

# A Reanalysis of the Dorsey-Swanton U-Circumflex and U-Brève in Biloxi<sup>1</sup>

David V. Kaufman

## Introduction

The endangerment and rapid loss of American Indian languages over the last century has greatly increased the importance of texts and vocabularies collected by the linguistic field workers of earlier times. These trained and semi-trained linguists used transcription systems and conventions that today often require interpretation. This makes comparative phonology and grammar as well as the art and science of philology of great importance in linguistic analysis. Without these important adjuncts to ordinary phonological and morphosyntactic analysis, much older material would remain un- or under-utilized. This paper applies comparative and philological techniques to the study of the texts and vocabulary of the Biloxi language compiled by the missionary-linguist James Owen Dorsey in 1892-93.

Biloxi is a Siouan language. Specifically, it is a member of the Ohio Valley, or Southeastern<sup>2</sup>, branch of this large language family. Its closest known linguistic cousins are Ofo and Tutelo. Biloxi was originally spoken in southern Mississippi where the tribe was first encountered by Europeans in 1699. As the tribe moved west, it became spoken in Louisiana and eastern Texas. The last known native semi-speaker of Biloxi died in 1934. The few remaining members of the Biloxi tribe currently share a small reservation with the Tunica, a linguistically unrelated tribe, in Marksville, Louisiana.

Biloxi is the best-documented member of the Southeastern branch of Siouan. All of the known languages of this branch are extinct. Thus, the analysis and study of Biloxi is of crucial importance, not only for its own sake, but for the knowledge yet to be gained from this little-studied branch of Siouan and the contribution it can make to Siouan studies and linguistics in general.

Before further adequate analysis of Biloxi can be done, however, it is important first to clarify some matters of Biloxi phonetics and phonology in order to achieve some degree of acceptable orthographic standardization. Attempts have been made to standardize and simplify the orthography appearing in *A Dictionary of the Biloxi and Ofo Languages* (1912). However, such attempts have been based on inferior philological and comparative techniques and have led to unwarranted oversimplification and overnormalization.

---

<sup>1</sup> I would like to thank Robert Rankin (University of Kansas), Pamela Munro (University of California, Los Angeles), John Boyle (University of Chicago), and Allard Jongman (University of Kansas) for their input and support in the writing of this paper. Any errors are strictly my own.

<sup>2</sup> The term "Southeastern" was proposed by Haas (1968) to name this branch of the Siouan language family so as to avoid any historical and geographical connotations implicit in the term "Ohio Valley."

## Purpose

The primary purpose of this paper is to clarify one phonetic and phonological aspect of Biloxi that, along with other aspects yet to be analyzed and, along with reconsideration of the long ignored double stop series<sup>3</sup>, will lead to a more accurate standardization and representation of its orthography. I shall explore, for a limited set of data, the true nature of the Dorsey-Swanton (D-S) u-circumflex (û) and u-brève (ũ) graphs as they appear in the D-S dictionary.

## Background

Over the past century, beginning with the D-S dictionary published in 1912, several orthographies to represent the phonetics and phonology of Biloxi have been devised. The D-S dictionary orthographic system based on Dorsey's original phonetic transcription system as revised by Swanton includes the following symbols: a, ȧ, â, ă, b, c, d, dɕ, dj, e, ẽ, ē, ê, f, g, h, i, ĭ, ĩ, j, k, x, ɣ, ɕ, l, m, n, ñ, o, õ, p, p̣, r, s, t, ɬ, tc, tɕ, u, û, ũ, ʉ, ü, w, y, and the diacritic <sup>-n</sup> (reflecting vowel nasalization). Paula Einaudi, in her 1974 dissertation, assumed the following phonetic values for these graphs:

	labial	dental	palatal	velar	glottal
stops	p	t	c (tc)	k	
	p̣	ṭ		ɕ	
	b	d	j (dj)	g	
affricates		tʰ (tɕ)			
		d (dɕ)			
fricatives	f	s	ʃ (c)	x, ɣ	
nasals	m	n		ŋ	
laterals		r			
		l			
glides	w		y		h

<sup>3</sup> While not the primary focus of this paper, I do incorporate herein an updated orthographic system differentiating plain (p, t, k) vs. aspirated (ph, th, kh) stops, recognized by Dorsey in his original orthographic notation but long ignored by subsequent Biloxi analysts (Rankin unpublished ms. 2005). This reconsideration of Biloxi plain vs. aspirated stops is also a key component to normalizing and accurately writing the Biloxi language.

vowels :

front		back
i, ī		u, ū
I (ĩ)	ə (a, û, ũ)	U (û)
e, ē	^ (ũ)	o, õ
ɛ (ě, ê)		
æ (ä)	ɔ (â)	
	a, ā	
		+ nasalization

The above inventory, however, is much too elaborate and extensive for representing the actual phonemes of Biloxi. G. Hubert Matthews (1958) recognized this excess and developed his own phonetic system for use in working with Biloxi as follows:

p	t	d	c	k		i	j		u	ɯ
	s			x	h		e	o	ɔ	
m	n						a	ɑ		
w	y									

Matthews posited four nasal vowels: ɑ, j, ɔ, ɯ. Matthews collapsed the Biloxi stops into a single series. This was an instance of oversimplification that was accepted by all other linguists working on Biloxi throughout the twentieth century, although Mary Haas (1969) indicated she was aware of the possibility of aspiration in Biloxi.

Haas (1968) formulated the following inventory, not drastically changed from that of Matthews, based on her own brief Biloxi fieldwork:

p	t	č	k		i	j		u
	d					e	ə o	ɔ
	s	x	h				a	ɑ
m	n						+ length for all vowels except ə	
w	y							



Nasal

ĩ

o

a

This inventory takes into consideration the distinction between the plain and aspirated stop series. I posit three nasal vowels: a, ĩ, o. I have chosen to follow the lead of Haas and Einaudi in positing <o> instead of <u>, since, as Einaudi (1974) effectively stated, “/o/ occurs in the corpus [of data] far more than /u/ and almost all entries showing /u/ have variant forms with /o/.” I also incorporate ə (schwa), a sound heard by both Dorsey and Haas thereby implying its existence, apparently either as an unstressed version of stressed [a] or, perhaps more likely, a short [a] vs. long [a]. I have reintroduced ε and o as distinct from e and o. The /ε/ was recognized and noted by Dorsey as distinct from /e/ and /o/ as distinct from /o/. The distinction in vowel quality between /o/ and /o/ was also noted by Haas (1968). The dotted arrows in my inventory represent the apparent merging of /e/ into /i/ and /o/ into /u/ (i.e., /i/ became an allophone of /e/ and /u/ an allophone of /o/).

The question of Biloxi vowel length as occasionally marked by D-S (1912) and heard and marked by Haas (1968) certainly warrants further analysis, but, being outside the scope of this paper, it is not included in the inventory for the current discussion.

### A Reanalysis of the D-S U-Circumflex (û) and U-Brève (ũ)

According to the pronunciation guide in the D-S dictionary (Dorsey & Swanton, 1912, p. 2), û represents the oo of English *foot*, and ũ the u in *but* (approximately the ə or schwa sound). We must take into consideration, however, that Dorsey died in 1895, shortly after doing his fieldwork with the Biloxi language (1892-1893). The D-S dictionary was not published until seventeen years after his death, in 1912. Prior to the dictionary’s publication, Swanton edited the data and made changes to some of Dorsey’s graphs, including the reversing of <û> and <ũ>. To further complicate matters, Swanton’s reversal of these symbols was not complete before the dictionary was published (Rankin, personal communication, 2005). Thus, the true nature of most occurrences of û and ũ in the D-S data remains elusive. This paper is the first step in attempting to accurately discern the true nature of these graphs in order to establish an accurate, standardized orthography to best represent the Biloxi language.

Through most of the twentieth century, only brief mentions were made of this aspect of Biloxi phonetics and phonology. In his dissertation, *Handbook of Siouan Languages* (1958), G. Hubert Matthews noted in discussing the phonemes of Biloxi that “a = û ~ ũ -k, a” apparently suggesting that ũ and û represented [a] before [k]. In her dissertation, *A Grammar of Biloxi* (1974), Einaudi decided to normalize by simply transcribing all instances of the D-S ũ and û as <u>, so that, for example, *sũpi* “black” became *supi* (see #3 in the ensuing data). Upon further analysis, however, I find that Matthews’s and Einaudi’s proposals were incorrect, both being instances of oversimplification and overnormalization.

## Data and Method of Collection

I used three basic methods in accumulating the following data consisting of a total of 21 words, divided into three sets:

- A) I selected words in the D-S dictionary appearing with the graphs <û> and <ÿ>. I then looked for cognates of these words in other Siouan languages, especially among those most closely related to Biloxi, such as Ofo and Tutelo.
- B) I looked for words appearing with <û> and <ÿ> borrowed from non-Siouan languages which historically had close contact with Biloxi, such as the Muskogean languages Alabama and Choctaw. Biloxi was in close geographic proximity to the Muskogean family of languages as well as Mobilian Trade Jargon (MTJ)<sup>4</sup>, and borrowing of vocabulary items from these languages is evident in Biloxi.
- C) I reviewed Haas's article, "Last Words of Biloxi" (1968), in which she presented an analysis of 54 words elicited from the last known native speaker of Biloxi, Emma Jackson, in 1934, in order to compare her transcriptions of words to those in which D-S transcribed û and ÿ.

For the following data, note that the current orthography uses <ą> to represent the D-S syllabic [n].

---

<sup>4</sup> Mobilian Trade Jargon (MTJ) was a lingua franca largely based on Choctaw and used for trade along the Gulf coast and Mississippi Valley around the time of European arrival. Many native Biloxi speakers were also said to be proficient in MTJ.

## A) Based on cognates with other Siouan languages

	<b>D - S BILOXI form</b>	<b>REVISED BILOXI form (updated orthography)</b>	<b>Based on COGNATE word(s)</b>	<b>From COGNATE LANGUAGE(S)</b>
1. alligator	nûxodi	naxodi	akshoti	Ofo
2. belch	psûki	psuki	pšuki apshusě	Hidatsa Ofo
3. black	sûpi	sapi	sapa sape	Dakota Osage
4. burst	tûpo	tapo	napopa	Dakota
5. deep	skûti	skuti	škupe	Osage
6. duck	a <sup>n</sup> sûna	aşana <sup>5</sup>	aşna, aşana (Haas); o <sup>n</sup> fana	Ofo
7. fragrant	nûpihi	naphihi	naphihi	Ofo
8. hole	tûpe	tuphe	tuphohi	Ofo
9. loose	xwûdike	xwudike	-xwu (make noise)	Lakota
10. night	pûsi	pusi ~ *posi <sup>6</sup>	upofi ohsi	Ofo Tutelo
11. ripe	atûti	atuti	atuti	Ofo
12. six	akûxpe	akaxpe	akape şape	Ofo Osage
13. throw away	nûdě	nude	nuti	Ofo
14. wind	xûxwě	xuxwe <sup>7</sup>	ashusě	Ofo

<sup>5</sup> *aşana* was revised based on two sources: elicitation by Haas and Swadesh (1968) as well as on the Ofo cognate, lending more support to this form with *a*.

<sup>6</sup> Dorsey, in his 1893 address to the American Association for the Advancement of Science (AAAS), states there is a vowel sound in Biloxi which he notated as *ȳ* and describes as “a sound between *o* in *no* and *oo* in *tool*.” (This symbol does not, however, occur in the published 1912 dictionary.) Haas (1968) states that /*u*/ is an allophone of /*o*/. Thus we must take into account that there were a couple of different *o* sounds, including one which Dorsey wrote as *â* and described as the *aw* in *law* and another that he described as *ȳ* above. This last may have allophonically alternated in spelling between *o* and *u* (see the D-S 1912 dictionary for words like *aho*, bone, with variant spelling *ahu*). Thus I propose that the *u* in *pusi* is the latter, alternating with *o* (perhaps alternatively *\*posi*), which then perfectly matches the Ofo and Tutelo cognates.

			<b>huci</b>	Hidatsa
15. by force, hit	dūk- dūkū-	daka- <sup>8</sup>	<b>laka-</b>	Tutelo

## B) Borrowing from non-Siouan sources

	<b>D-S BILOXI</b> form	<b>REVISED BILOXI</b> form	<b>ORIGINAL</b> <b>WORD</b>	<b>ORIGINAL</b> <b>LANGUAGE</b>
16. north, north wind	xūnūmi	xanami <sup>9</sup>	falammi	Choctaw
17. coffee	kūxwi	kaxwi, kafi	café	French or Spanish <sup>10</sup>

## C) Based on analysis of Haas's article, "The Last Words of Biloxi" (1968)

	<b>D-S BILOXI</b> form	<b>REVISED</b> <b>BILOXI</b> form	from <b>HAAS</b> <b>TRANSCRIPTION</b>
18. bird	kūdēska	kadeska <sup>11</sup>	kəde·ska
19. dish	mūsuda mūsūda	(a)masada <sup>12</sup>	əma·sida əma·səda
20. meal	nūpxi	napaxi	nəpəxi
21. squirrel	nsūki nasūki	ʔsaki nasaki	nsəki, əsəki

**Analysis**

I began this paper by stating that the correct analysis of D-S's <û> and <ũ> graphs had remained elusive to linguists for nearly a century and had even prompted unwarranted oversimplification and overnormalization. The current set of data gathered for this paper proves the accuracy of this assertion. An analysis of this data reveals that D-S's <û> and <ũ> graphs may represent

<sup>7</sup> There is also the similar onomatopoeic word *wuxwe*, meaning "roar of water," lending more support to this form with *u*.

<sup>8</sup> This is one of several Siouan instrumental prefixes used to indicate *how* something is done (e.g., by force, by fire, by use of teeth, hands, feet, etc.). Note that Tutelo lacks *d* while Biloxi lacks *l*, but both these phonemes are known to descend from Proto-Siouan (PS) \**r*.

<sup>9</sup> Since Biloxi lacks Muskogean *f* and *l*, these phonemes were replaced with *x* and *n* respectively. It is interesting to note here that Haas related Proto-Muskogean (PM) \**f* to an earlier \**x*<sup>w</sup> so that this Biloxi data lends some credence to this reconstruction (Munro, personal communication, 2006).

<sup>10</sup> Perhaps via MTJ.

<sup>11</sup> Though not the focus of this paper, it should be noted that the dot in the Haas transcription indicates length of the preceding vowel, meaning this could possibly be written *kadeeska*.

<sup>12</sup> Though not the focus of this paper, it should be noted that the dot in the Haas transcription indicates length of the preceding vowel, meaning this could possibly be written (a)*maasada*.



either <u> or <a> when compared with cognate forms in other Siouan languages or even, in a couple of cases, with non-Siouan languages from which borrowing is evident.

Specifically, in the current data, û correlates with <u> eight times and with <a> twice, while ũ always correlates with <a>, indicating that these correlates are not completely random. There are also two cases (see #19 and 21) where both û and ũ correlate with <a>, since they occur in variants using both graphs in the D-S dictionary. While there is a significant degree of correlation between û and [u] and ũ and [a], the actual phonemic and orthographic representation of û and ũ must be taken on a case-by-case basis since there is not a consistent delineation, especially in the case of û. This is perhaps owing to Swanton's incomplete reversal of these û and ũ graphs prior to the D-S dictionary's publication.

We can now be relatively certain about the proper phonemic and orthographic representation of the 21 words presented in this data. However, more work needs to be done to further ascertain the true phonemic nature of other Biloxi words containing û and ũ by discovering more possible cognates with other Siouan languages as well as possible borrowings from non-Siouan sources.

I have used comparative linguistic techniques in the present analysis and discussion of this phonological aspect of the Biloxi language. These techniques have proven invaluable in helping to interpret and define the D-S graphs for a standardized orthography. Much of the Biloxi material and the material of other languages now extinct with only the notes and vocabulary lists gathered by linguists of past centuries would remain undervalued and underutilized without the application of these techniques.

## References

- Dorsey, J. and J. Swanton (1912). *A dictionary of the Biloxi and Ofo languages*. In Bureau of American Ethnology, Bulletin 47. Washington, DC.
- Einaudi, P. (1974). *A grammar of Biloxi*. New York: Garland.
- Haas, M. (1968). The last words of Biloxi. In *International Journal of American Linguistics*, 34:77-84.
- Haas, M. (1969). Swanton and the Biloxi and Ofo dictionaries. In *International Journal of American Linguistics*, 35:286-290.
- Matthews, G. (1958). *Handbook of Siouan languages*. University of Pennsylvania dissertation.
- Rankin, R. (n.d.). On Biloxi aspiration. Unpublished manuscript, University of Kansas.