherzer 1976	1	1	0	0	0	0	0	0
31	plurality in pronouns	Sherzer 1976	0	1	1	1	1	1	1	1
32	plurality in nouns	Sherzer 1976	1	1	1	1	1	?	1	?
33	inclusive/exclusive plural in pronouns	Sherzer 1976	1	1	0	0	1	0	?	?
34	dual in pronouns	Sherzer 1976	1	0	0	0	1	0	0	0
35	dual in nouns	Sherzer 1976	1	0	0	0	0	0	0	0
36	locative suffixes	Sherzer 1976	1	1	1	1	1	1	1	?
37	definite article	Kaufman 2012	?	?	0	1	?	1	0	?
38	demonstrative follows noun	Campbell 1997	0	0	1	0	0	1	?	?
	VERBALS									
39	subject person prefixes	Sherzer 1976	1	1	1	1	1	1	1	1
40	reduplication in stems	Sherzer 1976	1	1	0	1	0	1	?	?
41	instrumental markers	Sherzer 1976	1	1	0	1	1	1	?	0
42	evidentiality marking	Sherzer 1976	1	?	0	?	1	1	?	0
43	indir anim obj pref/valence reducer	Kaufman 2012	?	?	?	?	?	?	1	0
44	indir inanim obj pref/valence reducer	Kaufman 2012	?	?	1	0	0	2	2	0
45	reference tracking	Sherzer 1976	2	0	2	0	?	0	?	0
46	SOV word order	Sherzer 1976	1	0	1	1	1	?	?	0
47	quinary number system (base 5)	Campbell 1997	1	1	0	?	0	1	0	0
48	vigesimal number system (base 20)	Kaufman 2012	0	0	1	0	0	0	1	1
49	positional verb auxiliaries	Campbell 1997	0	0	0	0	2	2	0	0
50	circumfixed negative construction	Campbell 1997	0	0	0	0	1	0	?	0
51	number suppletion/verbal arguments	Kaufman 2012	0	0	0	0	0	2	0	0
	TOTALS		**16**	**9**	**11**	**8**	**15**	**16**	**9**	**3**
	TOTALS		**20**	**13**	**21**	**16**	**24**	**22**	**14**	**11**

	feature	source(s)	Mayan (other)	Totonac	English
	PHONETIC/PHONOLOGICAL				
1	nasalized vowels	Sherzer 1976	0	0	0
2	ejective stop	Kaufman 2012	1	0	0
3	vowel alternation i ~ u	Kaufman 2012	0	0	0
4	word initial h ~ 0	Kaufman 2012	0	0	0
5	/ʔ/ interdental fricative	Sherzer 1976	0	0	1
6	/k^{w}/	Sherzer 1976	0	0	1
7	/f/	Sherzer 1976	0	0	2
8	/x/	Sherzer 1976	1	0	0
9	/h/	Sherzer 1976	1	1	1
10	/l/	Sherzer 1976	1	1	1
11	/ʔ/ lateral fricative	Sherzer 1976	0	2	0
12	glottalized nasals	Sherzer 1976	0	0	0
13	/ʔ/ velar nasal	Sherzer 1976	0	1	1
14	/r/	Sherzer 1976	1	0	0
15	/q/	Sherzer 1976	1	1	0
16	r/l opposition	Sherzer 1976	1	0	0
17	s/š opposition	Sherzer 1976	0	1	1
18	/tl/	Kaufman 2012	0	0	0
19	glottalized semivowels	Sherzer 1976	0	0	0
20	preaspirated voiceless stops	Campbell 1997	0	0	0
21	retroflex sibilants	Campbell 1997	2	2	0
22	vowel harmony	Nicklas 1994	2	2	0
23	five-vowel system	Sherzer 1976	1	0	1
24	tone	Kaufman 2012	1	0	0
25	devoicing of sonorants (m,n,l,r,w,y) word final and before -voice consonant	Campbell 1997	1	0	0
	TOTALS		**14**	**11**	**9**
	NOMINALS				
26	focus particle	Campbell 1997	0	0	0
27	overtly marked case system	Sherzer 1976	0	0	0
28	reduplication in stems (for nominal distribution/plurality)	Sherzer 1976	0	1	0
29	masculine/feminine gender distinction	Sherzer 1976	0	0	0
30	animate/inanimate gender	Sherzer 1976	0	0	0
31	plurality in pronouns	Sherzer 1976	1	1	1
32	plurality in nouns	Sherzer 1976	1	1	1
33	inclusive/exclusive plural in pronouns	Sherzer 1976	0	0	0
34	dual in pronouns	Sherzer 1976	0	0	0
35	dual in nouns	Sherzer 1976	0	0	0
36	locative suffixes	Sherzer 1976	1	1	0
37	definite article	Kaufman 2012	1	1	0
38	demonstrative follows noun	Campbell 1997	?	0	0
	VERBALS				
39	subject person prefixes	Sherzer 1976	1	1	0
40	reduplication in stems	Sherzer 1976	?	?	0
41	instrumental markers	Sherzer 1976	0	1	0
42	evidentiality marking	Sherzer 1976	0	1	0
43	indir anim obj pref/valence reducer	Kaufman 2012	0	0	0
44	indir inanim obj pref/valence reducer	Kaufman 2012	0	2	0
45	reference tracking	Sherzer 1976	0	0	0
46	SOV word order	Sherzer 1976	0	0	0
47	quinary number system (base 5)	Campbell 1997	0	0	0
48	vigesimal number system (base 20)	Kaufman 2012	1	1	0
49	positional verb auxiliaries	Campbell 1997	0	2	0
50	circumfixed negative construction	Campbell 1997	1	0	0
51	number suppletion/verbal arguments	Kaufman 2012	0	2	0
	TOTALS		**7**	**15**	**2**
	TOTALS		**21**	**26**	**11**

7. 2 Phonetics and phonology.

All LMV languages except Chitimacha and Tunica have nasalized vowels. All LMV languages except Biloxi and Chitimacha have /l/. Devoicing of sonorants occurs in Chitimacha, Natchez, and Tunica, but it is now impossible to know if any or all of these languages originally possessed this feature or if it was copied between languages. Ejective stops, /kʷ/, /ŋ/, /r/ (including /r/ and /l/ opposition), /tl/, preaspirated voiceless stops, vowel harmony, and pitch/tone are present in two or fewer languages of the region, and, in accordance with my definition of a Sprachbund, are not relevant in determining the LMV as a Sprachbund.

Based on the number of phonetic features present in LMV languages as demonstrated in Figure 4.1, Western Muskogean, Natchez, and Atakapa show the highest total of LMV phonetic features followed closely by MTL, Ofo, and Tunica. Chitimacha shows the lowest number of LMV phonetic and phonological features.

7. 3 Morphology.

The highest ranking LMV language in terms of morphological features is Choctaw-Chickasaw. Natchez and Atakapa are next highest, followed by Biloxi, Tunica, Chitimacha, Ofo, and MTL. The latter, as to be expected, scores low in ranking of morphological features since there are almost no morphological features in the pidgin. Ofo ranks low, not so much because it shares fewer morphological features with the rest of the LMV, but more because data are simply indeterminate for several of the features. The least LMV language, in both morphological and phonetic and phonological ranking, is Chitimacha.

The fact that Natchez comes in a close second to Choctaw-Chickasaw in morphological ranking may indicate that Natchez and the Muskogean languages are indeed remotely genetically

related, as was posited by Haas. Or, since Natchez speakers were part of the Choctaw Confederacy after the French destroyed the Natchez homeland, the many common features may be due to intimate contact in post-European times.

7. 4 Lexical.

As in other Sprachbünde, the LMV shares a sizeable number of lexical borrowings. Such lexical borrowing ranges from between only two languages to several. The most lexical borrowings in the LMV occur in the semantic realm of zoology, with 19 terms having been copied between two or more languages. The next closest category is anatomy, or body parts, with 11 terms copied. Agricultural and food terms rank a close third with nine terms copied.

As between specific LMV languages, Atakapa and Biloxi have 16 terms copied between them. Biloxis and Choctaws, however, share only six terms. Biloxis were found living in close proximity to Choctaws ca. 1700. Since the number of borrowed lexical terms is greater between Biloxi and Atakapa than between Biloxi and Choctaw, this would seem to indicate that Biloxis were in much closer contact with Atakapans and for perhaps a longer period of time than they were with Choctaws. This may indicate a fairly recent migration of Biloxis from perhaps somewhere west of the Mississippi River, thus placing them closer to Atakapas. Borrowing between Biloxi and Chitimacha, Choctaw, and Natchez was fairly equal, indicating little if any status differentiation between these groups. The much lesser rate of borrowing between Biloxi and Chitimacha than between Biloxi and Atakapa (six with the former, 16 with the latter), who were just east of the Chitimachas, would indicate a more intimate and frequent rate of contact between Biloxis and Atakapans. The relatively high number of borrowings between Chitimacha and Natchez (9) indicates a particularly high level of contact between these two groups.

The Leipzig-Jakarta (2009) 100 basic word list was judged to be superior to the Swadesh 100 basic word list and was used in this study. Per the use of this list, Atakapa, Chitimacha, and Biloxi have the largest number of shared *basic* vocabulary with 9, 8, and 8 respectively. Tunica and Natchez have 7 and 6 respectively. Ofo and Choctaw-Chickasaw rank the lowest with only 1 and 0 respectively. In addition, Atakapa and Chitimacha share basic words with languages on the periphery of the LMV: Comecrudo, Cotoname, Karankawa, and Tonkawa.

Particularly widespread borrowings in the LMV and into the periphery are terms for bison/buffalo, bullfrog, cut, goose, metal, robin, split, turn, water, and woodpecker. The widespread copying of these terms across several languages of different genetic stocks may indicate that these items were particularly culturally relevant, perhaps in such multigroup activities as trade, hunting, and feasting.

7.5 Concluding analysis.

While I believe a thorough analysis of available materials on the eight languages here analyzed has been performed, it was impossible for this author, not having fluency in and intimate knowledge of most of the languages involved, to avoid possible oversight of certain features or data. For instance, grammars were employed in this analysis with the expectation that, if a particular feature were present in a language, it would have been noted by previous scholars. The absence of native-speaker intuition on my part and/or the previous oversight of potential data on the part of prior scholars may result in certain data being overlooked. Corrections and adjustments may indeed need to be made, but hopefully only to a small part of this overall analysis.

I conclude this study by determining that, after analyzing as much of the extant data as possible presented here, the LMV is indeed a valid Sprachbund. The following features are what primarily characterize the LMV as a Sprachbund, beginning with phonetic and ending with morphological features:

TABLE 7.2

1. Vowel nasalization (Atakapa, Biloxi, Choctaw-Chickasaw, MTL, Natchez, Ofo).
2. Alternation of /h/ and Ø in word initial position (Atakapa, Biloxi, MTL).
3. Phoneme /f/ (Atakapa, Biloxi, Choctaw-Chickasaw, MTL, Ofo).
4. Phoneme /x/ (Atakapa, Biloxi, Ofo).
5. Phoneme /ʂ/ (Choctaw-Chickasaw, MTL, Natchez, Tunica).
6. Phoneme /ɬ/ (Atakapa, Choctaw-Chickasaw, MTL).
7. Focus/topic/assertive marking (Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez).
8. Definite article (Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, Tunica).
9. Indefinite animate subject/object preverb or prefix (Atakapa, Choctaw-Chickasaw, Natchez).
10. Indefinite inanimate subject/object preverb or prefix (Atakapa, Choctaw-Chickasaw, Natchez).
11. Reference tracking (Biloxi, Choctaw-Chickasaw, Natchez, Tunica).
12. Verbal number suppletion (Atakapa, Biloxi, Choctaw-Chickasaw, Tunica).
13. Positional verb auxiliaries (Atakapa, Biloxi, Chitimacha, Choctaw-Chickasaw, Natchez, Ofo, Tunica).

These 13 features have been determined most characteristic in the analysis of the LMV as a Sprachbund partly because of their limited overall distribution beyond the LMV. Such limited distribution indicates a comparatively well defined area probably once hosting a high volume of ongoing contact through such means as trade, marriage, and ritual, thus leading to a high degree of language contact.

After analyzing the various linguistic features of the LMV, I must concur with Masica that “a great many linguistic features *do* pattern areally” (1976: 170, original emphasis), and there is indeed enough evidence of areal patterning to declare the LMV a valid Sprachbund. I also find that the features chosen for this study to determine the LMV as a Sprachbund confirm

their diagnostic status (ibid.), i.e., the features chosen were good ones for diagnosing the status of the LMV as a Sprachbund.

It is also clear that what Matras terms "'utterance modifiers' – an extended grouping of discourse-regulating elements, discourse markers, and focus particles" (1998: 281) have indeed likely been copied in LMV languages as a means of accommodation to the "cognitive pressure" (ibid.) to guide communication and facilitate comprehension in bi- and multilingual environments. While such "discourse-regulating elements" have been traditionally little studied in relation to grammar, their presence and potential borrowing among languages of the LMV signifies the importance of these elements in contact linguistics.

The "trait core area" (Masica 1976) of the LMV Sprachbund appears to be in its easternmost reaches near Mobile Bay, with Western Muskogean languages (Choctaw-Chickasaw and MTL) at its core, scoring 40 on the language feature chart (Fig. 1.13) closely followed by Natchez (33), Biloxi (32), Tunica (32), and Atakapa (29), while Chitimacha scores far behind the rest of the LMV pack at 20. The Eastern Muskogean languages, just on the eastern periphery of the LMV, score 32. This indicates a certain level of feature "attrition" just to the east of Mobile Bay, signifying the probable limit of the LMV Sprachbund on the east, although several LMV languages to the west of this core area also score about as highly as Eastern Muskogean.

I find ample evidence of overlapping Sprachbünde both to the east and west of the LMV. I tentatively term these neighboring language areas the Rio Grande Valley (RGV) Sprachbund (to the west of the LMV) and the Gulf-Atlantic (GA) Sprachbund (to the east of the LMV). What I have tentatively termed the RGV Sprachbund likely extends from Karankawa and Tonkawa, overlapping somewhat with Atakapa, on the western periphery of the LMV as here delimited, west to Coahuiltec in northeastern Mexico, while the latter extends from Eastern Muskogean,

overlapping somewhat with Western Muskogean, perhaps as far east as the Atlantic Ocean (Timucua) and as far north as the Carolinas (Catawba). Thus, what has before been termed the Southeastern Sprachbund most likely comprises two smaller Sprachbünde, the LMV and the GA, while a third, RGV, stretches far to the west into Mexico.

It is difficult, however, to precisely divide these hypothesized Sprachbünde, since, as the data demonstrate, there is considerable overlap of certain features, some extending far beyond the LMV and others not. These data support Masica's assertion that "the areal distribution of a linguistic feature may or may not correlate with the distribution of other linguistic features" (1976: 171) and support Campbell et al.'s assertion that "isoglosses typically fail to fall precisely into bundles, but often have varying extensions outward from an areal core" (1986: 546). Which do correlate and which do not are still beyond explanation (Masica 1976: 171).

What is evident from this study is that language and, to some degree, cultural, contact likely occurred over an extensive geographic area, from northeastern Mexico to the Atlantic Ocean, along the Gulf coast and into the Plains and the Appalachian interior.

We have seen that certain features are almost ubiquitous across the three hypothesized consecutive Sprachbünde:

TABLE 7.3

1. Overall occurrence of /h/.
2. Locative suffixes.
3. Subject person prefixes.
4. SOV constituent order.
5. Semi-quinary number system.
6. Evidentiality.
7. Overall lack of phoneme /q/.
8. Overall lack of phoneme /Θ/.
9. Overall lack of phoneme /ŋ/.
10. Overall lack of glottalized semivowels.
11. Overall lack of glottalized nasals.
12. Overall lack of tone.

13. Overall lack of masculine-feminine gender distinction.

Certain of these features likely extend well beyond these three Sprachbünde, and such features as locative suffixes and subject person prefixes were identified long ago as "widespread" features across North America (Sapir 1922). Whether such extensive features are the result of deep-level genetics or of contact and borrowing is a question still remaining to be definitively answered, if a definitive answer is even possible.

Examining the periphery of the LMV, including languages that would fit into my newly postulated RGV and GA Sprachbünde, we find Yuchi (Euchee) (35), Eastern Muskogean (32), and Quapaw (29) scoring well within reach of some LMV languages and which could perhaps be termed "transitional" languages (Campbell et al. 1986: 545). It is arguable whether these languages might be included in the LMV Sprachbund rather than on the LMV periphery or in an adjacent GA Sprachbund. In order to better determine this, however, the languages comprising the proposed GA Sprachbund (e.g., Creek, Timucua, Cherokee, Catawba) would need to be analyzed and calculated on a scale similar to this study in order to more accurately define its center (Creek [Muskogee]?) and how far its prospective features extend and perhaps overlap with the LMV.

This study shows a sizeable drop-off between Western Muskogean (40) and Eastern Muskogean (32), indicating a measurable divide between these two primary branches of this large language family, though the latter still scores within range of certain LMV languages. It is somewhat surprising to find Cherokee (25), Catawba (24), and even more distant Totonac (27) scoring close to the lowest LMV scores. Catawba is probably not as surprising as it may seem, however, given that it is considered to be remotely related to Siouan languages, which also exist in the LMV (Biloxi, Ofo). However, Totonac's relatively high score on par with LMV

languages, and even higher than the geographically closer Cherokee and Catawba, presents an intriguing enigma. Why does this central Gulf coastal Mexican language share many of the features of the northern Gulf languages? The much lower scores of Nahuatl (17) and Huastec (12) would seem to rule out overland trade and migration between the central Mexican and northern Gulf, since these languages intervened between these two regions. One possible explanation may be a maritime trade route between the Mississippi Valley (and Mobile Bay) and east-central Mexico via the Gulf, similar to that proposed by Masica between India and Ethiopia via the Arabian Sea (1976).

Not surprisingly there is evidence of close contact between pairs of LMV languages that were likely in more intimate contact with each other by virtue of their close geographical proximity. Atakapa and Chitimacha have certain morphological features in common as do Biloxi and Choctaw-Chickasaw. Biloxi and Ofo obviously share many features by virtue of their genetic relatedness, although in many cases data are lacking for Ofo.

It is beyond the scope of this study to examine features much beyond the LMV and its proposed immediate Sprachbünde neighbors, the RGV and GA. Though this analysis has extended somewhat up the Mississippi Valley, into the Plains, the Great Basin, the Atlantic Seaboard and the Southwest, studies of how these language areas and others may interact with this region overall and just how extensive certain features are in North America remain to be done. Whether such studies would definitively prove widespread North American language diffusion through contact or through deep-level genetics remains to be seen. Indeed, further studies may only support Boas's assertion that, at a certain time depth, it is impossible to distinguish results of borrowing from those of common (genetic) origin (Darnell and Sherzer 1971: 25) and that "it is not possible to group American languages rigidly in a genealogical

scheme in which each linguistic family is shown to have developed to modern forms, but we have to recognize that many of the languages *have multiple roots* (Boas 1929 [1940] : 255, emphasis mine). While Boas may have been referring to American languages specifically, it may yet be the case that all the world's languages have multiple roots, their "genetic" and contact-induced characteristics being largely inseparable.

I am led back to Trubetzkoy's assertion that: "It is just as easy to conceive that the ancestors of the Indo-European language branches were originally dissimilar but were standardized by contact and mutual influence" (Trubetzkoy 1923, my translation). I believe we can insert "[or any other]" after Indo-European in Trubetzkoy's passage. We can just as easily say that the Siouan or Muskogean language branches were originally dissimilar but were standardized by contact and mutual influence. We could even go further and follow Matras in asserting that it could

> be argued that it is not possible to define linguistic areas at all: it is unclear how many languages they involve, it is unclear whether or not they must show a history of cultural contact or even evidence of linguistic contacts, it is controversial whether they are limited to certain types of contact or multilingualism, or to certain types of borrowing (matter or pattern) (Matras 2009: 272).

While this study has shed light on one geographic region of the world in which it is obvious that a large degree of historical language and cultural contact has taken place, it still does not establish a true unbiased definition of a Sprachbund. While data here reveal three possible language areas forming a contiguous contact link from what is now northeastern Mexico through the southeastern United States, there do not appear rigid boundaries between these

Sprachbünde. Instead there are several areas of overlap between them, and firm boundaries are elusive.

7.6 Beginnings: further research.

Where do we go from here? Among things that warrant further study include the possible significance of several LMV phonetic features (/ʂ/, /ɬ/, ejective stops, /tl/, vowel harmony, and tonal contrast) also occurring in Mesoamerican languages, suggesting possible diffusion from or origin in Mesoamerica, a possibility that requires further study.

Above all, this study raises the issue of how extensive some Native North American language traits have become through contact and borrowing. Boas and Sapir both noted that certain traits were widespread across American languages. Sapir identified the following widespread American traits:

> [T]he incorporation of the pronominal (and nominal) object in the verb; the incorporation of the possessive pronouns in the noun; the closer association with the verb-form of the object than the subject; the inclusion of a considerable number of instrumental and local modifications in the verb-complex; the weak development of differences of tense in the verb and of number of the verb and noun; and the impossibility of drawing a sharp line between mode and tense (1922: 282).

Sapir, while recognizing these areal-typological similarities across much of North America, attempted to demonstrate genetic connection on a much broader scale.

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APPENDIX

Texts

Atakapa

The Eastern Atakapas[33]

Yukiti išak waši a nep nun nultihinst tul oši nun nultihinst. Tepuk neš hihulat. Šešneš hihulat. Kiwilš ol neš, tepuk kutskuts neš hihulat. Moyum kimat tso'ots konan olol hihulat. Yainso. Lans al, šako, kanan, nohamš ayip, ndi, pit, ian, yau laklak, šoknok nokteu melmel, enkewišt, anhipon, akip tsok, patsal šopš, łakišt, konen ayip, kathopš, nauohox, kui ol, alin hišom, alin hiškam, hilanwol tei, kulšwalš yains. Yukiti mon šokiti šakkeat šokkoi tanuk mon šokiyai otsi taneuts. [Lo šokkoiyit hal yokhits šakišakip ut. Lo hilai yokiti wineulat. Hiyekiti šakyonhulit. Kaukau hiyekiti hiyą nun nultihinst.] Tawatwenat utsutat ut. Šokakulit utsutat ut. Tsiš pum wašwaši pum pumulat. Išak hilai tanuk keat, išak hilai tsik ke hatseeš. Palnal hilai waši pamnimat. Hilai taxnik pamat, Palnal hilai waši kiš pamnimat; yil lat himatol u tatixintat ha išat pamlikš mon. Kaukau amn an ike n tahe n taat. Hakit hokišak hokyalulhauxš, hišntset wet a hinak kišet okyalul inak. Wošinga hinakit keš n šakyol teš mang šakmangmangit, šakyol katnau šakhahš. Hatyulšo nohik šakatkopšen hatmelšo; hakit išak kau hatmelšo pumul nau hakit išatip hatnainst hatitson, hakit šingšnani tikpum nekin hakit nakšnen.

(Alternate version of bracketed text):

[Lo yukiti hal šokkoiyit yukit šakišak ut. Lo hilai yukiti wineulat. Ha šakišak hiyekiti šakyongšulat. Kaukau kaškin wineulat. Hiyekiti šakyonšulat, nunkin tohulat kakau iyetsne ut.]

Yokhiti	*išak*	*waši*	*a*	*nep*	*nun*	*nul-ti-hinst*	*tul*
Indian	person	old	here	below	village	live-3s.PL-IMPF	lake

[33] Swanton's title for this story is "The Western Atakapa" (Gatschet and Swanton 1932: 9). However, I believe that this is an error on Swanton's part, since the story is actually referring to the *Hiyekiti* 'the sunrise people,' or Eastern Atakapas, not the Western Atakapas.

oši	*nun*	*nul-ti-hinst*	*tepuk*	*neš*	*hi-hul-at*	*šeš-neš*
edge	village	live-3s.PL-IMPF	peach	tree	there-plant-PERF	fig-tree

hi-hul-at	*kiwilš*	*ol*	*neš*	*tepuk*	*kuts-kuts*	*neš*
there-plant-PERF	white.man	persimmon	tree	peach	red-REDUP	tree

hi-hul-at	*moyu[m]*	*kimat*	*tso'ots*	*konan*	*ol-ol*	*hi-hul-at*
there-plant-PERF	pumpkin	bean	corn	potato	sweet-REDUP	there-plant-PERF

ya-ins(o)	*lans*	*al*	*šako*	*kanan*	*nohamš*	*ay-ip*	*ndi*
eat-3?	deer	meat	bear	turtle	chicken	swamp-LOC	catfish

pit	*ian*	*yau*	*lak-lak*	*šok-nok*	*nok-teu*	*mel-mel*
perch	bowfin	bass	hard-REDUP	STG-wing	wing-tail	black-REDUP

enkewišt	*an-hipon*	*ak-ip*	*tsok*	*patsal*	*šopš*	*ɬakišt*
pheasant	ear-folded	water-LOC	squirrel	kantak?	?	?

konen	*ay-ip*	*kathopš*	*nauohox*	*kui(?)*	*ol*	*alin*
potato	swamp-LOC	lily	chinkapin	prickly pear	persimmon	grape

hišom	*alin*	*hiškam*	*hilan-wol*	*tei*	*kulšwalš*
small	grape	large	med.plant-fruit	vine	peanut

ya-ins	*yukhiti*	*mon*	*šok-iti*	*šak-ke-at*	*šok-koi*
eat-IMPF?	Indian	all	STG-go.before	PL-have-PERF	STG-speech

tanuk	*mon*	*šok-iyai*	*otsi*	*taneuts*	*Lo*	*šok-koi-(y)it*
one	all	STG-rise.up	above	other	Lo	STG-speech-PERF

hal	*yokhits*	*šak-išak-ip*	*ut*	*Lo*	*hilai*	*yokhiti*
last	Indian	PL-person-LOC	toward	Lo	wife	Indian

wine-ul-at	*hiye-kiti*	*šak-yon-hul-it*	*kaukau*	*hiye-kiti*	*hiyą*
find-3subj.PL-COMP	east-?	PL-call-3s.PL-PERF	sun	east-?	there

nun	*nul-ti-hi-nst*	*ta-wat-wen-at*	*utsutat*	*ut*	*šok-ak-ul-it*
village	live-3s.PL-there-IMPF	stand-come-talk-COMP	God	to	STG-green-3s.PL-PERF

utsutat	*ut*	*tsiš*	*pum*	*waš-aš-i*	*pum*	*pum-ul-at*	*išak*	*hilai*
God	to	baby	dance	old.very	dance	dance-3s.PL-PERF	man	wife

tanuk	*ke-at*	*išak*	*hilai*	*tsik*	*ke-en*	*hatseeš*	*Palnal*
one	have-PERF	man	wife	two	have-SUB	bad	Palnal

hilai	*waši*	*pam-nima-(a)t*	*hilai*	*taxn-ik*	*pam-at*	*Palnal*

wife old beat-kill-PERF wife other-INST beat-PERF Palnal

hilai	*waši*	*kiš*	*pam-nima-(a)t*	*yil*	*lat*	*himatol*	*u*
wife	old	woman	beat-kill-PERF	day	three	four	or

ta-tixi-nt-at	*ha*	*išat*	*pam-lik-š*	*mon*	*kaukau*	*am-n*	*an*	*ike*
stand-lie-?-PERF	his	head	beat-mash-ASRT	all	water	drink-SUB	ear	rise

n	*tahe*	*n*	*ta-at*
and	come.out	and	stand-PERF

hakit	*hok-išak*	*hok-yal-ul-ha*	*uxts*	*hišntset*	*wet*
3	RCP-person	RCP-marry-3s.PL-NEG	be.able	brother	sister

a	*hinak*	*kišet*	*ok-yal-ul*	*inak*
this	like	sister	come-marry-3s.PL	like

wošinga	*(h)inak-it*	*keš*	*n*	*šak-yol*	*teš*	*mang*	*šak-maŋ-maŋ-it*
naked	like-PERF	woman	and	person-bad	hair	long	PL-long-REDUP-PERF

šak-yol	*katnaw*	*šak-ha-ha-š*	*hat-yul-š-o*	*noh-ik*	*šak-(h)at-kopš-en*
person-bad	beard	STG-have-NEG-ASRT	RFL-paint-ASRT-?	red.paint-INST	PL-RFL-white-SUB

hat-mel-š-o	*hakit*	*išak*	*kau*	*hat-mel-š-o*	*pum-ul*	*nau*
RFL-black-ASRT-?	their	person	dead	RFL-black-ASRT-?	dance-3s.PL	feather

hakit	*išat-ip*	*hat-na-i-nst*	*hat-itson*	*hakit*	*šing-š-na-ni*
3	head-LOC	RFL-put-there-IMPF	RFL-little	3	rattle-DEF-make-NZR?

tik-pum	*ne-kin*	*hakit*	*nak-š-na-n(i)*
place-dance	land-LOC	3	sound-DEF-make-NZR?

The following version of the bracketed section was given by Delilah Moss:

Lo	*yukiti*	*hal*	*šok-koi-it*	*yukit*	*šak-išak*	*ut*	*Lo*
Lo	Indian	last	STG-speak-PERF	Indian	PL-person	toward	Lo

hilai	*yukiti*	*wine-ul-at*	3	*šak-išak*	*Hiye-kiti*
wife	Indian	find-3s.PL-PERF	3	PL-person	east-people

šak-yong-š-ul-at	*kaukau*	*kaš-kin*	*wine-ul-at*	*hiye-kiti*
PL-call-ASRT-3s.PL-PERF	water	high.water-LOC	find-3s.PL-PERF	east-people

šak-yon-š-ul-at	*nun-kin*	*to-hul-at*	*kakau*	*iye-ts-ne*	*ut*
PL-call-ASRT-3s.PL-PERF	village-LOC	sit-3s.PL-PERF	sun	rise-?-EMPH	toward

The old Atakapa people lived in villages below this place, on the borders of the lakes. They planted peach trees. They planted fig trees. They planted apple trees and plum trees. They planted pumpkins, berries, corn, and sweet potatoes. They ate of them. They ate deer meat, bear (meat), turtles, turkeys, catfish, perch, the choupique, gaspergou, ducks, geese, pheasants, rabbits, water turkeys, squirrels, muscadines, kantak (China briar), marsh potatoes, water chinkapins, chinkapins, cactus pears, persimmons, small grapes, big grape, the soko, and peanuts. The Indians had many chiefs, one being head of all the rest. [Lo was the last head chief. The wife of Lo was a foundling. Her nation was called Easterners (Eastern Atakapa). They lived in villages over yonder toward the rising sun. The [Atakapa] prayed standing to One-Above. They danced the sacred dance to One-above. They also danced the young people's dance and the old people's dance. A man had but one wife, and when a man had two it was a bad thing. Palnal's older wife beat him to death. His other wife beat him. When Palnal's older wife beat him to death his body lay on the ground three or four days with the head mashed in. The water he had drunk ran out of his ears. Relatives were not allowed to marry, since it was as if brothers married sisters and sisters married brothers. They went almost naked. Men and women wore their hair long, and the men did not wear beards. They danced painted with red and white paint and, when relatives had died, with black paint and with feathers on their heads, sounding a rattle at the dancing place.

Delilah Moss's version of the bracketed portion:

[Lo was the last chief of the Indians. Lo's wife was a foundling. Her relatives were Easterners (Eastern Atakapa). They found her during a high tide. They called them Easterners (or Sunrise People) because they lived in villages toward the sunrise.]

From Swanton (1932: 9).

Biloxi

Ayihịdi Ąyaa Tukpê
The Wolf that Became a Man

Ąyaadi wax ni yuke hą uxte yuke hą thao. Eyą kịhị yuke dixyị Ayihịdi tukanitu tukpe eyąhị. Ekeką tukanituyą wo yihi hą "Tukani ko eyą nąx ką nyidǫhi ąkahi ąkihi na," hetu ką, "Ąkịksu wadi kawak yo mąki nani ąkihi utohohiye daha ąkux nedi," edi. Ekehą petuxte wataye wax ade. Tukanituyą yihi hą wax ade ǫ thao kịx ką ahịske wa ąde tha duxke ąde dehedhą ayukuni ti sahiye ti haitha duti ąde ką, "Kô! Tukani kô tha ayukuni ti sahiye duti hąde. Tukani ko haitha hąde ko kadohǫni hanǫ," kiyetu ką "E'ede cikuyixti," hedi. Etike hąda hi kiye hą kiya waxa ade. Ekehą itha kiyowo o kix ką ahịske wadi, cana duxke nedi. Eke hąde ką cipuxi cupą ịxkiyaduye ąde ką etike tha duxke ne ką sidiyą kihanetu. "Xooxoo, tukani ko sidi ǫni wo," kiyetu ką, "Xoxo, xoxo," ex dedi. Ekehą Ayihị ịcyoxti dedi. Ekeǫnidi ąyaa wax ni yuke oxtetu dixyị acka wohe ąde xya, etu xa. Exa.

Ąyaa-di	*wax*	*ni*	*yuke*	*hą*	*uxte*	*yuke*	*hą*	*tha-o.*	*Eyą*	*kịhị*	
man-TOP	hunt	walk	move	SS	3.make.camp	move	SS	deer-3.shoot	then	3.return	
yuke	*dixyị*	*Ayihị-di*	*tukanitu*	*tukpe*	*yąhị.*	*Ekeką*	*tukanitu-yą*	*wo*	*yihi*	*hą*	
move	when	Wolf-TOP	3.uncle	3.change	there	DS	3.uncle-DEF	?	3.think	SS	
"Tukani	*ko*	*eyą*	*nąx*	*ką*	*nyi-dǫhi*	*ąkahi*	*ąkihi*	*na,"*	*he-tu*	*ką,*	
"uncle	?	there	sit	DS	1.2-see	1.come	1.think	DECL.M	3.say- PL	DS	
"Ąk-ịksu	*wadi*		*kawa-k*	*yo*	*mąki*	*nani*	*ąk-ihi*		*u-toho-hiye*		
"1-want	very.much		STG-ACC	meat	lie	what	1-think		LOC-trail-CAUS		
daha	*ąk-ux*	*ne-di,"*	*e-di.*								
OBJ.PL	1.come	stand-TOP	3.say-TOP								
Ekehą	*phet-uxte*	*wata-ye*	*wax*	*ade.*							
SS	fire-camp	watch-CAUS	hunt	3.go							

Tukani-tu-yą yihi hą wax ade ǫ
mother's.older.brother-3.POSS-DEF 3.think SS hunt go PST

tha-o kịx ką ahịske wa ąde tha du-xke ąde dehedhą ayukuni ti
deer-shoot come DS greedy very CONT deer INST-skin CONT that.done 3.roast all

sahi-ye ti hai-tha duti ąde ką, "Kô! Tukani kô tha ayukuni ti sahi-ye duti hąde.
raw-CAUS all blood-all eat CONT DS oh! uncle oh! deer roast all raw-CAUS eat CONT

Tukani ko hai-tha hąde ko ka-dohǫ-ni hanǫ," ki-ye-tu ką
uncle ? blood-all CONT ? NEG-see-NEG perhaps DAT-3.say-PL DS

"E'ede ckuyi-xti," he-di. Etike hąda hi ki-ye hą kiya waxa ade.
this.way sweet-INTENS 3.say-TOP so CONT FUT DAT-say SS again hunt 3.go

Ekehą itha kiyowo o kix ką ahịske wadi, cana du-xke ne-di.
SS deer another 3.shoot 3.carry.on.back DS greedy very again INST-3.flay stand-TOP

Eke hąde ką cipuxi cupą ịxki-yaduye ąde ką
this CONT DS blanket old REFL-wrap.around CONT DS

etike tha du-xke ne ką sịdi-yą ki-hane-tu. "Xooxoo,
so deer INST-flay stand DS tail-DEF DAT-3.find-PL oh-oh

tukani ko sịdi ǫǫni wo,"
uncle ? tail use INTER

ki-ye-tu ką, "Xoxo, xoxo," e x de-di. Ekehą Ayihị ịcyo-xti de-di.
DAT-3.say-PL DS oh-oh he SS? go-TOP SS Wolf old-INTENS go-TOP

Eke-ǫni-di ąyaa wax ni yuke oxte-tu dixyị acka wohe ąde xya,
this-do-TOP man hunt walk move 3.camp-PL when near barking CONT always

e-tu xa. E-xa.
3.say-PL always 3.say-always

Some persons who were going hunting, having camped, shot a deer. As they were returning to camp with the game a wolf who had assumed the form of their mother's brother reached there. They thought that he was indeed their mother's brother, so they said, "As you,

our mother's brother, live yonder, we thought that we would be coming to see you." The supposed uncle replied, "I have a strong craving for fresh meat, and thinking that perhaps you had shot some animal and that its body was lying here, I have been following your trail until I got here."

Then the men made him watch the camp while they went hunting again. They thought that he was their mother's brother, and while they were walking along in search of game they shot a deer and returned to camp. The Wolf was very greedy, so after flaying the deer he roasted the meat and was eating some of it while it was raw and bloody all over.

Observing this the men said: "Oh! mother's brother, oh! he is eating the venison that is still raw, though it has been put on to roast. Perhaps he does not see that it is all bloody." But the wolf-man replied, "This way it is very sweet."

They said to him that he should remain, and they went hunting again. They shot more deer, carried them home on their backs, and found that the wolf-man was very greedy. Again he stood flaying the bodies. While he was doing this he had an old blanket wrapped around himself, and as he stood flaying the men discovered his tail. "Oh! Does mother's brother have a tail?" said they to him. On hearing this, he said "Oh, oh!" and departed. Behold he departed as a very aged male wolf. Therefore when men go hunting and camp there is usually the barking of wolves nearby they say. That is all.

From Dorsey and Swanton (1912: 65).

Chickasaw

Bakbak Iškobo' Homma' Poma-piisa-či'
Our Guardian, the Redheaded Woodpecker

Binni'lika Bakbak Iškobo' Homma' inokhangloča, pisaka, foši' alhiha' wakaat aba' pílla ayattook oka'ako aba' waa ištayatook. Pallamihma, oka'at aba' waat šotik onattook šotik ombinnilika ihasimbišat akka' pilačittook 'at ompači iči akka' pila aamintika. Haatoko ihasimbišat hiši' falaktoča nokčilipa, imittakobaat holissottook. Nokšilača imanompa kallo'čohmi tobattook. Yammikya nanna imponnakat okošto' alaka lhakoffittook, Aba' Binni'laat ayokpakat Bakbak foši' Čikašša apiisači atookolittook. To'wa' hooto'lihma okayaa miča taloowaka, Čikaššaat iholbahma. Aattibima taškačipota' alhiha' áyya'šaka onača imanoli nanna ikčokmo mintika fošiat olat wakaat albina' faškalla 'mat ahayattok. Nanna lawa' hooyimmika foši' alhiha' Čikaššaako ihollo miča hooayokpánči Čikašša alhihaat aačika Shilombiš Ištakoot, Bakbak išthabinači.

Binni'li-ka	*Bakbak Iškobo' Homma'*			*inokhanglo-ča,*		
sit-DS	Redheaded Woodpecker			pity-and		
pisa-ka,	*foši'*	*alhiha'*	*waka-at*	*aba'*	*pílla*	*aya-ttook*	*oka'ako*
see-DS	bird	PL	cow-SUBJ	way up		go-PST	water.ACC?
aba' waa	*išt-aya-took.*	*Pallamih-ma,*	*oka'-at*	*aba' waat*	*šotik*		
put.head.up?	INST-go-PST	powerful-?	water-SUBJ	put.head.up	sky		
ona-ttook	*šotik*	*ombinnili-ka*	*i-hasimbiš-at*	*akka'*	*pila-či-ttook*		
reach- PST.REM	sky	ride?-DS	?-tail-SUBJ	descend	throw-CAUS-PST.REM		
'at ompači	*i-či*	*akka'*	*pila*	*aa-minti-ka.*			
? splash.on	?-CAUS	down	just	LOC-come-DS			
Haato-ko	*ihasimbiš-at*	*hiši'*	*falakto-ča*	*nok-čilipa,*			
?-ACC	?-tail-SUBJ	feather	forked-and	throat-?			
im-ittakoba-at	*holisso-ttook.*						

?-stomach-SUBJ write-PST.REM

Nok-šila-ča *im-anompa* *kallo'* *čohmi* *toba-ttook.*
throat-dry-and DAT-speech hard somewhat appear-PST.REM

Yammi-kya *nanna* *imponna-kat* *okošto'* *ala-ka*
real.strong-but something smart-SS flood arrive-DS

Ihakoffi-ttook, *Aba' Binni'la-at* *ayokpa-kat* *Bakbak* *foši'*
safe-PST.REM God.in.heaven-SUBJ happy-SS Woodpecker bird

Čikašša *apiisači* *atookoli-ttook.*
Chickasaw guardian nominate-PST.REM

To'wa' *hooto'lih-ma* *oka-yaa* *miča* *taloowa-ka,* *Čikašša-at* *iholbah-ma.*
stay.there untie-? water-? ? sing-DS Chickasaw-SUBJ have.vision-?

Aattibi-ma *taška-čipota'* *alhiha'* *áyya'ša-ka* *ona-ča*
?-? soldier PL exist-DS arrive-?

imanoli *nanna* *ik-čokm-o* *minti-ka* *foši-at* *ola-t* *waka-at* *albina'*
tell thing NEG-good-NEG come-DS bird-SUBJ sound-SUBJ cow-SUBJ camp

faškalla 'mat *ahaya-ttok.* *Nanna* *lawa'*
flip.over-? go-PST thing many

hoo-yimmi-ka *foši' alhiha'* *Čikaššaa-ko*
3s-believe-DS bird PL Chickasaw-ACC?

ihollo *miča* *hooayokpán-či* *Čikašša* *alhiha-at* *aači-ka*
love ? ?-CAUS Chickasaw PL-SUBJ say-DS

Shilombiš *Ištakoot,* *Bakbak* *išt-habina-či.*
Spirit ? woodpecker INST-gift-CAUS

It was at the time of the great flood that Aba' Binni'li' took pity on the Red-headed Woodpecker, for he watched as the birds flew higher and higher to avoid the rising water. Finally, the waters nearly reached the sky upon which the birds lit as their last hope. Soon, to their great relief, the flood ceased to rise and began to recede. But while sitting on the sky, their tails, projecting downward, were drenched by the spray from the surging waters below. So, the ends of their tail

feathers became forked and notched; their bodies speckled and splotched, and their voices rather harsh and croaky from exposure to the elements. However, their skill and ability to save them from the flood so delighted Aba' Binni'li' that he appointed them to be the guardian birds for the Chickasaw. They frequently made appearances in the villages on the eve of ball play, and when the birds would twitter their most cheerful notes, it was in anticipation of victory for the "home team"—or so the Chickasaw believed! In time of war, they would also appear in the camps of the warriors to give them warning of approaching danger by peculiar chirping or twittering, and nervously flitting from to place about the camp. In many ways, these birds proved their affection for Chickasaw and are still revered as favorites among the feathered friends of the Chickasaw and considered a gift from the Great Spirit, Aba' Binni'li'.

From Galvan (2011: 33).

Chitimacha

How the Indian came (First telling)

we-t-k-š	*hus*	*na·nca·-ka-ma-nk-š*
DEM.PRO-REF-LOC-FOC	3	older.sibling-PL-PLURACT-OBJ?-FOC

we-t-k	*hi*	*hok-m-iʔi*
DEM.PRO-REF-LOC	to	leave-PLURACT-3s

kun	*cu·-g-š*	*še·ni-nk*	*hup*	*hi*	*ni-cw-iʔi*
some	go-PART-FOC	pond-LOC	to/toward	to	water-MOVE.UPRIGHT-3s

we-t-k-š	*we*	*še·ni-nk*	*hi*
DEM.PRO-REF-LOC-FOC	DEM.DET	pond-LOC	to

ni-cwi-nki-š	*wey-k*	*hi*
water-MOVE.UPRIGHT-LOC.TEMP-FOC	DEM.DET-OBJ?	to

kišut-iʔi	*we-t-k-š*	*hesigen*	*cu·g-š*	*hi*
swim-3s	DEM.DET-REF-LOC-FOC	again	go-PART-FOC	to

ni-cw-iʔi	*tutk*	*te·tiʔi*	*ha*	*še·niš*	*nencu·*
water-MOVE.UPRIGHT-3s	then	say-3s	this	pond-LOC	too

ʔati	*nenšwicuki*	*we-t-k-š*
large-AOR.IND.3s	to.water-out-move-1s.FUT	DEM.PRO-REF-LOC-FOC

we	*siksi-nk*	*ni*	*wop-mi-iʔi*	*him*	*haksigam*	*ne*
PERS.PRO	eagle-OBJ	thing	hear-PLURACT-3s	2	young.man	and

ʔam-ʔ-a·š-i	*sa-nki*	*ʔiš-k*	*ku·*	*keta-nki*	*ʔap*
what-do-CONT-AOR.IND.3S	that-LOC	1-OBJ	water	side-LOC	to.here

ni·gšiki	*ha*	*še·ni-š*	*hi*	*nencu·*	*ʔati*
ni-k-ʔš-iki					ʔati-i
to.water-PART-CONT.1s	this	pond-FOC	to	too	large-AOR.IND.3s

kišu-cuki	*ne-n-šw-i*	*giht-k-š*	*te*	*kunugu*
swim-1s.FUT	to.water-out-move.upright-NOM	want-PART-when	INTER	QUOT

we	*siksi-nk*	*hiš*	*ni*	*wop-m-iʔi*	*tutk*

DEM.DET eagle.OBJ? actor thing hear-PLURACT-3s then

we siksi hi nat-m-aʔ-i hi
DEM.DET eagle to speak-PLURACT-indir-AOR.IND.3s to

ne-n-šwa-ga tewe·š nencu· ʔati-i
to.water-out-move.upright-1s.want but-FOC too large-AOR.IND-3s

ha še·ni-š he·c-pi-cuk gih-cu-š we
this pond-FOC clear.away-CAUS-1s.FUT want-FUT-COND DEM.DET

siksi-nk-hiš hi te·t-iʔi gih-kite hiki-n
eagle-OBJ?-actor to say-3s want-1s.PART 1.be-out

he.c-p-I ka·kwa-ki-cu·-š tutk
clear.away-CAUS-NOM know/can-inactive-3s.FUT-FOC then

kunugu we siksi-nk kap gapt-k we še·ni
it.is.said DEM.DET eagle-OBJ? start/sudden take-PART DEM.DET pond

waʔa-nk hi peš-iʔi pa·kine-ki-cu·-š ku·-ki
other-LOC to fly-3s be.tired-inactive-3s.FUT-FOC water-LOC

hi ni-kin-cuki-ng hesigen ku·-ki hi
to to.water-push-1s.FUT-NEC again water-LOC to

ni-kint-ki-cu·-š kišu-cuk we-t-k-š
to.water-push-inactive-3s.FUT-FOC swim-1s. FUT DEM.PRO-REFL-LOC-FOC

we siksi-nk-hiš hesigen ʔapš hey št-iʔi
DEM.DET eagle-OBJ?-actor again return pick.up-3s

we-t-k-š ʔap ne-n-cu-p-i
DEM.PRO-REF-LOC-FOC to.here to.water-move.up-CAUS-AOR.IND.3s

wey-ʔi·-g-š kunugu panš pini-ka-nk-š siksi -š
DEM.DET-do-PART-FOC QUOT person red-PL-LOC-FOC eagle-FOC

get-i gay-š-naʔa siksi ge-cu·-š ʔam
kill-NOM be.NEG-when-3.PL eagle kill-FUT-FOC some

keys-ma-nk-i hih-cuy-i
be.difficult-PLURACT-LOC-AOR.IND.3s be.neutral-FUT-AOR.IND.3s

wey-ʔi·-g-š hugu panš pini-ka-nk ha·-aktiš

DEM.DET-do-PART-FOC	be	person	red-PL-LOC	this-side	

ʔap	*nem-naʔa*	*ka·kwa-ki*	*gan*	*ʔašt*	*ʔuci·-g-š*
to.here	out.of.water-3s.are	know-inactive	NEG	how	do-PART-FOC

panš	*ne*	*kap*	*nacpik-mi-naʔa*	*tewe·- š*
person	just	stative/inchoative	begin-PLURACT-3PL	but-FOC

wey-t-ugu	*we*	*ʔasi-s*	*ha-nk*	*ʔap*
DEM.DET-REF-be	DEM.DET	man-FOC	this-LOC	to.here

ne-n-šw-iʔi	*ʔuc-hiš*	*gan*	*ka·kw-iʔi*	*ʔašt*
to.water-out-?-3s	who-actor	NEG	know/can-3s	how

ʔuci.-g	*panš*	*kap*	*nacpik-m-iʔi*	*wey-t-ʔš-in*
do-PART	person	STAT	begin-PLURACT-3s	DEM.DET-REFL-CONT-adj

da·-t-k
there.PROX-REFL-LOC

He left his brothers. He went and went till he came to the edge of a pond. When he got to the edge of the ond, be swam it. Then he went (on) again and came (again) to the edge (of a body of water).

He said, "This pond is too big for me to cross."

Then an eagle met him. The eagle asked, "You, young man, what are you doing there?"

"I have come to the water's side. This pond is too big for me to swim."

"Do you want to cross it?" that eagle asked.

He told the eagle, "I want to cross it, but this pond is too big."

"I'll help you, if you wish," the eagle said.

"I do wish it, if you can help me."

Then they say the eagle took him up and flew toward the opposite side of the pond. "If I get tired, I'll have to drop you into the water" (said the eagle).

"If you drop me back into the water, I'll swim."

Then the eagle picked him up again. Then he got him across.

They say that is whey Indians do not kill eagles. If one kills an eagle, he will get into some trouble. That is how Indians came across (to) this side. I do not know how people started up, but that is how the man came over here. Nobody knows how people started up. That is all now.

Story A.1 as told to Morris Swadesh (1939) by Benjamin Paul. Gloss redacted by Daniel Hieber (2013, pers. comm).

Choctaw

Nanih Waiya
Crooked Hill

Hopakikaš, hattak-at yakni paknaka ilappa ikšo-tok. Yakni hočukbi, nanih notaka ahofobi-ho, aša-tok. Yakni čiluk aiaša-tuk, ilappa ačukkoa-yat hofobi-hoš ona-atok. Yakni čiluk anuka ilappa okluši lawa-kat, haknip-at šakči čohmi-hoš, aša-tok. Nittak ačaffa ma, okluši-at yakni čiluk ilappa akuča wihah banna-tok, mihma čiloki-akoš tikba kucha wihat yakni ailibeša ont aikahah ma, haši-at hakšup šilelit koli-na oklah kučit falammi imma oklah ilhkoli-tok. Yakaya-kat Muskoki alheha-akoš kuča wihat mak kia falammi imma oklah ilhkoli-tok. Čikaša-ato kucha wiha mat okmahli imma ilhkoli-tok, mihma Čahta okla-ato makili okla aiašat i-čukka aiikbit-tok. Himmak nittak-ano nanih ma Nanih Waiya oklah hočifo.

Hopakikaš,	*hattak-at*	*yakni*	*paknaka*	*ilappa*	*ikšo-tok.*
for long time	man-SUBJ	land	above	this	lack-PST

Yakni hočukbi,	*nanih*	*notaka*	*ahofobi-ho,*	*aša-tok.*
land	mound	under	deep.place-OBJ	live-PST

Yakni čiluk	*aiaša-tuk,*		*ilappa*	*ačukkoa-yat*
land hole	dwell.place-PST		this	passageway-SUBJ

hofobi-hoš	*ona-atok.*	*Yakni*	*čiluk*	*anuka*	*ilappa*
deep.place-?	arrive-PST	land	hole	in	this

okluši	*lawa-kat,*	*haknip-at*	*šakči*	*čohmi-hoš,*	*aša-tok.*
people	many-SUBJ	body-SUBJ	crawfish	somewhat-?	live-PST

Nittak	*ačaffa*	*ma,*	*okluši-at*	*yakni*	*čiluk*	*ilappa*
day	one	that	people-SUBJ	land	hole	this

akuča wihah	*banna-tok,*	*mihma*	*čiloki-akoš*
move.out.of	want-PST	then	Cherokee-?

tikba	*kucha wihat*	*yakni*	*ailibeša*	*ont*	*aikahah*	*ma,*
first	move.from	land	warm.place	go	there	that?

haši-at *hakšup* *šilelit* *koli-na* *oklah* *kučit*
sun-SUBJ skin dry.up dig?-? people outside?

falammi *imma* *oklah* *ilhkoli-tok.*
north toward people go.in.group-PST

Yakaya-kat *Muskoki* *alheha-akoš* *kuča wihat*
? Muskogee truly-? moved.out?

mak kia *falammi* *imma* *oklah* *ilhkoli-tok.*
then? north toward people go.in.group-PST

čikaša-ato *kucha* *wiha mat* *ok-mahli* *imma*
Chickasaw-SUBJ.EMPH move.out south ? water?-wind toward

ilhkoli-tok, *mihma* *čahta* *okla-ato* *makili* *okla* *aiašat*
go.in.group-PST then Choctaw people-SUBJ.EMPH same? people live?

i-čukka *aiikbit-tok.* *Himmak* *nittak-ano* *nanih* *ma*
their-house make-PST today man-OBJ? hill there

Nanih Waiya *oklah* *hočifo.*
Hill Crooked people call

Long ago, there were no people upon this earth. They lived in a deep place underneath a hill. They dwelled in this cave; here, a deep passageway came out. Inside this cave lived many tribes; their bodies were in the form of crawfish. One day the tribes decided they wanted to move out of this cave, and the Cherokees were the first to move out; and after they all lay upon a warm place on the earth, and the sun dried and opened their shells and freed them, they moved toward the north. Next, the Creeks moved out and they also moved north. But when the Chickasaws moved out, they moved to the south, and then the Choctaws moved out and they made their homes there. Today the hill is called Nanih Waiya.

From Haag and Willis (2001: 178).

Mobilian Trade Language (MTL)

Eno čokha eno aya bana. Eno aya bana. Eno nowa-kšo…eno nowa-kšo. Eno čokha eno eya-kšo. [unintelligible] lap aya bana [unintelligible] lap aya [unintelligible] lap kaneya. Katema oya eno nowa bana. Eno nowa bana. Eno eye čokma-kšo. Katema eno nowa-kšo fena. Eno noškobo oya čokma-kšo, čokma-kšo, čokma-kšo. Yako hatak lap kaneya falama lap męte?

Eno aya bana. Eno čokha eno falama bana. Eno čokha eno aya bana.
1 go want 1 house 1 return want 1 house 1 go want
'I want to go. I want to return to my home. I want to go to my house.'

Anote neta tokolo nahele meša ma anǫte no męte.
again day two tomorrow after there again 1 come
'Two days after tomorrow, I come back.'

Eno čokha eno aya taha. Eno falama… eno falama.
1 house 1 go PST 1 return 1 return
'After going (to my) home, I return … I return.'

Eno čokka eno męte…
1 house 1 come
'I come to my house…'

eno yemme-kšo…
1 believe-NEG
'I don't believe…'

yako hatak katema lap męte?
this man where 3 come
'Where does this man come from?'

Tamaha olčefo eno hakalo bana.
town name 1 hear want
'I want to hear the name of (his) town.'

[unintelligible] *ayome*
[unintelligible] married
'… married/marriage …'

Yako hatak čokma-kšo.

this man good-NEG
'This person is bad.'

Yako hatak pake lap mẹte, eno yokpa fena.
this man glad 3 come 1 far very
'I am very glad that this man (from) afar comes (here).

Yako hatak ačokma fehna.
this man good very
'This man is very good.'

Katema oya lap nowa bana, lap aya.
where go 3 travel want 3 go
'He goes wherever he wants to travel.'

I want to go. I want to return to my home. I want to go to my house. Two days after tomorrow, I come back. After going (to my) home, I return … I return. I come to my house … I don't believe… Where does this man come from? I want to hear the name of (his) town. … married/marriage … This person is bad. I am very glad that this man (from) afar comes (here). This man is very good. He goes wherever he wants to travel. Does this man, (once) gone, come back?

From Drechsel (1997: 141).

Natchez

Hakutama·L
Corn Woman
(or The Origin of Corn)

hakutama·L	*seNcisu·ne*
haku-tama·L-∅	*se-n-ci-su·-ne*
corn-woman-ABS	QT-IMPF-sit.SG-NEW.TOP

hohsaluh	*ʔawiti·*	*sampitisisu·ne*
hohsal-uh	*ʔawiti·⌀*	*sa-n-piti-⌀-si-su·-ne*
girl-DIM	two	QT-IMPF-go.about-ABS-DAT-NEW.TOP-SUB

hakuya	*sintokosine*	*ast*
haku-ya-⌀	*si-n-toko-Ø-si-ne*	*ast-Ø*
corn-DEF-ABS	QT-IMPF-deplete-DAT-DAT-SUB	fanning.basket-ABS

ʔamasanaL	*hakuʔe·t*	*lesankik*	*ma·k*	*ʔe·tkasaNcine*
ʔama-sa-n-al-k	*haku-ʔe·t*	*le-sa-n-ki-k*	*ma·k*	*ʔe·tka-sa-n-ci-ne*
carry-QT-IMPF-AUX-CONN	corn-house	sit-QT-IMPF-AUX-CONN	there	enter-QT-IMPF-AUX-DS

ʔasta	*coʔotkop*	*kawete·tsanaL*	*pato·hal*
ʔast-a-⌀	*coʔotkop*	*ka-wete·t-sa-n-al-k*	*pato·hal-⌀*
fanning.basket-DEF-ABS	full	LOC-take.out-QT-IMPF-AUX-CONN	sofkee-ABS

hani·hi·sanohsik	*santanihkusik*	*sampiksisu·ne*
hani·hi·-sa-n-oh-si-k	*sa-n-tani-hkusi-k*	*sa-m-piksi-su·-ne*
make.SG.SBJ.DU.OBJ-QT-IMPF-?-?-CONN	QT-IMPF-DU-drink-CONN	QT-IMPF-stay.DU-NEW.TOP-SUB

ma·	*hakuʔe·tak*	*ayį*	*kosekatih*	*sana·ne*
ma·	*haku-ʔe·t-a-k*	*ay-i-n*	*kosekatih*	*sa-n-a·-ne*
that	corn-house-DEF-LOC	think-3PST-PHR.TRM	empty	QT-IMPF-be.AOR-DS

ma·k	*ʔe·tkasancine*	*hakuya*	*popkehaʔa*
ma·k	*ʔe·tka-s-an-ci-ne*	*haku-ya*	*popkeh-a-ʔa*
there	enter-QT-IMPF-AUX-SUB	corn-DEF	bean-DEF-COM

kawete·tsanaL	*ko·s*	*tehneskuk*	*ta·k*
ka-wete·t-sa-n-al-k	*ko·s*	*teh-ne-skʷ-k*	*ta·k*
PST-take.out-QT-IMPF-AUX-CONN	what	get-3-CONN	where

kakatehnaL	*ma·kup*	*kawete·tnalą*
kaka-teh-n-al-k	*ma·kup*	*ka-wete·t-na-la-n*

PVB-take-3-AUX-CONN well.then PST-bring.out-3-AUX-PHR.TRM

ka·wit	*ʔe·tkaʔa·cine*	*ki·sa·tenlu·k*	*ma·ʔeLatanilą*
ka·-wit	*ʔe·tka-ʔa·-ci-ne*	*ki·s-a-teni-lu·-k*	*ma·-ʔeL-a-tani-la-n*
now	enter-3OPT-AUX-SUB	sneak.up-1OPT-DU-AUX-CONN	FUT-see-1OPT-DU-AUX-PHR.TRM

ka·hisi·tanu	*hakuya*	*ʔe·tokosine*	*ma·ki·sitenlų*
ka-hi-si-tani-w	*haku-ya-∅*	*ʔe·-toko-si-ne*	*ma·-ki·s-i-teni-lu-n*
PST-say-QT-DU-AUX	corn-DEF-ABS	3OPT-deplete-DAT-SUB	FUT-sneak.up-3PST-DU-AUX-PHR.TRM

hisantanu·k	*sampiksisu·ne*	*ale*	*hakuya*
hi-sa-n-tani-w-k	*sa-n-piksi-su-ne*	*ʔale*	*haku-ya-∅*
say-QT-IMPF-DU-AUX-CONN	QT-IMPF-stay-NEW.TOP-SUB	already	corn-DEF-ABS

sitokosik	*sitancokok*	*ma·kup*	*ʔayʔu·ha·t*
si-toko-si-k	*si-tani-cokʷ-k*	*ma·kup*	*ʔay-ʔi-w-ha·t*
QT-deplete-DAT-CONN	QT-DU-know-CONN	then	think-PTC-AUX-NEG

hisitansuk	*kinsitompaY*	*wi·kaha·p*	*ʔunuhsak*
hisi-tani-si-w-k	*kin-si-tompay-k*	*wi·kaha·pʔ*	*unuhs-a-k*
pay.attention-DU-QT-AUX-CONN	STG-QT-play-CONN	yard-edge	DEF-LOC

kasituksik	*ʔale·na*	*ʔasta*	*ʔamasaL*
ka-si-tuksi-k	*ʔale·na*	*ʔast-a-∅*	*ʔama-si-al-k*
LOC-QT-sit.DU-CONN	now	fan-DEF-ABS	carry-QT-AUX-CONN

suhtik	*kaʔeLsitaniL*	*kasituksine*	*hakuʔe·tak*
su-hti-k	*ka-ʔeL-si-tani-l-k*	*ka-si-tuksi-ne*	*haku-ʔe·t-a-k*
QT-go.SG-CONN	PST-see-DAT-DU-AUX-CONN	PST-QT-sit-SUB	corn-house-DEF-LOC

ʔe·tkasucik	*kapalasilu·ne*	*kakwaL-site·skuk*
ʔe·tka-su-ci-k	*ka-pala-si-lu·-ne*	*ka-kwaL-si-te·-skw-k*
enter-QT-AUX-CONN	LOC-shut-QT-AUX-SUB	LOC-run-QT-DU-AUX-CONN

kaksite·skusik	*ka·ʔeLsitanilą*	*tuku·tuku·sihsaL*
kak-si-te·skʷ-∅-si-k	*ka·-ʔeL-si-tani-la-n*	*tuku·tuku·-si-hsal-k*
stick.head.in-QT-AUX-3DAT-DAT-CONN	PST-see-DAT-DU-AUX-PHR.TRM	rub-REDUP-QT-AUX-CONN

su·yak	*meʔe·meʔe·siskuk*	*ʔasta*	*ʔayatsu·ne*
su·-ya-k	*meʔemeʔe·-si-skʷ-k*	*ʔast-a-∅*	*ʔayat-su-·-ne*
breast-DEF-LOC	press-QT-AUX-CONN	fanning.basket-DEF-ABS	stand.astraddle-QT-be-SUB

nukcaka·ksukuk	*hakuya*	*ʔasta*	*ka·coʔotsala*
nuk-caka·k-su-kʷ-k	*haku-ya*	*ʔast-a-∅*	*ka·-coʔot-sa-la*

PVB-rattle-QT-AUX-CONN corn-DEF fan-DEF-ABS PST-full-QT-AUX

ma·ksaL	*ʔast*	*wi·ta·ha*	*hamaN*	*ʔayatsu·ne*
ma·ksaL	*ʔast-∅*	*wi·ta·ha*	*hamaN*	*ʔayat-su-·-ne*
	fanning.basket-ABS	another	again	stand.astraddle-QT-be-SUB

nukcaka·ksukuk	*popkeha*	*ʔasta*	*ka·coʔotsala*
nuk-caka·k-su-kʷ-k	*popkeh-a*	*ʔast-a-∅*	*ka·-coʔot-sa-la*
PVB-rattle-QT-AUX-CONN	bean-DEF	fan-DEF-ABS	PST-full-QT-AUX

maksaL	*ʔeLsitaniL*	*ka·kwaL-site·skų*	*ma·nanê·ta·*
ma·ksaL	*ʔeL-si-tani-l-k*	*ka·-kwaL-si-te·-skʷ-n*	*ma·-nane·-ta*
	see-QT-DU-AUX-CONN	PST-run-QT-DU-AUX-PHR.TRM	

ciknelu·k	*temi·hi·ne-nlu·k*	*nokma·ʔiN*	*cikilu·k*
cik-ne-lu·-k	*temi·hi·-ne-n-lu·-k*	*nok-ma-ʔi-n*	*cik-i-lu·-k*
defecate-3-AUX-CONN	feed.SG.SUBJ.OBJ.DU-3-1OBJ-AUX-CONN	PVB-that-?	defecate-3-AUX-CONN

kawete·talaN	*ka·witan*	*kinʔiskwa·t*	*ma·ʔatani*
ka-wete·t-ʔa-la-n	*ka·witan*	*kin-ʔi-skʷ-a·t*	*ma·-ʔa-tani-·*
PST-take.out-COM-AUX-PHR.TRM	now	STG-1-eat-NEG	PVB-1OPT-DU-be

ka·hisi·tane	*pato·halaN*	*ʔoysu·sine*	*hahku·s*
ka·-hi-si·-tani	*pato·hal-a-n*	*ʔoy-su·-si-ne*	*hahku·s*
PST-say-QT-DU	sofkee-DEF-ABS	cook-NEW.TOP-QT-SUB	to drink

ʔiteni·kusa·t	*ka·suN*	*ma·kte ʔeLsitanila*	*ka·sicokǫ*
ʔi-teni·-hkus-a·t	*ka·-su-·-n*	*ma·kte ʔeL-si-tani-la*	*ka·-si-cokʷ-n*
3PST-DU-want-NEG	PST-QT-be-PHR.TRM	see-QT-DU-AUX	PST-QT-find.out-PHR.TRM

ma·kup	*henehpictankik*	*ya·na·*	*ta·pa·taniL*
ma·kup	*henehpic-tan-ki-k*	*ya·na·*	*ta-pa·-tani-l-k*
	?-DU-AUX-CONN	EMPH	kill-2OPT-DU-AUX-CONN

ʔe·ta	*le·pa·tanilą*	*ka·hisi·pupu·sį*	*ma·kup*	*a·yik*
ʔe·t-a-∅	*le·-pa·-tani-la-n*	*ka·-hi-si·-pupu·-si-n*	*ma·kup*	*a·-yi-k*
house-DEF-ABS	burn-2OPT-DU-AUX-PHR.TRM	PST-say-QT-PL.OBJ-DAT-PHR.TRM	then	be.AOR-IRR-CONN

ka·	*ʔe·ta*	*coLikti?i·yak*	*hiyapą*	*kinecele?a·yine*
ka·	*ʔe·t-a*	*colikti-ʔi·-ya-k*	*hi-ya-pa·-n*	*kin-ecele-ʔa·-yi-ne*
this	house-DEF	fire-DECS-DEF-LOC	say-1PT-2OPT-PHR.TRM	STG-grow-3OPT-IRR-SUB

ma·na	*kwe·pa·tanu·sik*	*toMsi·Lpa·taniL*	*kinhasku·s*
ma·na-∅	*kwe·-pa·-tani-w-si-k*	*toMsi·L-pa·-tani-l-k*	*kin-ha-skʷ-s*

that-ABS	dig-2OPT-DU-AUX-QT-CONN	raise-2OPT-DU-AUX-CONN	STG-INDF-eat-INF

pantani·ʔą	*ʔaka·hnic*	*suphesku·s*	*pantaniʔaN*
pan-tani·-ʔa-n	*ʔaka·hn-ic*	*sup-hesku-ʔis*	*pan-tani·-ʔa-n*
2OPT-DU-be-PHR.TRM	you-ERG	be.busy	2OPT-DU-be-PHR.TRM

ma·kte ta·sitaniL	*ka·le·sitanilą*	*ʔame·kasu·ne*	*ka·kinʔecelasuN*
ma·kte ta·-si-tani-il-k	*ka-le·-si-tani-la-n*	*ʔame·ka-si-·-ne*	*ka-kin-ʔecele-a-si-w-n*
kill-QT-DU-AUX-CONN	PST-burn-QT-DU-AUX-PHR.TRM	spring-QT-AUX-SUB	PST-STG-grow-ʔ-QT-AUX-PHR.TRM

ma·na	*kwe·santanu·sik*	*sampiksisu·ne*
ma·na-∅	*kwe·-sa-n-tani-w-si-k*	*sa-n-piksi-su·-ne*
that.one-ABS	dig-QT-IMPF-DU-AUX-DAT-CONN	QT-IMPF-sit-NEW.TOP-SUB

kwe·santanu·k	*lewesantani·ne*	*ca·skehą*	*ʔoksantaniL*
kwe·-sa-n-tani-w-k	*lewe-sa-n-tani-·-ne*	*ca·skeh-a-n*	*ʔok-sa-n-tani-l-k*
dig-QT-IMPF-DU-AUX-CONN	stop-QT-IMPF-DU-AUX-SUB	hoe-DEF-ABS	stick.up-QT-IMPF-DU-AUX-CONN

sanaksine	*kasantompisahkune*	*ca·skehą*	*wiha·tak*
sa-n-ak-si-ne	*ka-sa-n-tompi-sahku-ne*	*ca·skeh-a-n*	*wiha·tak*
QT-IMPF-?-?-SUB	LOC-QT-DU-arrive-SUB	hoe-DEF-ABS	another

ʔoksankik	hackaNc	kakwe·he·nohcį	hisi·tanu·k
ʔok-sa-n-ki-k	hackan·c	ka-k^{w}·he·-na-w-t-si-n	hi-si·-tani-w-k
stick.up-QT-IMPF-AUX-CONN	who-ERG	LOC-hoe-3-AUX-1DAT-DAT-Q	say-QT-DU-AUX-CONN

ki·ssitenlu·k	ʔeLsitanilne	ca·skeha·na·N
ki·s-si-ten-lu-k	ʔeL-si-tani-l-ne	ca·skeh-a·na·-N
sneak.up.on-QT-DU-AUX-CONN	see-QT-DU-AUX-SUB	hoe-DEF-nothing.but

kwe·sitanu·k	kasupiksik	ʔeLsitaniL	necsitaniL
kwe·-si-tani-w-k	ka-su-piksi-k	ʔeL-si-tani-l-k	nec-si-tani-l-k
dig-QT-DU-AUX-CONN	PST-QT-sit.DU-CONN	see-QT-DU-AUX-CONN	laugh-QT-DU-AUX-CONN

ca·skehą	ka·ci·sitankiN.
caskeh-a-n	ka·-ci·-si-tan-ki-n
hoe-DEF-ABS	PST-fall-QT-DU-AUX-PHR.TRM

Now Corn Woman used to live somewhere, so they say and now she used to go about with two little girls. When the corn ran out on them, Corn Woman would carry the fanning basket in her arms into the corncrib and sit there. Whenever she went in (to the crib) she customarily brought from there a full fanning basket of corn and she used to make sofkee (corn drink) for the two of

them, which the two of them used to drink. Yet, they saw that there was nothing in that corncrib. They wondered, if she was taking out corn and beans to eat, where was she getting it? They decided that when she goes back into the crib, they will sneak up on her and see what she does. They said, "When she runs out, we'll sneak up on her and see what she does." They were sitting at the edge of the yard playing when she (Corn Woman) carried the fan into the crib. They were sitting outside when she went into the corncrib and shut the door. They ran toward the crib and stuck their heads in on her. They saw her rubbing herself repeatedly, pressing herself against the fan. She straddled the fan. There was a rustling sound as the corn fan filled up. She did the same with another fan. Again she straddled it and there was a rustling sound as the beans filled the fanning basket. They watched this. Then they ran off. "That one! I declare!" The corn and beans she was feeding them she was defecating out of her into the fans that she brought out. "Now we'll not eat any sofkee (with the corn) she makes." They no longer wanted to drink it after they found out she'd fooled them. "Okay, then you kill me, and you burn the house down. If anything grows on that spot, you must cultivate it. What you raise yourselves will be yours to eat." They killed her and burned her house down. When it was spring, something grew. They stayed there and hoed the spot. They were hoeing, but then they stopped. The hoes were sticking up. They went off to play. When they came back, another hoe would be sticking up. "Who is it that is helping us to hoe?" they said. They snuck up on the spot but they saw only hoes. They stayed there and kept hoeing (the land). They laughed at them (the hoes). Then the hoes fell to the ground.

From Haas unpublished notes as told to her by Watt Sam: Book III, 19-29. Glossed and edited with the help of Geoffrey Kimball (2014, pers. comm.).

Tunica

The Origin of the Bean

Tanisaratekahaku ′ohoyahč′eman ′u′nihkeni hinyatihč, tayanera rohpant sehihtepan, yuk′unahč, simink′unani. Tanahta haluht, hahčoni. Hinyatihč tasatosiniman, tayanera kičun, hopisitihč tahahču hayiht, yakašimisiteni. Hinyatihč tanisarahč teheyak′oman, tasatosiniman, tapiwan hahk′unani. Hinyatihč ′ašu sahkun, yak′unahč, tasatosiniman hopisitihč tanahta rohpan šimina′arani, hatikan. Tanisarahč, sahkun, ′uhtakan′akihč uhtap′ekeni. Hinyatihč tanahta haihtan, lot′uwanani. Hinyatihč tawišihč ′asani. Hinyatihč tanahta hayiht ′unašahč, tawisihč ′unrikitap′ekeni. Hinyatihč tokatekahaku ′uwita wič′awani, tanahta hayiht. Hinyatihč tanisarahč ′ak′am′ekeni. Hinyatihč tokatekahaku, ′uriš ′uhtam′unani. Hinyatihč sehihtepan, ohoyahč yukatihpowan yakoni. Hinyatihč tihpowistuk′ohoni. Hinyatihč ′uris mar′uwani. Hinya′tihč sehi sahkun, ′uspit′okeni. Hinyatihč mahon ′unani, ′uris. ′Ašu sahkun, yakateni. Šihpartosu ′ilin, čuyak′akeni. Hinyatihč ′uyanalepihk′atani. ′Uwirahk′atani. Kana lapun, sakuwitin, ′unikateni. ′Aha. Kanahkup′aha, nikoni. Toškaehkint′eku tayiwo hayiht ′uhkaliwit′ahč, lapuhč, ′unikateni. Hinyatihč toškacehkinik ′uhkalin′ukeni, tayi hayiht. Hinyatihč tašihpartosu sahkun, ′uwahkatihč toškačehkint′e kič ′uhtoh′okeni. Hinyatihč ′uyanakateni. Toškačehkiniku, lapuyan, ′uhpohtawit′ahč, samat′ihč, lapuya sak′ik′ahča, ′unikateni. ′Uwet šim ′uwana, tihčet, šimi tiwan′ahani. ′Uyanalepihk′atani. ′Iman tašihparik ′uhtapanč ašu manku piratihč ′usakukani, nikateni. Hinyatihč tiwi′utahani. Hinyatihč hat′ena, ′uyanakateni. ′Iman tašihparik ′uhtapanč, tahč′a manku pirahtihč, ′usakukani, nikateni. Hinyatihč tašihpartosuku, wiyuw′anč ′uhtap′ik′ihč

tahč′a manku piratihč, tašihparik ′usak′ik′ahča, ′unikateni. Hinyatihč ′uyanalepihot′otahč, hat′ena, mar′am′ekeni, tayanera kičun.

Ta-nisaratekaha-ku ′ohoyahč-′eman ′u′nihk-eni
DEF-orphan-M.SUF his.sister-COM DU.used.to.be-QU

hinyatihč, ta-yanera rohpant
now DEF-ocean near

sehi-htepan, yuk′una-hč, šimi-hk′un-ani.
morning-every DU.arrive-SUB play-3.HAB-QU

Ta-nahta haluht, hahč-oni. Hinyatihč
DEF-bank under sand- QU now

ta-sato-sinima-n, ta-yanera kičun, hopisiti-hč
DEF-dog-DIM-? DEF-ocean from emerge-SUB

ta-hahču hayiht, yaka-šimi-sit-eni. Hinyatihč
DEF-sand LOC come-play-HAB-QU now

ta-nisara-hč teheyak-′oma-n, ta-sato-sinima-n,
DEF-girl-F.SUF her.brother-COM-? DEF-dog-DIM-?

tapiwan ya-hk′un-ani. Hinyatihč ′ašu sahkun,
in order to catch do-HAB-QU now day one

ya-k′una-hč, ta-sato-sinima-n hopisiti-hč ta-nahta rohpan
do-HAB-SUB DEF-dog-DIM-? emerge-SUB DEF-bank near

šimi-na′ar-ani, hatikan. Ta-nisara-hč, sahkun,
play-3?-QU again DEF-girl-F.SUF one

′uh-taka-n-′aki-hč uhtap′ek-eni. Hinyatihč ta-nahta
3-chase-CAUS-SEM-SUB 3-catch-3-QU now DEF-bank

hayihtan, lot-′uwan-ani. Hinyatihč ta-wiši-hč
LOC run-SEM-QU now DEF-water-F.SUF

′as-ani. Hinyatihč ta-nahta hayiht ′unaša-hč, ta-wiši-hč
was.coming-QU now DEF-bank LOC DU.come-SUB DEF-water-F.SUF

ʼun-riki-tap-ʼek-eni. *Hinyatihč* *t-okatekaha-ku* *ʼu-wita*
3M-overtake-catch-SEM-QU now DEF-orphan-M.SUF 3M-only

wič-ʼaw-ani, *ta-nahta* *hayiht.* *Hinyatihč* *ta-nisara-hč*
climb-SEM-QU DEF-bank LOC now DEF-girl-F.SUF

ʼak-ʼam-ʼek-eni. *Hinyatihč* *t-okatekaha-ku,* *ʼu-ri-š*
enter-disappear-SEM-QU now DEF-orphan-M.SUF 3M-house-LOC

ʼam'-uhk-ʼeni. *Hinyatihč* *ʼu-ki-ku,* *ʼu-ri-š,*
disappear-3-QU now 3M-maternal.uncle-M.SUF 3M-house-LOC

ʼuh-tam-ʼun-ani. *Hinyatihč* *sehi-htepan,* *ohoyahč* *yuka-tih-po-wan*
3M-live.with-3-QU now morning-every his.sister arrive-3-see-PURP

ya-k-ʻoni. *Hinyatihč* *tih-powi-stukʼoh-oni.*
do-3HAB-QU now 3.find-could.not-QU

Hinyatihč *ʼu-ri-š* *mar-ʼuw-ani.* *Hinyaʼtihč* *sehi* *sahkun,*
now 3M-house-LOC return-3M-QU now morning one

ʼu-špitʼo-k-eni. *Hinyatihč* *mahon* *ʼun-ani,* *u-ri-š.* *Ašu*
3M-forget-3F-QU now just sit-QU 3M-house-LOC day

sahkun, *yak-at-eni.* *Šihpar-tosu* *ʼilin,* *ču-yakʼa-k-eni.*
one return-3F-QU bean-seed two take-come-3F-QU

Hinyatihč *ʼu-yana-lepi-hk-ʼat-ani.* *ʼU-wira-hk-ʼat-ani.*
now 3M-speak-ask-3F.HAB-3F.CAUS-QU 3M-ask-3F.HAB-3F.CAUS-QU

kana *lapun,* *saku-witi-n,* *ʼu-ni-kat-eni.* *ʼAha.*
anything good eat-2M.HAB-INTER 3M-say-3F.HAB-QU no

kanahkupʼaha, ni-k-oni. *T-oškačehkin-tʼe-ku* *t-ayiwo*
nothing say-?-QU DEF-kettle-big-M.SUF DEF-fire

hayiht ʼuh-kali-witʼa-hč, *lapu-hč,* *ʼu-ni-kat-eni.* *Hinyatihč*
LOC 3M-stand-2M.CAUS-SUB good- SUB? 3M-say-3F.HAB-QU now

t-oškacehkini-k *ʼuh-kali-nʼu-k-eni,* *t-ayi* *hayiht.* *Hinyatihč*
DEF-kettle-M.SUF 3M-stand-CAUS-3M-QU DEF-fire LOC now

ta-šihpar-tosu *sahkun, ʻu-wahka-ti-hč* *t-oškačehkin-tʻe* *kič*
DEF-bean-seed one 3M-break-3F-SUB DEF-kettle-big LOC

ʻuh-tohʻo-k-eni. *Hinyatihč* *ʻu-yana-kat-eni.* *T-oškačehkini-ku,*
3M-throw-3F.CAUS-QU now 3M-speak-3F.HAB-QU DEF-kettle-M.SUF

lapuyan, ʻuh-pohta-witʻa-hč, *sam-atʻi-hč,* *lapuya* *sak-ʻik-ʻahča,*
well 3M-boil-2M.CAUS-SUB finish-3F.COND-SUB well eat-2M-FUT

ʻu-nikateni. *ʻUwet* *šim* *ʻu-wana,* *tihčet,* *šimi* *ti-wan-ʻah-ani.*
3M-say-3F.HAB-QU he on his part play 3M-want she on her part play 3F-want-NEG-QU

ʻU-yana-lepi-hk-ʻat-ani. *ʻIman* *ta-šihparik* *ʻuh-tapa-n-č* *ašu*
3M-speak-ask-3F.HAB-3F.CAUS-QU I DEF-bean 3M-plant-1-SUB day

manku *pira-ti-hč* *ʻu-saku-k-ani,* *ni-kat-eni.* *Hinyatihč*
four turn-3F-SUB 3M-eat-1.HAB-QU say-3F.HAB-QU now

tiwi-ʻut-ah-ani. *Hinyatihč* *hatʻena,* *ʻu-yana-kat-eni.* *ʻIman*
hear-3M-NEG-QU now once.more 3M-speak-3F.HAB-QU I

ta-šihparik *ʻuh-tapa-nč,* *tahčʻa* *manku* *pira-hti-hč,* *ʻu-saku-k-ani,*
DEF-bean 3M-plant-SUB month four burn-3F-SUB 3M-eat-HAB-QU

ni-kat-eni. *Hinyatihč* *ta-šihpar-tosu-ku,* *wi-yuwʻa-n-č* *ʻuh-tapʻi-kʻi-hč*
say-3F.HAB-QU now DEF-bean-seed-M.SUF 2M-give-1.COND-SUB 3M-plant-3M.COND-QU

tahčʻa *manku* *pira-ti-hč,* *ta-šihparik* *ʻu-sak-ʻi-kʻahča,* *ʻu-ni-kat-eni.*
month four turn-3F-SUB DEF-bean 3M-eat-2M-FUT 3M-say-3F.HAB-QU

Hinyatihč *ʻu-yana-lepi-hot-ʻota-hč,* *hatʻena,* *mar-ʻam-ʻek-eni,*
now 3M-speak-ask-finish-3F.CAUS-SUB once.more return-disappear-3F-QU

ta-yanera *kičun.*
DEF-ocean LOC

(Once there) were an orphan boy and his sister. Every morning they would go to the edge of the ocean to play. Under the bank there was sand. Some puppies emerged from the ocean and came to play in the sand. The girl and her brother tried to catch the puppies. One day when they came

(there), the puppies came out to play near the bank again. The girl chased one (of them) and caught it. The two (of them) were running toward the bank. The waves were coming (toward them). When they came to the bank, the waves reached them and caught them. Then the orphan boy climbed up onto the bank alone. The girl had gone down (into the water) and had disappeared. The orphan boy went home. He lived with his maternal uncle at (the latter's) home. Every morning he went (there) and tried to find his sister. He could not find her. He went back home. One morning he forgot (to go). He was just sitting at home. One day she came back. She brought two beans. She spoke to him. She asked him a question.

"Have you anything good to eat?" she said.

"No. There is nothing," he said.

"If you place the kettle on the fire, it will be a good thing," she told him.

So he placed the kettle on the fire. Then she broke one of the beans and put it in the kettle.

She spoke to him. "If the kettle boils thoroughly and (the bean) gets done, you will eat well (of it)," she told him.

He, for his part, wanted to play (but) she did not wish to play. She spoke to him. "Four days after 1 plant the bean I eat it," she said.

He did not hear her.

Then she spoke to him once more. "Four months after I plant the bean I eat it," she said.

"If 1 give you (this) bean and if you plant it, you will (be able to) eat it in four rnonths," she told him.

When she had finished speaking, she went back and disappeared into the ocean once more.

Since the orphan boy wanted to play, he did not hear his sister the first time she spoke to him. The Tunica Indians believe that had he been more attentive it would be possible to raise a crop of beans in four days instead of four months.