

# Francis Drake's 1579 voyage: Assessing linguistic evidence for an Oregon landing\*

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**Abstract:** This article consists of a linguistic investigation of the hypothesis that Sir Francis Drake may have landed somewhere on the Oregon coast in 1579 rather than in California, as is usually assumed (Heizer 1974; Heizer and Elmendorf 1942), and surveys language data from select Native Oregon languages. There are some compelling and plausible matches which come to light in this study, and though they are by themselves inconclusive as evidence, that should be considered in light of any forthcoming physical evidence, especially since some of the matches from these Oregon languages are as-close-to or stronger than the Miwok correspondences cited in Heizer and Elmendorf (1942) and Heizer (1974).

## 1 Introduction

This article reports on the results from an investigation by the Drake Anchorage Research Collaboration (DARC) into the origins of linguistic material collected during Francis Drake's journey up the Pacific Coast in 1579 (Drake 1628). The chief purpose of the investigation is to assess whether or not Drake may have contacted an Oregon group, particularly of Salishan, 'Penutian'<sup>1</sup>, or Athabaskan-speaking stock, rather than ancestors of the California Coast Miwok, as is generally assumed (Heizer 1947; Heizer and Elmendorf 1942).<sup>2</sup> The relevant linguistic material from Drake's voyage consists of short word lists collected by (i) Francis

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\*The Drake Anchorage Research Collaboration (DARC) consists of Melissa Darby, Lee Lyman, John Lyon, Margaret Mathewson, Gary Wessen, Heather Wolfe, Lawrence Conyers, Roddy Coleman, and Peter Mancall. Thanks especially to Melissa Darby for organizing the group. More information on DARC can be found on the website, [www.drakeanchorageresearch.com](http://www.drakeanchorageresearch.com). Thank you to the purveyors of the Southwest Oregon Research Project (SWORP) collection at the University of Oregon, particularly to David Lewis of the Grande Ronde Tribe. Thanks also to Henry Zenk for valuable feedback on possible Chinuk Wawa connections, and to Victor Golla, Peter Mancall, Don McNaughton, and Paul Solimano for reviewing earlier drafts of this report. Thanks also to Patty Whereat Phillips for supplying Coos and Siuslaw vocabularies.

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<sup>1</sup>The Penutian family is only a hypothesis, as it has been for a long time. I nevertheless use this term as a convenience.

<sup>2</sup>I do not address any ethnographic or archaeological evidence in this paper. Any linguistic data taken from this report as evidence for an Oregon landing must necessarily be corroborated by ethnographic and archaeological evidence.

Fletcher, Drake's chaplain, on the 1579 voyage; and (ii) Richard Madox, a member of the 1582 Fenton expedition which was a follow-up to Drake's 1579 voyage, and which included four persons who sailed with Drake in 1579 and who related to Madox words and phrases they remembered hearing from the contact group. Together, these document a total of seven words or phrases heard by Drake's crew members at the time of contact (see Section 2).

The primary linguistic means I use to assess the Oregon hypothesis involves consulting texts and other language documents from languages spoken primarily along the Oregon coast and west of the Cascade Range. Unfortunately, consulting native speakers of these languages is for the most part no longer a possibility.<sup>3</sup> Methodologically, I follow Heizer and Elmendorf (1942) and Heizer (1947) in including direct vocabulary comparisons (i.e. 'semantically-similar forms'), but also include broader comparisons consisting of sequences which are phonologically similar to those given in Fletcher and Madox's word lists (i.e. 'phonologically-similar forms').

This second, broader approach is necessary because of a wide margin for error stemming from the following linguistic variables. First, the orthographical conventions of Elizabethan England may not accurately represent the sounds which were actually spoken by members of the contact group. Second, the recorded meanings of the documented words and phrases may be 'incorrect inductions of meaning' (Heizer and Elmendorf 1942) on the part of the ship's crew members. Third, sound change can and does affect language, especially over the course of 300–400 years. By a broader comparative methodology, we are able to at least acknowledge this wide margin for error, and then on a case-by-case basis, judge whether there is any merit in a particular correspondence.

The data in this report yield numerous interesting phonological correspondences which hint at possible cognacy, and even some semantic correspondences. Nevertheless, I find *no conclusive linguistic evidence* for an Oregon landing, for the simple reason that none of the languages surveyed here present matches for *all* of the items on the list. We could speculate that the group which Drake contacted was linguistically (and culturally) heterogeneous, perhaps speaking either two separate languages or else a form of trade-jargon pre-dating modern Chinuk Wawa in addition to an indigenous language. Also, considering that bi-lingualism was probably the norm rather than the exception, one individual from the contacted group may have uttered words and phrases from more than one language. Given these possibilities, a nearly complete composite list of possible correspondences may be assembled, which I include in the conclusion section. The problem is that it is not possible to know for sure if, or how, the group Drake contacted was linguistically heterogeneous. This entails that without corroborating evidence, these correspondences must remain speculative.

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<sup>3</sup>There are several individuals who speak one of the target languages, but the Siletz Tribe declined to comment, or their policy is not to comment.

It should be said that Heizer and Elmendorf's (1942,1947) Coast Miwok data also do not match all the items on Fletcher's and Madox's word lists. The sound correspondences they suggest for several of the items on the list are rather implausible, and at least one of their correspondences can only be made pending an 'incorrect induction of meaning' (i.e. semantic non-correspondence). Thus, from the linguistic angle, their analysis faces some of the same challenges as the current study. They do, however, present an extremely close correspondence between Fletcher's word for 'bread' and the Coast Miwok word for 'acorn bread', which is difficult to argue against.

The two main criteria used to judge the strength of any given match should be semantic and phonological similarity to items on the Fletcher/Madox word list. In the event that new linguistic or archaeological evidence surfaces, or further documentation from Drake's voyage becomes available, the data included in this report may be integral to the question of where Drake landed. Hypothetically speaking, this could include a scenario where evidence surfaces that the contacted group was culturally heterogeneous, hinting at multiple linguistic origins for the Fletcher/Madox lists, and/or evidence that members of the contacted group were bilingual. Because accounts of Drake's voyage make no specific mention of any such possibilities<sup>4</sup>, there seems little at present to motivate further investigation along these lines. In any case, this assessment should not dissuade archaeological investigation of potential landing sites in Oregon, since given the paucity of linguistic data, it is clearly the physical evidence that will speak most strongly in favor of one site over another.

In Section 2, I present the linguistic data from Drake's voyage. In Section 3, I review the linguistic claims of Heizer and Elmendorf (1942) and Heizer (1947) that Drake contacted the ancestors of the Coast Miwok in California. In Section 4, I defend the current investigation on the grounds that Heizer and Elmendorf (1942) did not conclusively show that the language of the Fletcher/Madox word list is Coast Miwok. In Section 5, I expand on problems raised by Drake's linguistic data, which result in the wide margin of error just discussed. In Section 7, I discuss in detail the methodology I use. In subsequent sections, I present relevant data from Oregon languages. These include languages from the Salishan (Section 9), 'Penutian' (Section 10), Athabaskan (Section 11), and Chinookan (Section 12) families. In Section 13, I discuss possible connections to a trade jargon for several of the items on the word list. In Section 14, I summarize a few important points and conclude.

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<sup>4</sup>Although Heizer (1947:260) re-telling of Drake's landing states that "... even larger crowds of natives came on the 26th, and among them were the *Hioh* and his retinue. The group arriving on the 26th probably came from some distance." This is in contrast to the smaller group that was contacted on the 23rd. The two groups could conceivably represent two separate languages.

## 2 The word list

At the time of Drake’s landing on the Pacific coast of what is now the United States, the ship’s chaplain Fletcher recorded four words from a contacted group, which were later reported in Hakluyt’s compiled account of Drake’s circumnavigation, entitled *The World Encompassed* (Drake 1628).

A later manuscript was written by Richard Madox, who was not himself a member of Francis Drake’s expedition, but was a member of the 1582 Fenton expedition which included four persons who did accompany Drake on his original voyage, some of whom reported to him words and phrases they remembered, and of which Madox recorded four (Heizer 1947). Three of the four items were not recorded by Fletcher. Both lists are shown below in Table 1, adapted from Heizer and Elmendorf (1942:214), and including various spellings of individual entries.<sup>5</sup>

**Table 1:** The Fletcher/Madox word list

	<b>Fletcher</b>	<b>Madox</b>	<b>English Translation</b>
1	hióh	hioghe	(a) king
2	tobáh tobâh tabáh tobàh	—	an herb
3	gnaáh	—	entreat to sing
4	petáh	—	root whereof they make a kind of meal, and either bake it into bread or eat it raw
5	—	cheepe	bread
6	—	huchee kecharoh	sit down
7	—	nocharo mu	“tuch me not”

Two of these items, *hióh* and *gnaáh*, were explicitly associated with the local population by Fletcher in his account of the event. For the other two items, *tobáh* and *petáh*, the association is implicit in his account. Given that the items on Madox’s list were obtained indirectly, their associations are less clear.

The word list and accompanying narratives constitute an intriguing, moving account of a Pacific Coast culture’s first contact with Europeans. While the historical importance of the event cannot be overstated, the list itself raises many questions, the foremost being “Which language do these items come from?” Heizer and Elmendorf (1942) and Heizer (1947) address this question with admirable

<sup>5</sup>Elizabethan English spellings were non-standardized, and so it is perhaps not surprising to find multiple spellings of specific items from the same author within the same account. For simplicity, when referring to an item on this list, I use only the first spelling.

clarity. I now summarize their claims.

### 3 Review of the linguistic evidence for the Coast Miwok hypothesis

Heizer and Elmendorf (1942) and Heizer (1947) claim that the items on Fletcher's and Madox's lists may be identified as belonging to an earlier form of Coast Miwok.<sup>6</sup> Their claims are based on linguistic as well as compelling ethnographic and archaeological evidence, from which Heizer (1947) concludes that Drake's Bay in California is the most likely location for Drake's anchorage. The proposed Coast Miwok cognates listed in Heizer and Elmendorf (1942) and Heizer (1947) are as follows in Table 2:<sup>7</sup>

**Table 2:** Heizer and Elmendorf's Coast Miwok correspondences

	Fletcher/Madox	Translation	Coast Miwok	CM Translation
1	hióh	a king	hoi'pu oiya	chief friend
2	tobáh	an herb	kaya'u	tobacco
3	gnaáh	entreat to sing	koya'	sing
4	petáh	root. . .	poto' putcu haka	any kind of plant wild onion (Kroeber 1925) soaproot
5	cheepe	bread	tci'pa	bread (from acorn meal)
6	huchee kecharoh	sit down	a'tci kotca'to ho'ki ko'tcaDo	step into the house go into the house
7	nocharo mu	touch me not	notca'to mu notca mu notca	on the other side yonder, over there farther, yonder

Heizer (1947) analyzes *hióh*, *gnaáh*, *cheepe*, *huchee kecharoh*, and *nocharo mu* as deriving from the Coast Miwok language. *Tobáh* and *petáh*, he considers to be borrowings from English and/or words assigned by Drake's crew members to objects which they perceived to be *tobacco* and *potatoes*. This makes sense in light of the absence of any clear Coast Miwok cognates for these two forms<sup>8</sup>, and

<sup>6</sup>Coast Miwok is a Utian language, though it was traditionally thought to belong to the Penutian family (Mithun 1999).

<sup>7</sup>Heizer and Elmendorf (1942) use 'tc' for English 'ch', or Americanist /č/. The ´ symbol marks a stressed syllable. A practical list of orthographic translations is given in the appendix.

<sup>8</sup>Though Heizer (1947:269) does discuss two possible alternative matches for *petáh*, listed above.

to their obvious similarities to English *tobacco* and *potato*. Heizer and Elmendorf (1942:215) note that the Coast Miwok form *poto* ‘hardly fits Fletcher’s description of the plant’ described as *petáh*, and the *tobâh* ~ *kaya’u* correspondence is clearly not very close.

With regards to the items that are purportedly Coast Miwok, the cognacy between the two items *hióh* and *gnaáh* and their closest Coast Miwok correspondences is questionable, as Heizer and Elmendorf (1942) and Heizer (1947) both concede. More specifically, the labial consonant /p/ in Coast Miwok *hoi’pu* remains unexplained, and likewise the /y/ in *koya’*. Even allowing for the fact that Fletcher and Madox had no previous experience transcribing unfamiliar languages, it seems unlikely that /p/ would have been transcribed if there *were* no /p/, as in *hióh*, or that /n/ could be mistranscribed for a /y/, as in *koya’*. Although the sound changes needed to establish the Coast Miwok forms as cognates are not impossible, they also cannot be motivated from such a small data set.<sup>9</sup>

From the linguistic perspective, the strongest evidence for their claim that Drake contacted the ancestors of the modern Coast Miwok comes from the apparently clear cognacy of Madox’s item 5 *cheepe* ‘bread’ with Coast Miwok *tcí’pa*. Item 6 *huchee kecharoh* ‘sit down’ has a reasonably close phonological correspondence to Coast Miwok *a’tcí kotca’to* ‘step into the house’<sup>10</sup>, however they seem to be semantically unrelated. Heizer and Elmendorf (1942:216) attribute this discrepancy to an ‘incorrect induction of meaning’, however the context in which *huchee kecharoh* was uttered is simply not known, and it is far from clear whether there were even any ‘houses’ in the context of discourse. Likewise, Madox’s *nocharo mu* with Coast Miwok *nocha’to mu* stand in a close phonological correspondence, but not necessarily a semantic one.<sup>11</sup>

Despite the tight semantic and phonological correspondence of *cheepe* to modern Coast Miwok *tcí’pa*, and the relatively close phonological correspondence of *huchee kecharoh* and *nocharo mu* to Coast Miwok *a’tcí kotca’to* and *notca’to mu* respectively, there is reasonable doubt concerning the origins of the other four items on the list. That only three of the seven items on the list have convincing correspondences reaffirms the fact there has never been any conclusive evidence that the items on this list are Coast Miwok, or any other California language. We might ask whether any other languages exhibit a closer set of matches than Coast Miwok.

<sup>9</sup>The Oregon data, of course, face the same challenge.

<sup>10</sup>Morphologically this form consists of: *a’tcí*, step; *ko’tca*, house; *-to*, locative

<sup>11</sup>There is a glossing discrepancy worth noting for the Coast Miwok equivalent of *nocharo mu*. Heizer and Elmendorf (1942) gloss it as meaning ‘on the other side’, while Heizer (1947:273–274) glosses it as ‘keep away’, ‘stay over there’, ‘stay away’. In other words, it is not clear from Heizer and Elmendorf (1942) that the phrase has imperative force, though it may in fact.

## 4 In defense of our inquiry

The following objections to our investigation may be raised (and have been raised): First, three out of seven cognates is actually a remarkable record, especially given the time interval between Drake's voyage and Heizer and Elmendorf (1942), and so the fact that four items do not have close correspondences should not at all detract from the general acceptance of the Coast Miwok hypothesis. Second, even if the linguistic comparisons are less than sound, the linguistic evidence is in any case secondary to the stronger ethnographic and archaeological evidence, all of which converge on the Coast Miwok hypothesis, as laid out in Heizer (1947).

Our response to the first objection is as follows: we fully recognize that three of the Fletcher/Madox forms appear to have Coast Miwok cognates. Because of the wide margin for error discussed in the introduction, however, it is prudent to thoroughly examine the native languages of Oregon in order to determine whether equally strong, or perhaps stronger, linguistic evidence might exist for an Oregon landing.

Our response to the second objection is as follows: in keeping with the interdisciplinary mandate of the Drake Anchorage Research Collaboration, this investigation is necessarily carried out with the knowledge that linguistic evidence is only *one* thread of evidence which may speak out in favor of one site versus another, and that a thorough (re-)examination of physical and ethnographic evidence will be necessary before we can accurately state exactly how strong a case can be made for an Oregon landing. That said, even though linguistic evidence for an Oregon landing should prove inconclusive, other cultural or physical evidence for an Oregon landing should certainly not be dismissed.

In short, given the limitations on the amount and quality of the data recorded for this event, it is and likely always will be an *open, empirical question* concerning which language the items on the Fletcher/Madox list derive from. Greater or lesser likelihoods for various hypotheses can certainly be weighed and discussed, and to date, the Coast Miwok hypothesis is certainly the most likely. Nevertheless, as scientists who leave no stone unturned, however unremarkable, a range of Oregon hypotheses are certainly not beyond the realm of inquiry.

## 5 A closer analysis of Fletcher/Madox orthography: Possible phonemic correspondences

As discussed in the previous section, there are reasons to question the accuracy of the Fletcher/Madox word list in (at least) two respects. First, the Fletcher/Madox word list may not represent a phonologically or phonetically accurate transcription.<sup>12</sup> That is, the sounds represented by the symbols chosen by Fletcher/Madox

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<sup>12</sup> Although Madox was able to write in Greek and Latin, being a scholar of ancient languages does not necessarily make one a good phonetic transcriptionist.

may have no real status in the target language, or a given symbol may represent a mishearing of a segment phonetically similar to that which is usually represented by the symbol, but which is nevertheless a distinct phoneme. Second, the Fletcher/Madox word list may include ‘incorrect inductions of meaning’, as described by (Heizer and Elmendorf 1942) for their Coast Miwok correspondence to *huchee kecharoh*. If so, these are semantic inaccuracies, for which a given word may be understood to denote a contextually relevant object or action, but which in reality, denotes a different object or action which was also present in the same context, yet was overlooked as unimportant or perhaps not even perceived.

If we are to interpret the Fletcher/Madox orthography as phonemically accurate, then we have the following partial inventory for our mystery language, given in Table 3.

**Table 3:** Target consonants and vowels (assuming a phonemically accurate Fletcher/Madox orthography)<sup>13</sup>

	labial	alveolar	lateral	palatal	velar	uvular	glottal
stop	p	t			k		
voiced ejective	b				g		
affricate ejective				č			
fricative							h
resonant glottalized	m	n					
glide			r				

	front	central	back
high	i		u
mid	e(?)	ə(?)	o
low		a	

This partial phonological inventory is remarkable in several ways, at least with regards to the hypothesis that it might belong to a language of northwestern Oregon. A phonemically distinctive /o/ is unusual, since as is often the case in NW coast languages, the realization of [o] is actually a phonemic /u/ which is articulated as a lower vowel in the context of a post-velar consonant. Second, labials /p, b, m/ are absent in some of the coastal Oregon languages (e.g. Tillamook), but

<sup>13</sup>The status of ‘e’ in the Fletcher/Madox orthography is unclear, and could represent either a schwa or a full vowel, hence the question marks.

present in our target language. Voiced stops /b, g/ are likewise rare among these languages, but present in the target language, and the presence of /r/ in our inventory is also unexpected, though /r/ is found in some of the Athabaskan languages of southwestern Oregon. It is plausible that what Fletcher heard as *b* and *g* were in fact /p/ and /k, q/, or possibly some glottalized variant thereof. Pre-nasalization or an intervocalic environment might have given a voiced quality to these consonants, for example. The point is that the Fletcher/Madox orthography may not be phonemically accurate, an assumption which must also be made by proponents of the Coast Miwok hypothesis.

I suggest that it is possible that the letters and letter-sequences used by Fletcher and Madox for the seven-item list may represent more than one possible phoneme, as shown in Table 4 below. The differences between the two columns imply misperceptions in the following contrastive qualities: voicing (e.g. ‘b’ for /p/), glottalization (e.g. ‘p’ for /p̚/), place of articulation (e.g. ‘ch’ for /c/; or ‘h’ for /x/), rhoticity (e.g. ‘r’ for /l/, etc.), or affrication (e.g. ‘ch’ for /ʃ/). These misperceptions could have easily arisen because many of the sounds in Oregon Coast languages are not found in English, and some of those phonemes which *are* found in English nevertheless differ in their finer points of articulation. By way of example, voiceless stops contrast with a separate set of voiceless *aspirated* stops in Coos, and so a member of the unaspirated set (e.g. /p/) would be potentially confusable with a voiced stop (e.g. /b/) to a speaker of a language which did not make a contrast between aspirated and non-aspirated voiceless stops (e.g. English).

**Table 4:** Possible phonemic correspondences of the Fletcher/Madox orthography

Fletcher/Madox orthography	Possible phonemic correspondences	Fletcher/Madox orthography	Possible phonemic correspondences
p	p̚/p̚	h	h/x/χ/-
b	b̚/p̚	gh <sup>14</sup>	—
m	m̚/m̚	i/y	ai/i
t	t̚/t̚	ee	i
n	n̚/n̚	e	ə/ɛ
r	r̚/t̚/d̚/l̚/ɫ̚/ʎ̚/ʎ̚/y̚	u	u
ch	č̚/č̚/ʃ̚/c̚(?) /č̚(?)	o	o/u
k	k̚/k̚/q̚/q̚	a	a/æ
g	g̚/k̚		

<sup>14</sup>Heizer and Elmendorf (1942:217) claim that *gh* in one transcription of the item for *king* is silent, and in view of the following transcription of the Madox’s song *hodeli oh heigh oh*

Table 5 lists some of the most likely misperceptions that might have occurred for an English speaker hearing a completely unfamiliar language with strange sounds. When comparing a sound from the Fletcher/Madox list with a sound from a target language, the greater the difference in the number of qualities (e.g. voicing, glottalization, place of articulation, etc.) between the two segments, the less merit that particular correspondence should be given. It is for this reason that the /p/ in Coast Miwok *hoi'pu* renders the entire form suspect, since there *is no* correspondent in Fletcher's *hióh*.

Note that if we include all of the *possible* phonemic correspondences in Table 4, we have a much-expanded inventory of consonants for the target language, given in Table 5, which also more closely resembles what we actually find in languages of the Northwest Coast sprachbund.

**Table 5:** Target consonants, including possible phonemic correspondences

	labial	alveolar	lateral	palatal	velar	uvular	glottal
stop	p	t			k	q	
voiced	b	d			g		
ejective	p̰	t̰			k̰	q̰	
affricate		c		č			
ejective		c̰		č̰			
fricative			ɬ	š	x	χ	h
voiced					ɣ		
resonant	m	n	l				
glottalized	m̰	n̰	l̰				
glide			r				

To be clear, this is not to say that *all* of the possible misperceptions in Table 4 *must* have occurred, but allowing for each correspondence as a distinctly possible misperception at least renders the set of possible consonant correspondences consistent with the consonant sets usually found in NW-coast languages. Broadening the set of target consonants in the search also allows for possible sound shifts.<sup>15</sup>

*heigh ho hodali oh*, this seems likely. I extend this analysis to possibly include word-final occurrences of *h*, although a perception of *h* is also consistent with fricatives made further up in the vocal tract, e.g. especially /ʃ/, but also /x/.

<sup>15</sup>Attested and historically motivated sound shifts for the languages in the survey are unfortunately not very well understood. Although it has been proposed that Coos, Alsea, and Siuslaw, for example, are part of a larger Penutian family, the exact genetic relation between these languages on the one hand, and between these languages and the rest of the Penutian family, have never been clearly defined. Works in this general area include

Of course, by assuming that *all* of the phonemes in the second column of Table 4 are possibilities, it becomes more difficult to definitively rule out a candidate language by its phonology, since Table 5 is necessarily more inclusive than Table 3. In ranking candidate languages according to likelihood, it makes sense to first look for words whose segments match the default, transparent value of the Fletcher/Madox orthography (Table 3), and only then entertain words whose segments match possible values (Table 5).<sup>16</sup>

Before investigating other languages, it may be instructive to look at word lists collected during other Elizabethan-era expeditions, in order to obtain a more general idea of what kind of transcription conventions were used, and what kind of misperceptions and transcription errors may have been made.

## 6 Other Elizabethan word lists

Setting aside for a moment the semantic discrepancies in the word list of Heizer and Elmendorf (1942) (Table 2), the phonological discrepancies may be due in part to transcription errors/inaccuracies on the part of the individual who recorded the list, because the phonemes of Elizabethan English do not necessarily have direct correspondents in the target language. Since the inventory for each target language will vary, and be either overall more similar or different than Elizabethan English, certain types of transcription errors will surface for languages which have phonological systems very different than English at that time, which will not surface in languages which are more similar.

With this in mind, an objective comparison of the list of possible transcription errors in the Coast-Miwok list with possible transcription errors in a target Oregon language may be improved by seeing what types of transcription errors were made by Elizabethan voyagers in other circumstances. The general idea is that if the types of transcription errors made in this list are closer to the types of transcription errors made in a list of proposed Oregon correspondents than to those made in the Coast Miwok list, that the Oregon hypothesis may thereby receive some indirect support.

This comes with the huge caveat that different transcribers will have different skill-levels and different perceptions, and so using this as a methodological tool

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Buckley (1988), Golla (1997), Grant (1997), Pierce (1966), and Sapir and Swadesh (1953). Since for the most part, the semantic correspondences offered by Oregon languages are *not* close phonological correspondences, looking deeper for systematic sound shifts does not seem warranted for this study. However, allowing for incorrect inductions of meaning, and that phonological correspondences are valid as possibilities, the task would then be to trace the phonological correspondent back to a Drake-era semantic/phonological correspondent by means of a motivated sound shift (and implied semantic shift), although it hardly seems possible to do this with the documentation and data at hand.

<sup>16</sup>I list both types of words/phrases in this report.

assumes that Elizabethan English transcribers shared (i) the same phonemic inventory, and (ii) roughly the same orthographical conventions. There is also the caveat that historical sound shift must be separated from transcription error when comparing the original and modern equivalents for any word. Despite all this, it still seems possible that there could be consistency in the types of errors made across transcribers and across languages, and that this same consistency might surface when comparing transcription accuracies of the Fletcher/Madox list with an Oregon language.

Two cases presented here are (i) a list of mostly Javanese words collected by Francis Drake at a later point during the circumnavigation, and (ii) a word list collected during Martin Frobisher’s 1576 voyage to Baffin Island. Ideally, many more lists should be consulted and a statistical model for errors proposed, but this goes beyond the scope of this paper.

### 6.1 Frobisher’s list

Martin Frobisher’s 1576 expedition to Baffin Island included contact with a group of Inuit, and yielded a list of 17 words, which are indisputably Inuit. The list is reproduced below in Table 6, from (Dorais 1993:37–38).<sup>17</sup>

**Table 6:** Frobisher’s Inuit word list with modern equivalents

	<b>Frobisher</b>	<b>Translation</b>	<b>Modern Inuit</b>	<b>Translation</b>
1	accaskay	boat	ikaussagai	will make them go across
2	arered	eye	eñrit	the eyes
3	argotteyt	a hand	añgatit	your hands
4	atoniagay	foot	atungagik	two footsoles
5	attegay	a coat	atege	inner parka
6	callagay	breeches	qarligik	pants
7	cangnawe	nose	qengaq	nose
8	chewat	ear	ciut/siut	ear
9	coblone	thumb	kublun	your thumb
10	comagaye	leg	kamegik	a pair of boots
11	keiotot	tooth	kigutit	the teeth
12	ketteckle	middle finger	qeteq&eq	middle finger
13	mekellacane	third finger	mikeliqqan	your third finger
14	nutchatet	head	nutchatit	your head hair
15	polleuetagay	knife	pilautagik	two knives
16	teckkere	forefinger	tekeq	forefinger
17	yackettone	little finger	iqetqun	your little finger

<sup>17</sup> As Dorais states, the Baffin Island Inuit of the 16th century is more similar to present day Inupiaq and Western Canadian Inuktuñ.

Dorais notes the following historical sound changes, which should be distinguished from transcription errors: (a) Word-initial /č/ ‘ch’ → /s/ in some dialects (e.g. item 8); and (b) Intervocalic \*/g/ → /w/ → ∅ (item 8).

I now discuss possible consonant misperceptions, or misrepresentations not obviously attributable to sound change, and noted by Dorais. Frobisher sometimes did not transcribe final weak vowels, e.g. item 8 *chewat* instead of \**cigute*. Also the velar fricative /ɣ/ [g] in /kigutit/ ‘the teeth’ does not occur in Frobisher’s transcription ‘keiotot’. Items 4–6, 10, and 15 show that the syllables /-ge/ and /-gik/ were transcribed invariantly as *-gay[e]*. There are the expected uses of ‘c’ (items 6, 7, 13) ‘k’ (item 12) and ‘ck’ (items 12, 17) for /q/, although ‘c’ is also used for /k/ (items 9, 10), as is ‘ck’ (cf. 16). This practice of using ‘k’ for both /k/ and /q/, and related phonemes, would also have occurred if Drake contacted an Oregon group. Finally, the uvular fricative *R* ‘r’ in /qarlagik/ ‘pants’ is missing from Frobisher’s ‘callagay’, which is not very surprising given that it directly precedes /l/, and is not found in English. Overall, the transcription in Frobisher’s list is remarkably accurate.

## 6.2 Drake’s Javanese list

The original word list in Table 7 stems from Hakluyt (1589) vol. iii, and was introduced under the heading “Certaine wordes of the naturall language of Jaua, learned and observed by our men there.” The comparative list is adapted from Mahdi (2007:299). All items are Javanese, unless otherwise noted.<sup>18</sup> It is unclear whether Fletcher transcribed this list as well.

The mistranscriptions on this list are for the most part not surprising, particularly substituting voiceless for voiced consonants (item 21) and voiced for voiceless consonants (item 31),<sup>19</sup> but overall, voicing came across accurately. Of note is item 14, where *ayam* ‘chicken’ is transcribed with an initial *h*. Such a mistake also seems possible for Fletcher’s word *hioh* ‘king’, and may be attributable to the characteristic of some dialects of English to not pronounce an *h* in initial position.

The ‘r’ in Drake’s transcription of item 12 is most likely attributable to the retroflex ‘ɖ’ in the actual Javanese form. Actual *r* in prevocalic position (cf. items 4 and 5) were correctly transcribed. The missing initial ‘m’ in item 20 is unexplained. Likewise the sequence ‘en’ at the beginning of item 23 is not explained, nor the distant correspondence of 29 *Lau* with Malay *tahu*.

One interesting thing that becomes apparent from the Javanese list is that it shows that Drake probably did contact ‘culturally heterogenous’ groups of people, since it contains Javanese, Malay, and Sundanese words. This bolsters the possibility that the group Drake may have contacted in North America consisted

<sup>18</sup>The symbol ɖ indicates a retroflex d, [ɖ].

<sup>19</sup>A similar mistake in transcribing voicing could have occurred if Fletcher’s form *petáh* were meant to represent Chinook *pdoʔ*.

**Table 7:** Drake's Javanese word list with modern equivalents (adapted from Mahdi 2007)

	<b>Drake</b>	<b>Translation</b>	<b>Modern Javanese [or other]</b>	<b>Translation</b>
1	Sabuck	silke	sabuk	waistcloth
2	Sagu	bread of the Countrey	sagu	sago
3	Larnike	drink	-	-
4	Paree	ryce in the huske	paré	rice plant
5	Braas	sodden rice	bras	unhusked rice
6	Calapa	cocos	klâpâ	coconut
7	Cricke	a dagger	kris	creese
8	Catcha	a looking glass	kâcâ	mirror
9	Arbo	an oxe	kebo	water buffalo
10	Vados	a goate	wedus	goat, sheep
11	Cabo	golde	-	-
12	Gardange	a plantain	gedang	banana
13	Totopps	one of their caps	tutup	cover (?)
14	Hiam	a henne	ayam	chicken
15	Sevit	linnen cloth	-	-
16	Doduck	blew cloth	ḍodok ḍuduk	sit, squat (?) place (?)
17	Gula	black sugar	Gula	[brown] sugar
18	Tadon	a woman	Wadon	woman
19	Bebeck	a ducke	bèbèk	duck
20	Anjange	a deere	menjangan	deer
21	Popran	oyntment	bo-borèh	ointment
22	Coar	the head	-	-
23	Endam	raine	udan	rain
24	Jonge	a shippe	jung	ship, junk
25	Chay	the sea	cai [Sundanese]	water (?)
26	Sapelo	ten in number	sepuluh	ten
27	Dopolo	twentie	dua puluh [Malay]	twenty
28	Treda	no	tidak [Malay]	no, not
29	Lau	understand you	tahu [Malay]	know
30	Bayer	goe	biar [Malay]	let it be
31	Adadizano	I will fetch it	ada di sana [Malay]	it's there
32	Suda	ynough	sudah [Malay]	it's done

of members from different language speaking communities.

Before moving onto the data, I first discuss some methodological issues.

## 7 Methodology

First, I examine the phonological inventory of each language (if possible), and compare each language's inventory against possible phonemic equivalents of the Fletcher/Madox orthography (Table 5). In principle, a language could be definitively ruled out by this method. In actuality, however, because the Fletcher/Madox list is so small and the possible ways in which a sound may be misperceived so large, a better indicator that a language is an unlikely candidate comes from it simply having few plausible matches. This is the second method, to which I now turn.

The second method I employ in this survey is to comb existing texts, vocabulary lists, and published grammars for lexical items which appear to 'match' the items on the Fletcher/Madox word list. The most obvious way of doing this is to search for items which match the English translations given in the word list above (i.e. 'semantic matches'). There are known problems with this approach however, since regarding items 6 and 7 for example, Heizer and Elmendorf (1942:216) themselves state that "it is probable that 'sit down' and 'tuch me not' represent incorrect inductions of meaning from situations in which Madox heard these phrases used."<sup>20</sup> It is also possible that these same incorrect inductions of meaning apply to the other items on the list as well. I therefore also employ the less obvious, and more tedious approach, of combing these resources for phonological matches', which may or may not be semantically related to the English glosses given in the Fletcher/Madox word list. So for instance, for item 7 *nocharo mu*, I scan for the following four sequences  $n(V)\check{c}$ ,  $\check{c}(V)r$ ,  $r(V)m$ , and  $r(V)(?)$ .<sup>21</sup> But I also scan for every possible permutation of those four sequences (cf. Table 5): so for instance with the initial sequence  $n(V)\check{c}$ , I also look for  $n(V)\check{c}$ ,  $n(V)\check{s}$ ,  $n(V)c$ ,  $n(V)\check{c}$ ,  $\check{n}(V)\check{c}$ ,  $\check{n}(V)\check{s}$ ,  $\check{n}(V)c$ , and  $\check{n}(V)\check{c}$ . Needless to say, this methodology complicates the search, but helps to address the issues presented in the previous section.

For possible semantic matches, I simply include the form next to the corresponding entry from the Fletcher/Madox list. For possible phonological matches, I break the form roughly into syllables, showing how the form corresponds syllabically with the Fletcher/Madox entry. It is very rare that a candidate form has the same number of syllables as a Fletcher/Madox entry, though this is not in-and-of-itself detrimental to possible cognacy, since (to throw yet another variable into the works) it is perfectly possible that Drake's crew only recalled (and

<sup>20</sup>It is important to remember that Madox never actually heard these words spoken in their original context, only second-hand from some person or persons who did.

<sup>21</sup>So far as I know, there is no evidence for a word boundary in *nocharo mu*, and so I assume that the entire form could in fact be one word, i.e. *nocharomu*.

Fletcher/Madox only recorded) a part of a linguistic utterance, or conversely, that a candidate form corresponds to only a portion of a Fletcher/Madox form. Thus, one sometimes finds whole phonological strings before reaching the beginning of the actual Fletcher/Madox cognate. For this reason, I include a blank column both before and after the syllabified Fletcher/Madox form to accommodate extraneous material from the candidate language.

Also, I do not strictly observe syllabification of the candidate forms, since sometimes, the beginning of one syllable and the end of the following syllable appear to correspond to the beginning and end of the *same* syllable in the Fletcher/Madox form. This obviously decreases the probability that the two forms stand in any kind of real correspondence, but I nevertheless include these for the sake of completeness. I group morphologically-related, and hence semantically-related, entries together: a horizontal line in the chart indicates the beginning of a set of correspondences which are (possibly) morphologically/semantically unrelated to the preceding set. There is a tendency towards the end of the longer lists for a line break to follow each entry, since there were often miscellaneous, semantically-isolate entries.

Finally, data lists for some of the surveyed languages (i.e. Penutian languages) are clearly more extensive than for other languages (i.e. Salishan and Athabaskan). This discrepancy may be due to the availability of reference materials for a language, but may also be due to the absence of possible correspondences in that language, which is in turn due to phonological or phonotactic factors, which should be taken as evidence that a particular candidate language is unlikely to be the group that Drake contacted. If phonologically similar forms for a particular Fletcher/Madox entry are not forthcoming in a given candidate language, I do not list the Fletcher/Madox forms. I should also make it clear that there are sure to be reference materials which were not consulted during the course of this survey. As such, this survey must be viewed as incomplete.

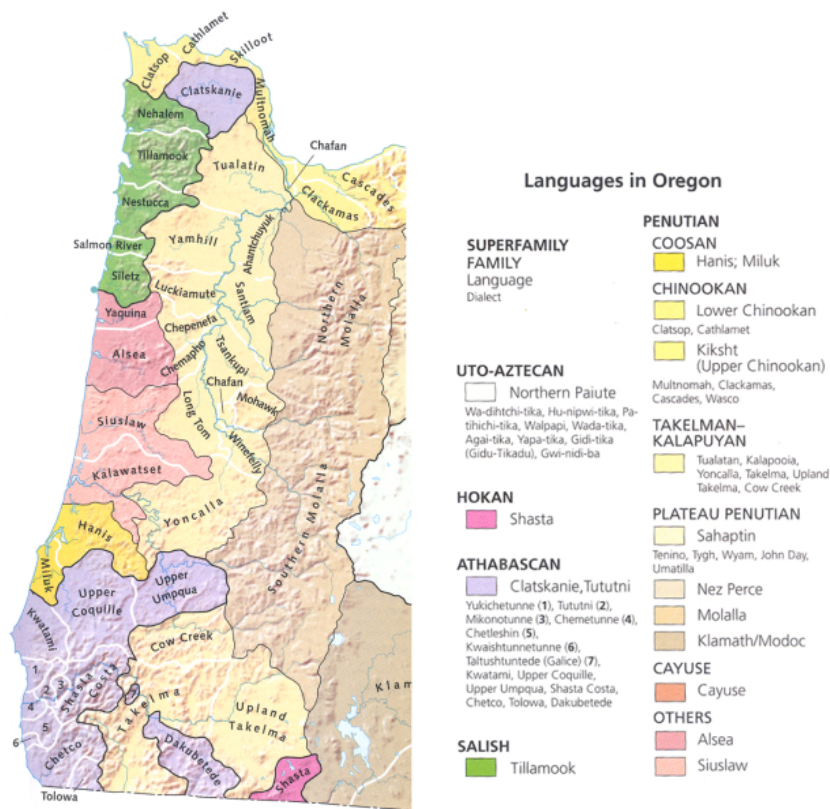
Because the status of the Fletcher/Madox transcriptions and the real-world situations/objects they were meant to describe are under-determined, it is unclear whether (i) a candidate word which is semantically closer to the Fletcher/Madox English gloss, yet whose phonemes deviate in one or more ways from the Fletcher and Madox default (compare Table 3 to Table 5); or (ii) a word which is semantically very distant or unrelated<sup>22</sup> to a Fletcher/Madox English gloss, yet whose segments correspond closely to the Fletcher/Madox default, should be considered a *more likely* correspondence. What is clear is that the strongest evidence for cognacy must come from (1) a language whose phonological inventory is compatible with the sounds represented on the Fletcher/Madox word list, either syn-

<sup>22</sup> Although the results of this combing process are *semantically compatible* with situations in which the English glosses given in the Fletcher/Madox word list might have been used, this reduces to near-speculation because the strength of cognacy must always be tempered by the ever-present possibility that Fletcher ‘induced meaning incorrectly.’

chronically, or diachronically as the result of an attested or probable sound shift, and (2) items within a phonologically compatible language which are semantically compatible, but not necessarily identical to, Fletcher and Madox’s English glosses, since we must also allow for a ‘reasonable amount’ of incorrect meaning induction.

## 8 Survey languages

The candidate languages in this study center around Whale Cove, Oregon, which DARC considers a possible landing site. The approximate location of Whale cove is indicated by a small blue dot that is one third of the way down the Oregon coast on the map in Figure 1 below.



**Figure 1:** Languages of Western Oregon (reproduced from Loy et al. 2001)

This survey also includes data from languages farther afield to the North (e.g. Kwalhioqua and Clatskanie) as well to the South (e.g. Coos (Penutian), and Oregon Athapaskan languages). At the end of the 19th century, the Whale Cove area roughly delimited the traditional areas occupied by the Salish-speaking Tillamook-Siletz on the North and the linguistically unrelated Alsean dialects to the South.

If Drake landed at Whale Cove, the null hypothesis is that the items on the Fletcher/Madox word list belong to either the Tillamook or Alsea languages, or perhaps both.<sup>23</sup> If Whale Cove was Drake's landing site, but ancestors of the Tillamook-Siletz or Alsea-Yaquina were not the contact group, then it is still possible that Drake contacted a group which was later displaced, either to the north, or perhaps more likely to the east or south.<sup>24</sup> Therefore, once the languages in the immediate vicinity of Whale Cove are investigated, the languages in the surrounding area should also be, and this is the general course I follow.

The following sections include relevant data surveyed from specific languages. The languages are organized by language family. The three families I survey are Salishan (Tillamook-Siletz), 'Penutian' (Alsea-Yaquina, Siuslaw-Lower Umpqua, Coos (Hanis-Milluk), Takelma-Kalapuyan, and Molalla), and Athabaskan (Clatskanie-Kwalhioqua, Upper Umpqua, various dialects of Tututni, Chetco-Tolowa). Afterwards, I briefly discuss possible trade-jargon connections.

For each language, where possible, I first introduce the phonemic inventory of each language, noting important correspondences and deviances from Table 3 and Table 5. Then, I present lexical items/phrases which most closely correspond to the translations offered by Fletcher/Madox (i.e. 'semantically-similar forms'). Finally, I present lexical items/phrases which most closely correspond phonologically to the items on the Fletcher/Madox list (i.e. 'phonologically-similar forms').

<sup>23</sup>The null hypothesis overlooks the realistic possibility that population movement or displacement occurred somewhere within the 300 years separating Drake's voyage with the beginning of the period of intensive linguistic work, as well as the obvious possibility that Drake did not anchor in Whale Cove. Both of these points are good reasons to expand the geographic area of languages surveyed.

<sup>24</sup>There is some evidence that a southward movement of coastal peoples occurred in relatively recent times. This almost certainly occurred with the Tillamook peoples, since the ancestor homeland of Salish people is further northward, in the Fraser River valley (Czaykowska-Higgins and Kinkade 1998:58). The main migration of the Tillamook probably occurred before Drake's voyage, since anthropological and archaeological research suggest that they settled in the area ranging from Cape Lookout to Cape Meares during the 15th century. The Whale Cove and Siletz Bay areas may have been Alsea at the time of Drake's voyage, however. Frachtenberg's Alsea text notebooks (texts vol. 4, 1st page, cf. SWORP collection) include a note from "Tom" (Tom Jackson?): "Tom says the Siletz spoke both Alsea and Tillamook. He thinks that originally they spoke Alsea only. He says: Alsea is pure, when it comes to Yaquina one finds a mixture of slight degree, Siletz finally has two (Alsea & Tillamook) languages. The old people said: on three rivers the same language was spoken: on Alsea, Yaquina and Siletz." Thanks to Henry Zenk for noting this.

I discuss noteworthy, relatively close correspondences for each language surveyed, and again in the conclusion.

9 Salishan

9.1 Tillamook-Siletz

Tillamook-Siletz is the southernmost Salish language. The southernmost dialect of Tillamook, Siletz, was formerly spoken in the coastal area immediately to the north of Whale Cove.

The consonant and vowel systems are given in the following charts which are adapted from Thompson (1966:314).

Table 8: Tillamook consonants and vowels

	labial	alveolar	lateral	palatal	velar	uvular	glottal
stop		t			k    k <sup>w</sup>	q    q <sup>w</sup>	ʔ
ejective		tʼ			kʼ    kʷʼ	qʼ    qʷʼ	
affricate		c		č			
ejective		cʼ	čʼ	čʼ			
fricative		s	ʃ	š	x    x <sup>w</sup>	χ    χ <sup>w</sup>	h
resonant		n	l				
glottalized		(nʼ)?	(lʼ)?				
glide	w			y			

	front	central
high	i	ə
mid	e	
low		a

There are several points worth mentioning here. First, Tillamook has no labial consonants, other than /w/ (except in loan-words), and also lacks back vowels (Thompson 1966). Edel (1939:6) discusses two historical changes: (i) the semi-vowel /w/ has been substituted for the labial /m/, and (ii) the glottal fricative /h/ has been substituted for /p/. This second sound shift is somewhat unexpected, since /h/ shares neither the place nor manner of articulation of /p/. Assuming that the Fletcher/Madox transcriptions were at least roughly accurate, and that the contacted group was Tillamook, we could only assume that these sound-shifts post-dated Drake’s hypothetical contact with this group, since otherwise, *petáh* should have been *hetáh*, for example. No such form can be found for Tillamook, however, as implied by the data charts below.

The absence of voiced stops (i.e. /b/, /d/, /g/, etc.) in the language is not unexpected, given that few other Salish languages, with the exception of Lushootseed and Coeur d'Alene, have these consonants. *gnaáh* and *tobáh* may reasonably be ruled out as possibilities since they both contain voiced stops, however a misperception or mistranscription on the part of Fletcher could have resulted in a /g/ and /b/ being transcribed, rather than a non-aspirated /k/ and /p/, especially since “the plain obstruents . . . are regularly partially voiced in position directly before vowels” (Thompson 1966). As stated before, however, even /p/ is not a possible phoneme in Tillamook, at least synchronically.<sup>25</sup> Also, there is no /r/ in the language, which might seem to disqualify any correspondence to *huchee kecharoh* and *nocharo mu*, although it must be said that the Coast Miwok correspondences also do not have /r/, but /t/ (or ‘D’), which is reasonable, assuming that the /r/ were flapped, as in a fast pronunciation of /t/ in English *Saturday*.<sup>26</sup>

As can clearly be seen in Table 9 below, the closest semantic correspondences I have been able to find for Tillamook do not at all phonologically resemble the Fletcher/Madox items, with the possible exception of *caplíl* ‘bread’, a Chinuk Wawa word (Chinook Wawa Dictionary Project 2012:201). See Section 11 for further discussion of Chinuk Wawa forms.

Table 10 presents phonologically similar forms for Tillamook-Siletz. Phonological correspondences are sparse for Tillamook, there only being notable examples for two of the seven items on the Fletcher/Madox list. Single syllable items like (1) and (5) above are really not long enough to suggest any kind of real correspondence, except in conjunction with other compatible morphemes, which is the main reason I include them in this report. There is no single morpheme *hu* (though one could propose that it might be a kind of interjection), and so it is difficult to see how (1) could correspond to ‘chee’ in ‘huchee kecharoh’, especially since the deictic semantics of ‘that’ do not seem to be a component to the meaning of ‘sit down’. Item (2) offers a more promising correspondence, except that rather than the second syllable beginning with /č/, it begins with /c/ ‘ts’. The meaning ‘too much’ implies that Madox’s translation ‘sit down’ is an incorrect induction of meaning, unless perhaps ‘kecharoh’ carries the weight of the meaning. In any case, the closest correspondence to ‘kecharoh’ is item (4), which not only is unrelated to ‘sitting down’, but the final two syllables *séwi* do not correspond well at

<sup>25</sup>If *tobáh* and *petáh* are borrowings from English, as Heizer (1947) suspects, then these problems are immediately overcome, since they pattern with other known borrowings in the Tillamook language, for example Chinook Jargon *caplíl* ‘bread’ (Thompson 1966:4) which also contains a non-native /p/.

<sup>26</sup>If the /t/ in Coast Miwok were flapped (i.e. as with the ‘t’ in English “Saturday”, in fast speech, where the tongue does not articulate a prototypical ‘t’, but instead ‘glides’ past the alveolar ridge on its way backwards), it is understandable that an Englishman might mistranscribe /t/ for /r/. This is under the assumption that a flapped consonant would be perceived by an Elizabethan speaker as ‘r’, or that there were a spelling convention that represented /t/, when flapped, as ‘r’.

**Table 9:** Tillamook-Siletz: Semantically-similar forms

	Fletcher/Madox	Translation	Tillamook	Translation	Citation
1	hióh	a king	šéc=ʔenu	chief, big rich	(Thompson 1989)
2	tobáh	an herb	hut-	to smoke	(Thompson 1989:55)
3	gnaáh	entreat to sing	ʔcisleš səkʷʔn	sing song	(Thompson 1989:2) (Thompson 1966)
4	petáh	root...	dəyʔcəqʷə	root used for food	(Thompson 1989:33)
5	cheepe	bread	caplíl/saplíl	bread (Chinook Jargon)	(Thompson 1989:4)
6	huchee kecharoh	sit down	ʔéqil	sit down	(Thompson 1989:66)
7	nocharo mu	touch me not	qe(ʔ)s	no, not	(Thompson 1989:21)

**Table 10:** Tillamook-Siletz: Phonologically-similar forms

	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
1		či				that	(Thompson 1989:22)
2	hú	ciʔ				too much	(Thompson 1989:55)
3	hów	csnə	kʷu	čə	səwí	good	(Thompson 1966)
4						I'm going ashore	(Thompson 1966)

	no	cha	ro	mu	<i>touch me not</i>	Citation
5	nəʔ				locative, get, wait, surface	(Thompson 1989:76)

all to the Madox form.

Given the available evidence, Tillamook seems to be an unlikely candidate for the language encountered by Drake and his crew.

10 Penutian

10.1 Alsea/Yaquina

Alsea proper, and a close dialect Yaquina, were spoken in the area immediately south of Whale Cove. It is completely unrelated to Tillamook, and has traditionally been classified as a Penutian language.

Alsea-Yaquina is phonologically different from Tillamook in having labial consonants. Buckley (1988:14) cites Frachtenberg as noting that voiced stops are allophonic variations of voiceless stops, occurring intervocalically and before /l/. These two factors make possible a more direct correspondence between Alsea and Fletcher/Madox entries like *tobah*, *petah*, *gnaah*, and *nocharo mu*. Theoretically then, assuming that the phonotactics of the language cooperate, Alsea should yield a relatively greater number of phonologically-similar correspondences than Tillamook, and this seems to be the case. The following charts are adapted from Buckley (1988:28), and represent the Alsea/Yaquina sound system:

Table 11: Alsea consonants and vowels

	labial	alveolar	lateral	palatal	velar	uvular	glottal
stop	p	t		k̲	k    k <sup>w</sup>	q    q <sup>w</sup>	ʔ
ejective	p'	t'		k̲'	k'    k' <sup>w</sup>	q'    q' <sup>w</sup>	
affricate		c					
ejective		c'	χ				
fricative		s	ʃ	š	x    x <sup>w</sup>	χ    χ <sup>w</sup>	h
resonant	m	n	l				
glottalized	m'	n'	l'				
glide	w			y			
glottalized	w'			y'			

short	long	short nasal	long nasal
i    u	i'    u'	ĩ    ʊ	ĩ'    ʊ'
a	a'	ã	ã'

The semantic correspondences from Alsea are for the most part non-starters (see Table 13 below). The closest one comes to a phonological correspondence in the above chart is the word for ‘bread’, where the initial syllable ‘tsi’ (/ci/) might

be taken to correspond to ‘chee’ (/či/) in ‘cheepe’. The absence of any sort of /p/ in the Alsea form seems to negate any real possible correspondence here, however, and ‘L’ (/ʁ/) and ‘p’ (/p/) are not very similar.

Table 14 includes a somewhat lengthy listing of phonological correspondences for Alsea-Yaquina, and some discussion of noteworthy items. There are several interesting, close phonological correspondences to *hióh* ‘king’, but nothing with the meaning of ‘king’. One could imagine that one might utter (1) ‘friend’ in a first-contact situation, but this is pure speculation on par with Heizer’s (1947) form *oiya* ‘friend’. It must be said that the Alsea form is closer in sound to Fletcher’s *hióh* than the Coast Miwok form.

Single syllabic (6) is not much of a correspondence, but compare (7) *qa’nhān* to the 1st singular pronoun in neighboring Siuslaw, *qnà*, and one arrives at a reasonable correspondence, allowing for the realistic possibility that a voiced stop ‘g’ was written rather than ‘k’ or ‘q’ because of the following nasal /n/. Why an isolated first person pronoun would be uttered in the context of ‘entreating to sing’ is unclear, however. The prefix for ‘to dance’ *kūyad* is interesting since it at least superficially resembles part of the Coast Miwok word for ‘sing’, *koya*, and both languages were traditionally considered to belong to the Penutian family.

Alsea-Yaquina, and Siuslaw and Coos as will be seen, all show many possible phonological correspondences to *huchee kecharoh*. Lines (9–19) above show that it is not uncommon for a fricative consonant compatible with [htbp], e.g. /x/ or /-/, to begin a word/phrase in Alsea, and for the following vowel to be /u/. Additionally (9–19) show that it is not uncommon for the second syllable to be an affricate followed by a high vowel /i/, although for Alsea, the affricate is alveolar ‘ts’ (/c/) rather than palatal ‘ch’ or ‘tc’ (/č/), and the longer forms (18–19) are less than convincing. Lines (32–37) show a possible correspondence to ‘chee’ in the verb formative *tsī*. Although a verb for ‘sit down’ is missing here, ‘to be in a horizontal position, rest’ (36–37) is semantically close. The word for chair in (30) could be construed as related to ‘sitting down’, however the phonological correspondence is not particularly close. The 3rd person pronoun *qo’tsE* in (38–42) could correspond to ‘kecha’ in ‘kecharoh’, although use of the 3rd person, rather than the 2nd person, is unexpected if indeed Madox’s gloss of the phrase as an imperative is correct. Lines (26–29) offer alternative correspondences to ‘kecharoh’, although the final syllable containing [o] is only represented in (20–21) and (31), which are otherwise not particularly close correspondences. One could of course entertain various combinations of (9–17) with (22–30) or (37–43), however it is unclear which of these combinations would be grammatically viable, and of those that are, these must in any case remain speculations.

Lines (44–47), in combination, seem to suggest temporal deictic reference to a river, which could plausibly be stretched to encompass Madox’s translation ‘on the other side’ (of the river), but this too is highly speculative, and is in any case completely unrelated to the other meaning of *nocharo mu*, ‘don’t touch me’.

**Table 13:** Alsea-Yaquina: Semantically-similar forms

Fletcher/Madox	Translation	Alsea-Yaquina	Translation	Citation
1 hióh	a king	mɛʔanaˈsɪyũ, k'ɛuˈts!	chief, leader	(Frachtenberg 1917:257,290)
2 tobáh	an herb	k'ĩ ũˈsa	tobacco	(Frachtenberg 1917:303)
3 gnaáh	entreat to sing	tsilˈ-, k'ĩl- tsilaˈha, tsilhaˈ, k'ilhiˈ tsilhaiˈ mɛtsilhaˈt'	to sing song (began to) sing singer	(Frachtenberg 1917:265,300) (Frachtenberg 1917:265,301) (Frachtenberg 1917:72) (Frachtenberg 1917:300)
4 petáh	root. . .	Lĩˈqayũ waũˈst:aũs pu laˈũk tɛˈaˈ-ĩk tqˈaɪˈnˈ cǎ tˈqinˈ cǎ nũˈnsumxt sǎˈptxus	roots roots (dug up) acorn meal any kind of meal mush of pounded roots (name of roots unknown) food hole (dig holes, collective)	(Frachtenberg 1917:299) (Frachtenberg 1917:299) (SWORP 4:2) (SWORP 4:2)  (SWORP 4:2) (Frachtenberg 1917:293) (Frachtenberg 1917:256)
5 cheepe	bread	tsisɪˈnˈLi <sup>27</sup>	bread	(Frachtenberg 1917:265)
6 huchee kecharoh	sit down	pil-, piltku- qxeˈnk's	to sit downward	(Frachtenberg 1917:300) (Frachtenberg 1917:291)
7 nocharo mu	touch me not	yaq-, ˈkː!-, pkː-, pkː!- xːrims-, ʔtsimx- iːLiyaˈ, waˈ, waˈnaˈ	to touch to touch no, not	(Frachtenberg 1917:303) (Frachtenberg 1917:303) (Frachtenberg 1917:297)

<sup>27</sup> The morpheme -Lĩ means ‘the one that. . .’.

Table 14: Alsea-Yaquina: Phonologically-similar forms

	hi	óh		a king	Citation
*1 <sup>28</sup>	hī	ya <sup>ɛ</sup>		cousin, friend	(Frachtenberg 1917:252,293)
2	hī <sup>ɛ</sup>	ye <sup>ʔ</sup>	sa	friend	(Frachtenberg 1917:252,293)
3	hī	w-		to whisper	(Frachtenberg 1917:252)
4	hy	uw		to whisper (prefix)	(Frachtenberg 1917:252)
5	hai	ya <sup>ʔ</sup>		spotted salmon	(SWORP 4:9) <sup>29</sup>

	g	naáh		entreat to sing	Citation
6	kʰ	a <sup>ʔ</sup> -		to permit	(Frachtenberg 1917:298)
7	qa <sup>ʔ</sup>	nhan		I (1st person sg.)	(Frachtenberg 1917:274)
8	kū	yad-		to dance (sing.)	(Frachtenberg 1917:270)

	hu	chee	ke	cha	roh		sit down	Citation
9		hā <sup>aʔ</sup>					in vain, vainly	(Frachtenberg 1917:252)
10		hū					interjection	(Frachtenberg 1917:253)
11		hū					to score, to tally (prefix)	(Frachtenberg 1917:253)

(continued on next page...)

<sup>28</sup>The ‘\*’ symbol indicates an unusually close correspondence. These are reviewed again in the conclusion.

<sup>29</sup>All SWORP materials are from the National Anthropological Archives collection (i.e. ‘series 1’), originally housed at the Smithsonian Institution. The first number indicates the box, and the second number the folder. The key to the SWORP reference can be found using the following website: <http://nwda-db.wsulibs.wsu.edu/findaid/ark:/80444/xv14723>.

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	hu	chee	ke	cha	roh	sit down	Citation
12	hū	<sup>n</sup> ts				close here	(Frachtenberg 1917:253)
13	xū	ts-				as soon as (particle)	(Frachtenberg 1917:278)
14	xū	tsā́				on my part, on his part (particle), a reason(?)	(Frachtenberg 1917:278,100)
15	xū́	sī				a little	(Frachtenberg 1917:74,295)
16	hū	<sup>n</sup> ki				here	(Frachtenberg 1917:253)
17	hū	<sup>ɛ</sup> tsk				maybe, perhaps	(Frachtenberg 1917:253)
18	ku	ts-hī́	ya	k'a	ux	when their cousin said	(Frachtenberg 1917:66)
19	ū	sti	taí	ti	staux	follow them two	(Frachtenberg 1917:68)
20	xa	ts!ō	waí	ḡi-	slō	thou shalt watch	(Frachtenberg 1917:30)
21	hak	qal	xa <sup>ɛ</sup>	yaí	slō	hiding place	(Frachtenberg 1917:68)
22			k'a			to stop, complete, finish	(Frachtenberg 1917:270)
23			k'á			to allow, to permit	(Frachtenberg 1917:270)
24			qa <sup>ɛ</sup>			particle denoting uncertainty	(Frachtenberg 1917:273)
25			qaa			to enter (prefix)	(Frachtenberg 1917:273)
26			k!ē	ts		east, ashore, inland	(Frachtenberg 1917:273)
27			k'(ā)	ts!		to have on, to put on, to wear	(Frachtenberg 1917:273)
28			k'ā́	ts!i	sau	?sticking in the soles of his feet?	(Frachtenberg 1917:98)
29			k'E	ts		customarily, usually, repeatedly	(Frachtenberg 1917:44,270)
30			ka'a	tkE	ta	chair	(Frachtenberg 1917:269)
31				tsā́	lōs	snipe	(Frachtenberg 1917:265)

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	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
32		tsī	qu-			to laugh, deride	(Frachtenberg 1917:266)
33		tsī	xut			to push	(Frachtenberg 1917:266)
34		tsī <sup>n</sup>	k'e			roof, ceiling	(Frachtenberg 1917:266)
35		tsi	ku-			to hear, listen, understand	(Frachtenberg 1917:267)
36		tsī	k			be in a horizontal position	(Frachtenberg 1917:267)
37		ts	kī!			resting place, bed, lair	(Frachtenberg 1917:267)
38			qa'	tsE		he, she, it	(Frachtenberg 1917:274)
39			qa'	tsi	Lx	they	(Frachtenberg 1917:274)
40		a	qa'	tsE		he, she, it	(Frachtenberg 1917:274)
41			qo'	tsE		he, she, it	(Frachtenberg 1917:276)
42	qo'	tsE	qau'	wai	sī	he will habitually be first	(Frachtenberg 1917:74)
43			qā'a'	tsE		a long time, awhile	(Frachtenberg 1917:275)

	no	cha	ro	mu		<i>touch me not</i>	Citation
44		nā't	u			small river, creek	(Frachtenberg 1917:276)
45		nā't	Lō			Big River, Siletz River	(Frachtenberg 1917:276)
46				mū	hū'	now	(Buckley 1988:25)
47				m=u <sup>n</sup>	hū	now, then, finally, at last	(Frachtenberg 1917:76,258)

## 10.2 Siuslaw-Lower Umpqua

Siuslaw-Lower Umpqua was spoken along the coast to the south of Alsea-Yaquina. The following phoneme charts are adapted from Hymes (1966):

There was some debate as to whether or not Siuslaw had voiced stops. Frachtenberg (1922b) lists /b/ and /d/, but Hymes (1966:330) does not. Sapir and Swadesh (1953) record two instances of /b/, but Frachtenberg and Hymes record these cases as /p/. The apparent alternations occur in a pre-vocalic environment. Also, initial consonants in English loans like *Billy* and *Boat* are devoiced, i.e. *píli* and *púut*. The only confirmed occurrence of /d/ occurs between two voiced sounds (the other occurrences have been recorded as /t/ by Hymes and Swadesh). Hymes concludes that [b] and [d] are non-contrastive alternations of /p/ and /t/ in Siuslaw, and that Siuslaw has no voiced stops.

Hymes (1966:335) also concludes that there is no contrastive series of aspirated consonants, but that these are rather sequences of stop plus /h/. Hymes (1966:335, fn 20), cites Frachtenberg as distinguishing between ‘glottalized stops of ordinary strength’, primarily with /t/ and /k/ where he transcribes ‘ordinary’ glottalization with an apostrophe, versus ‘real explosives’, transcribed with ‘!’. Hymes states that although ordinary glottalized consonants are non-contrastive with non-glottalized consonants, “on grounds of observed phonological distribution... the edge is for interpretation of C’ as a special series” Hymes (1966:337). On page 338, Hymes and Swadesh agree that /k/ and /q/ seem to be in complementary distribution, and that there is no evidence for a separate labialized consonant series (i.e. *k(’)<sup>w</sup>* or *q(’)<sup>w</sup>*). Finally, Hymes (1966:342) concludes that vowel length is contrastive in the language, and that /w/ and /y/, intervocalically, are non-distinctive.

Similar to the case of Alsea, the straight semantic correspondences I was able to find for Siuslaw are largely non-starters, but are listed in Table 15.

Table 16 represents phonologically-similar forms for Siuslaw-Lower Umpqua. The Alsea form meaning ‘friend’ seems more likely to be used in a first-contact situation than either of the forms given as (1) or (2). While (2) *hau* ‘yes’ could plausibly have been heard in such a situation, the /a/ vowel is not a close correspondent to the ‘i’ in *hióh*, though if ‘i’ represented /ai/ as in the English 1st person pronoun *I*, the correspondence would become marginally more plausible.

As mentioned in the previous section’s discussion on the corresponding Alsea forms, the 1st person pronouns in (4–8) are close phonological matches to *gnaáh* ‘entreat to sing’, though not semantically very close.

Lines (12–53), roughly speaking, offer correspondences for *huchee*, and (54–73) for *kecharoh*, though more specifically just for *kecha*, while (74–78) possible correspondences for the final syllable *roh*. From within the first set, the forms in (17–19) related to ‘everywhere’, and the forms in (32–37) related to ‘playing’ offer the closest correspondences because of their relatively closer vowel correspondences. The other sets in (12–53) diverge more markedly. From within the

**Table 15:** Siuslaw-Lower Umpqua: Semantically-similar forms

Fletcher/Madox	Translation	Siuslaw-Lower Umpqua	Translation	Citation
1	hióh a king	m <sup>a</sup> ā tī ma'atī t <sup>a</sup> na <sup>?</sup> təna'wa	chief, leader chief, canoe steersman chief chief, rich man	(Frachtenberg 1914:130) (Whereat 2001b) (Frachtenberg 1914:130) (Whereat 2001b)
2	tobâh an herb	chiyuusan, ch'iyusIn	tobacco	(Whereat 2001b), [Phillips, p.c.]
3	gnaâh entreat to sing	anxī- a'naɣhîn a'naɣya ant <sup>E</sup> s <sup>E</sup> ã <sup>e</sup>	sing I am singing [form related to 'singing']	(Frachtenberg 1914:137) (SWORP 6:1) (SWORP 6:1)
4	petáh root...	iqwa <sup>n</sup> tEm q̄wimts q̄wimlts 'auchisi kwátom	root potatoes wapato camas roots (general)	(Frachtenberg 1914:136) (Frachtenberg 1914:136) [Phillips, p.c.] [Phillips, p.c.] [Phillips, p.c.]
5	cheepe bread	q'alax (borrowed from Hanis)	white clay, flour and wheat bread	[Phillips, p.c.]
6	huchee kecharoh sit down	ta-, ti- ta'- ants t'í t'lyün qa'xan-	to sit to sit, to live that on which he was sitting down	(Frachtenberg 1914:137) (Frachtenberg 1922b:523) (Frachtenberg 1914:523) (Frachtenberg 1914:130)
7	nocharo mu touch me not	kū, kum'ntc kū'ts	no no!ʒ0]	(Frachtenberg 1914:135) (Frachtenberg 1922b:492)

<sup>30</sup> The morpheme *a'ts-* indicates 'imperative'.

**Table 16:** Siuslaw-Lower Umpqua: Phonologically-similar forms

	hi	óh	<i>a king</i>		Citation
1	hi'	ai		cloud	(SWORP 1:13)
2	ha	u		yes	(SWORP 1:14)

	g	naáh		<i>entreat to sing</i>	Citation
3	k <sup>u</sup>	nà		perhaps (dubitative)	(Frachtenberg 1922b:616)
4	q	nà		I (1st sg.)	(Frachtenberg 1922b:616)
5	L'xū'yūtsanx mîtà	nà		I know thy father	(Frachtenberg 1922b:490)
6	q	nū'		to find	(Frachtenberg 1922b:445)
7	k	na	ha'i'n	I lean against...	(SWORP 6:1)
8	k	na	ha	lean against	(SWORP 6:1)

	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
9			ma <sup>a</sup>	tc		it lay	(Frachtenberg 1922b:453,527)
10			mî	tcū <sup>wi</sup>		many were lying	(Frachtenberg 1922b:453)
11			mE	tea'	wanx	they intended to lie down	(Frachtenberg 1922b:453,527)
12	xā	ts'lū				two	(Frachtenberg 1922b:450)
13	xā	ts'lu <sup>wī</sup>	tīm	tcīL		I have two hands	(SWORP 6:1)
14		tcīL				hands	(Frachtenberg 1922b:502)
15	xa <sup>i</sup>	tc-				to roast (meat)	(Frachtenberg 1922b:453,527)

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	hu	chee	ke	cha	roh		<i>sit down</i>	Citation
16		tc <sup>i'</sup>					he roasts (meat)	(Frachtenberg 1922b:453)
17	k'lē	tc					begin to do s/t in all directions(?)	(Frachtenberg 1922b:520)
18	k'lē'	tc	L'a	ya'tc	L'ō	xa'xa <sup>u</sup> tsmE	to each place he sent his...	(Frachtenberg 1922b:552)
19	k'lē	tc	L'a	ya'tc	waa'	ūn	everywhere he said...	(Frachtenberg 1922b:550)
20	hi	tc					people	(SWORP 1:14)
21	hī	tū'	tc				people (loc.+ nom.case(?))	(Frachtenberg 1922b:522,543)
22	hī	tcū' <sup>u</sup>					people	(Frachtenberg 1922b:537,593)
23	ha	tc'-					to ask	(Frachtenberg 1922b:478,495)
24	ha	tc'ī	xam				he was asked	(Frachtenberg 1922b:443)
25	ha	tc'a'	yūn				he asked him	(Frachtenberg 1922b:446)
26	ha	tc'a'	yū	na	tcī		ye ask her	(Frachtenberg 1922b:446,482)
27	ha	tc'a'	yūt	nE			he is asked	(Frachtenberg 1922b:457)
28	ha	tc'	ḏa	tcī			let me ask you!	(Frachtenberg 1922b:519)
29	Ha	teyi	qhwun				I asking..	(SWORP 1:14)
30	ha	tea'	t				tall, long	(Frachtenberg 1922b:456)
31	hūt	tea'	tūn				I am tall	(SWORP 1:14)
32	hū	tc-					to play	(Frachtenberg 1922b:471)
33	hū	tea'ī'					playing	(Frachtenberg 1922b:511)
34	hū'	tea	wans				we two (incl.) are going to play	(Frachtenberg 1922b:526)
35	hu	tea'	wax				you have fun(?)	(Frachtenberg 1922b:?)

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		hu	chee	ke	cha	roh	sit down	Citation
36		hū	tcū <sup>u</sup>	L'a <sup>ai</sup>			they play	(Frachtenberg 1922b:536)
37	tcī'ktcī	hū	tcū <sup>i</sup>				wherever you play...	(Frachtenberg 1922b:479)
38		ha	tc	t'ū <sup>u</sup>			a long time	(Frachtenberg 1922b:456)
39		hī	ts-				to live	(Frachtenberg 1922b:464)
40		hī	tsī <sup>i</sup>				house	(Frachtenberg 1922b:489)
41		hī	tsī <sup>i</sup>	syā			from the house	(Frachtenberg 1922b:553)
42		hī	tsī <sup>i</sup>	Lī <sup>ū</sup>	tcī <sup>i</sup>	wa	The house is by the river.	(SWORP 6:1)
43		hī	tsā <sup>i</sup>				he put it on	(Frachtenberg 1922b:484)
44		a <sup>i</sup>	tc-				to trade	(Frachtenberg 1922b:503,606)
45	to	hā	tc <sup>i</sup> yā				trader	(SWORP 1:13)
46		a	tsī <sup>i</sup>	tcī	tīn	ha <sup>i</sup>	thus I think	(Frachtenberg 1922b:457)
47		wà	tc				who, somebody	(Frachtenberg 1922b:584)
48		wà	tc <sup>i</sup>	tc			whose	(Frachtenberg 1922b:584)
49		tū	tc				to spear	(Frachtenberg 1922b:445)
50	tu	ha	tca <sup>i</sup>	yūn			he spears it	(Frachtenberg 1922b:445)
51		ya	tcī				2nd pl. suffix	(Frachtenberg 1922b:468,470)
52		x	tcī				2nd pl suffix	(Frachtenberg 1922b:468,470)
53		tsa	tcī				2nd pl. imperative suffix	(Frachtenberg 1922b:501)
54			c	kō <sup>i</sup>	tc		hill, mountain	(Frachtenberg 1922b:554,562)
55			c	kō <sup>i</sup>	tcī	tcax	a mountaineer	(Frachtenberg 1922b:562)
56				qa <sup>i</sup>	tc <sup>F</sup> n-		to go, to start	(Frachtenberg 1922b:471)

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	hu	chee	ke	cha	roh	sit down	Citation
57			qa'	tcnEm		go!	(Frachtenberg 1922b:516)
58			qa'	tc <sup>i</sup>	nt	he goes	(Frachtenberg 1922b:470)
59			qa'	tcnE	mats	you two go!	(Frachtenberg 1922b:517)
60			qa'	tc'n	ta <sup>u</sup> x	they two go	(Frachtenberg 1922b:470)
61			qa'	tc'n	tūx	there they will go	(Frachtenberg 1922b:555)
62			qa	tc <sup>E</sup>	natū <sup>u</sup>	they walked	(Frachtenberg 1922b:550)
63			qa	tcī	nī'	to keep on going	(Frachtenberg 1922b:446)
64			qa'	tc'n	tūnx	thou shalt go	(Frachtenberg 1922b:528)
65		ts	qa'	tc <sup>E</sup>	nīs	don't you two go!	(Frachtenberg 1922b:517)
66			qa	tcū-		to drink	(Frachtenberg 1922b:450)
67			qa	tcū <sup>u</sup> '	tx	he drinks	(Frachtenberg 1922b:513)
68			qa	tcū <sup>i</sup>		to drink	(Frachtenberg 1922b:565)
69			qū ī	teyaa <sup>u</sup>		from the Umpqua river	(Frachtenberg 1922b:553)
70			qū ī	tc		Umpqua river	(Frachtenberg 1922b:553)
71			qa'u'	tc		below, down the stream	(Frachtenberg 1922b:589)
72			qa'a'	tc		tributary of Siuslaw River (North Fork)	(Frachtenberg 1922b:552)
73			qa'a'	tcix		(along) North Fork (?)	(Frachtenberg 1922b:552)
74					Lōt-	to hit	(Frachtenberg 1922b:505)
75					L!ōx-	to send	(Frachtenberg 1922b:503,562)
76					Lō <sup>ɛ</sup> L	I wonder, I don't know	(Frachtenberg 1922b:596)

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	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
77					L!a <sup>rai</sup>	place, country, ground, world	(Frachtenberg 1922b:602)
78					L!xū-	to know	(Frachtenberg 1922b:548)
79		tcī				water	(Frachtenberg 1922b:549,560)
80		tcī'	t'ī			wind	(Frachtenberg 1922b:488)
81	t'ū	ha	tc'īn-			to try to sell severally	(Frachtenberg 1922b:524)
82			-tcū			try to (imp., follows verb)	(Frachtenberg 1922b:597)
83			ku	ts-		to paint	(Frachtenberg 1922b:486)
84			kū <sup>i</sup>	tcī'	nī	not come back	(Frachtenberg 1922b:595)
85			kū <sup>u</sup>	tcī	yū	sea-otter	(Frachtenberg 1922b:558)
86			a <sup>u</sup>	tcī	yū's	camas (locative case)	(Frachtenberg 1922b:543)
87			q!a'	tctī		cedar	(Frachtenberg 1922b:560)
88			sqa'k			there	(Frachtenberg 1922b:555)
89			qīū	tcū'	nī	many women	(Frachtenberg 1922b:536)

	no	cha	ro	mu	<i>touch me not</i>	Citation
90	nā				I (1st sg.)	(Frachtenberg 1922b:553)
91	na	tc			1st sg/plobject[?]	(SWORP 6:1)
92	-ū	tsa	tcī		3rd sg. subj/2nd pl. obj	(Frachtenberg 1922b:473)
93	nā	teya			from me	(Frachtenberg 1922b:553)
94	nī'χ	tcī'tc			towards you	(SWORP 6:1)

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	no	cha	ro	mu	<i>touch me not</i>	Citation
95		nà	ts		if not, conditional	(Frachtenberg 1922b:501,617)
96	kū <sup>i</sup>	nà	ts		if not...	(Frachtenberg 1922b:455)
97		nî'c	tcīł		go not (-ił'negative')	(Frachtenberg 1922b:627)
98		nis	tcī'	tea...	why did you not...	(SWORP 1:14)
99		nīc	tc-		to fight	(Frachtenberg 1922b:507)
100		nīc	tca	t!	to fight	(Frachtenberg 1922b:564)
101		nīc	tca	t'a <sup>u</sup> x	to fight mutually(?)	(Frachtenberg 1922b:507)
102		nīc	tca	t!a <sup>ε</sup>	battlefield	(Frachtenberg 1922b:564)
103		nīc	tcīn	wa <sup>i'</sup>	spring comes	(Frachtenberg 1922b:557)
104		nīc	tca		something, how	(Frachtenberg 1922b:554)
105		nī'c	tca		manner	(Frachtenberg 1922b:627)
106		nīc	tcī	ma <sup>ε</sup>	custom, fashion	(Frachtenberg 1922b:564)
107	s <sup>E</sup> a'ʔsatc nīc	tcī	ma <sup>ε</sup>	mū	thus is his custom	(Frachtenberg 1922b:547)
108		nī'c	tcī	mīn	because I intend... (?)	(Frachtenberg 1922b:479)
109	ł	nū			outside	(Frachtenberg 1922b:550)
110	u <sup>4E</sup> nx ł	nū	Lī	ha'	and they outside went	(Frachtenberg 1922b:550)
111				mux <sup>u</sup>	reciprocal(?)	(Frachtenberg 1922b:506)

second set, there are many forms related to ‘going’ (56–65), and ‘drinking’ or ‘water’ (66–73). Lines (79–89) are miscellaneous correspondences, some of which appear to be quite close, the word for ‘sea otter’ (85) in particular. As mentioned in the previous section, one could entertain various combinations of forms from the first and second sets, resulting in possible but highly speculative full correspondences, but it is unclear which of these combinations are grammatical.

Although the negative marker itself (*kū*, cf. semantically-similar forms) does not suggest a correspondence with Madox’s ‘touch me not’, the conditional negation in (95–96) could. Unfortunately I could not find a form related to ‘touch’ and so it is unclear whether combining (95–96) with a form related to ‘touch’ is possible, or would yield a phonologically similar match. The word for ‘battlefield’ (102) and ‘custom/fashion’ (106–107) offer surprisingly close phonological correspondences. Line (102) is almost on par, in terms of phonological closeness, with Heizer and Elmendorf’s Coast Miwok correspondence, although semantically, it is difficult to imagine how ‘battlefield’ could be misconstrued by Drake’s crew as applying to a situation which they perceived as indicating ‘touch me not.’ Finally, it is interesting that Coos, discussed in the next section, also shows forms related to ‘outside’ (109–110).

### 10.3 Coos (Hanis-Milluk)

Two dialects of Coos was spoken to the south of both Alsea-Yaquina and Siuslaw-Lower Umpqua. The following phonemic charts are drawn from comparative data listed in Sapir and Swadesh (1953):

**Table 17:** Coos consonants and vowels

	labial	alveolar	lateral	palatal	velar	uvular	glottal
stop	p	t			k      k <sup>w</sup>	q	ʔ
aspirated	p <sup>h</sup>	t <sup>h</sup>			k <sup>h</sup>	q <sup>h</sup>	
ejective		t̚			k̚      k̚ <sup>w</sup>	q̚	
affricate		c	ɬ	č			
aspirated		c <sup>h</sup>	ɬ <sup>h</sup>	č <sup>h</sup>			
ejective			ɬ̚	č̚			
fricative		s	ɬ	š	x	χ      χ <sup>w</sup>	h
voiced					ɣ		
resonant	m	n	l				
glottalized							
glide	w			y			

**Table 17:** Coos consonants and vowels (*cont'd*)

	front	central	back
high	i		u
mid	e	ə	
low		a	

Although not represented above, stops, fricatives, and affricates may be realized as voiced. This becomes clear when comparing the entries relating to ‘cohabiting’ (47–50) in the phonologically-similar forms section. This means that direct correspondences with *tobah* and *gnaah* should be possible. Coos has a contrastive series of aspirated stops and affricates, which presumably do not undergo optional voicing.

The semantically-similar forms obtained for Coos are given in Table 18. The closest apparent correspondence in this chart comes from the word for ‘tobacco’, with the conspicuous exception of any /b/ in the Coos forms. The root for to ‘touch’ *nix(t)* bears a rough correspondence to the first few segments of *nocharo mu*, i.e. /noč/. The vowel change from /o/ to /i/, and the de-affricativization and backing of /č/ to /x/ remain unexplained, however. Unfortunately I could not find a suitable match for ‘bread’ or ‘root whereof they make a kind of meal and either bake it into bread or eat it raw.’ The sentence *hats yî’qa tcī Lōwa’kats* ‘just continually there he sat’ seems to correspond to *huchee kecharoh*, plus two additional syllables. See discussion of this form below.

I now move on to a presentation and discussion of phonologically-similar forms found for Coos, which are shown in Table 19. The Coos word for ‘tobacco’ seems to be a close phonological, as well as semantic, match with Fletcher’s *tobah*, with the obvious exception of the missing /b/ in the Coos form. Abstracting away from the voiced velar (/g/) as the first segment of *gnaah* ‘entreat to sing’, and allowing voiceless /k/, voiceless ejective *k’* (/k’/), or voiceless velar fricative /x/, and we have four Coos possibilities showing the the velar consonant to nasal transition. None of these forms (2–5) seem to have anything to do with singing, however.

The phonotactics of Coos, like Alsea and Siuslaw, give rise to many possible correspondences for *huchee kecharoh*. Of particular interest are the forms listed in (10–30). Coos sentences often begin with a particle *hats*, translated as *just, as soon as, introduces a new idea* in (10). Although the /a/ vowel in *hats* does not correspond to the /u/ vowel in *huch*, and the alveolar affricate /c/ (‘ts’) is more forward than the target palatal affricate /č/ (‘ch’ or ‘tc’), (27–28) nevertheless offers a particularly close correspondence, both phonologically and semantically. The /y/ glide in the second particle *yîqa(χ)* ‘right away, nevertheless’ (34) may have the phonetic effect of pulling towards the back of the mouth the /c/ (‘ts’) phoneme, resulting in a more palatal realization. The correspondence of the final syllable *roh*

**Table 18:** Coos: Semantically-similar forms

	Fletcher/Madox	Translation	Coos	Translation	Citation
1	hióh	a king	sikinin słklnxam hethede, hæthæ'dæ	chief (Milluk) chief (Hanis) chief, rich man (Milluk)	(Whereat 2001a) (Phillips, p.c.) (Whereat 2001a), [Phillips, p.c.]
2	tobâh	an herb	*tahɔ *ta'ha dahai	tobacco, planted in sand, mixed w/ kinnikinnick leaves. tobacco tobacco (Milluk)	(SWORP 4:11) (SWORP 6:9) (Whereat 2001a)
3	gnaáh	entreat to sing	n'k'li'le't îc k'li'le'wak'î'î'tê k'wli hat'î maçáæ'æn qak'wliwæ	I sing (I am doing it now) you (plural) sing to sing (Hanis) to sing (Milluk) to sing and dance (Hanis, Milluk) begins to sing	(SWORP 5:13) (SWORP 5:13) [Phillips, p.c.] [Phillips, p.c.] [Phillips, p.c.] [Phillips, p.c.]
4	petáh	root...	kwimlts	wapato (Hanis, Milluk)	(Phillips, p.c.)
5	cheepe	bread	dl'laq, tl'aq	bread, camas (Hanis)	(Phillips, p.c.)
6	huchee kecharoh	sit down	Lowa'kats e'Łũ'k'nEx k'łō'la tsfx'Le e'Łō'k'ũ hE dE'msit ntee'ne'nís *hats yí'qa tēī Lōwa'kats ha'ũ tñf'qtstũ pōkwí'lnē'í tī'łqats	to sit, to live (sing.) sit down, my father sit down here quickly! at the edge of the prairie they sat down just continually there he sat [??] opposite each other he set them down	(Frachtenberg 1922a:357) (Frachtenberg 1922a:325) (Frachtenberg 1913:104)  (Frachtenberg 1922a:425) (Frachtenberg 1922a:320)  (Frachtenberg 1922a:355)

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<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Coos</b>	<b>Translation</b>	<b>Citation</b>
7 nocharo mu	touch me not	nix(t) n̄t̄aɪ̄ˈyat hɛx n̄ˈx̄t̄ɪc h̄ɪs̄ ɪ̄n n̄ˈx̄t̄ɪs hats̄ ɪ̄n n̄ˈx̄t̄ɪs h̄ɛˈyu ɛ̄ n̄ˈχ̄ɪ̄ ɛ̄n̄ˈχ̄t̄ɪs̄aɪ̄s ǣn n-nlxt̄ɪtsə shIn In n-nlxt̄ɪtsə in hel-	to touch I commenced to touch it he did not touch him he did not touch him you might get touched you touched me Don't you (Singular) touch me! (Imperative) Don't you (plural) touch me! (Imperative) not so!	(Sapir and Swadesh 1953:136) (Frachtenberg 1922a:340) (Frachtenberg 1913:106) (Frachtenberg 1913:132) (SWORP 5:13) (SWORP 5:13) [Phillips, p.c.] [Phillips, p.c.] (Frachtenberg 1922a:312)

**Table 19:** Coos: Phonologically-similar forms

	to	báh	<i>an herb</i>	Citation
1		*ta´	ha	(SWORP 6:9)

	g	naáh	<i>entreat to sing</i>	Citation
2	x	na´at	run(?) shore(?)	(Frachtenberg 1913:36)
3	k!	nē´s	hump (one)	(SWORP 5:13)
4	kL	nē´ês	bank	(SWORP 5:13)
5	x	nō	just	(SWORP 6:8)

	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
6	ā´	ts-				to give	(Frachtenberg 1922a:355)
7	ā´	tsa				give	(SWORP 5:13)
8	ā´	tsa				he gave it to him	(Frachtenberg 1913:34)
9	â	tsō´	nfs			what has been given to me	(SWORP 5:13)
10	ha	ts				just, as soon as, introduces a new idea	(Frachtenberg 1922a:410)
11	ha	tsyf´	qa			just continually	(Frachtenberg 1913:6)
12	ha	tsici	la. . .			just there. . .	(SWORP 6:20)
13	ha´ts	kwa				just like. . .	(SWORP 6:17)
14	ha	ts fs	4ō <sup>ux</sup>	tā´	ya	just we two watch it	(Frachtenberg 1913:9)
15	ha	ts fs	4ō <sup>x</sup>	tā´	ya	just we two watch-it	(SWORP 6:17)
16	hā´	ts gī´	ê	î´	lyats	Just a little you look	(SWORP 5:13)

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	hu	chee	ke	cha	roh		<i>sit down</i>	Citation
17		hā' ts gī' n	î' n	î' n	lʒats		Just a little I look	(SWORP 5:13)
18	he e'ne	ts yî qa'	ts yî qa'	tē' qa'	ya 'm		your shot fell short close by right here	(Frachtenberg 1913:176)
19		ts yî' qax	qax	ûx	L '4dji		right away they two were given battle	(Frachtenberg 1913:122)
20		ts yî qan	qan	tce'	wîtc		then she drew back	(Frachtenberg 1913:64,66)
21		tsyî' qax	qax	qa'	qat		just right away fell asleep the bear	(Frachtenberg 1922a:410)
22		ts yî qax	qax	k'î	4ō		just right-away he-saw-it the water	(SWORP 6:17)
23		ts yî qax	qax	wêndj	wêndj		just keep-up that-way (show-ing it)	(SWORP 6:17)
24	tsō' k'ut' tsi'	ts yî qax	qax	wêndj	wê		now are-held-back-(the waves) just keeps-on that-way it rolls	(SWORP 6:17)
26	k'ut' tsi'	ha' ts					are-held-back just ...	(SWORP 6:17)
27	*ha	ts yî' qa	qa	tcī	Lō		just continually there he sat	(Frachtenberg 1922a:425)
28	*ha'	ts yî qa'	qa'	tcī	Lō		just continually sitting	(SWORP 6:17)
29	ha' ts	tcī' la <sup>u</sup>	la <sup>u</sup>	he'	mmis		just there that one big-getting	(SWORP 6:17)
30	ha	ts in	te	wi'	tsu		just not ebb-tide	(SWORP 6:20)
31	hats	tcī' kwał	kwał	ûx	wi' l		it seemed as if they disappeared there	(Frachtenberg 1913:122)
32	ha	ts <sup>E</sup> yu	yu				always	(Frachtenberg 1922a:410)
33	hā'	ts <sup>E</sup> yū gō <sup>u</sup> s	gō <sup>u</sup> s	mī'	lîtc		always he keeps on going out	(SWORP 5:13)
34		yî' qa(x)	qa(x)				right away, nevertheless	(SWORP 6:8)

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		<b>hu</b>	<b>chee</b>	<b>ke</b>	<b>cha</b>	<b>roh</b>		<i>sit down</i>	<b>Citation</b>
35		t'cɿ'ts	yî	qa'n	pé'	Le		he-shoved-it right/still with-roasting-stick	(SWORP 6:17)
36		he'	cîn					2nd pers. possessive pronoun	(Frachtenberg 1922a:398)
37		hetc	he	tcɿ	nō'	nî	tēm	they gave it up	(Frachtenberg 1913:56)
38		ha	tcîn-					to give up, to despair	(SWORP 6:8)
39		hă	tcɿ	t!				story	(Frachtenberg 1922a:312)
40		hă	tct'e	nî'	ye	qEm		story	(Frachtenberg 1922a:312)
41	ê	hă'	tcɿ	t'la	nā'	mî		I told you a story	(SWORP 5:13)
42	ɬ	hă'	tcɿ	t'la	nî'	waq		They are telling a story	(SWORP 5:13)
43a		hî	tc					refers to one certain tree, standing among many other trees	(SWORP 5:13)
43b		hî	ch'ii					one (numeral) (Milluk)	(Whereat 2001a)
44		hî	tcō					to be together	(SWORP 6:9)
45		hî	tcū					to be together	(SWORP 6:9)
46		hî	tcō'	nî	hî	ye	û mên	were assembled people, came together	(Frachtenberg 1922a:341)
47		hū'	dʒê					to cohabit	(SWORP 5:13)
48		hū'dʒ	dʒê'	nî				cohabiting (two in action)	(SWORP 5:13)
49	ê	hū'ts	hu	tsā'	mî			I cohabit with you	(SWORP 5:13)
50	n	hū'	tshu	wats				I cohabit with her	(SWORP 5:13)
51		hu						exclamation (delight)	(Jacobs 1939:103)
52		hū-						to be ready	(Frachtenberg 1922a:413)
53		hu <sup>w</sup> -						ready, to be	(SWORP 6:8)

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	hu	chee	ke	cha	roh		<i>sit down</i>	Citation
54	hu	wé' wí	ī	tsEq			get ready	(SWORP 5:13)
55	n	hé' wí	yê				I am ready	(SWORP 5:13)
56	î	χê	.n	lā'	ats		I get into the canoe	(SWORP 5:13)
57	î	χê	ɬ.n	χ'	Lē't		on a canoe I put them	(SWORP 5:13)
58	tso						now	(SWORP 6:8)
59	tsō'	yî	qa'	tcí	qE		now entirely he-took-them-out	(SWORP 6:17)
60	tsō	tsî					now only	(Frachtenberg 1913:19)
61	tsō	tsî	ä'	wí	xEm		this is the end	(Frachtenberg 1913:42)
62	tsō	tsî	ku	mí	ye		here it ends	(Frachtenberg 1913:52)
63		-tse					shore / back of the woods (?)	(SWORP 6:9)
64		tc!e					shore / back of the woods (?)	(SWORP 6:9)
65	ɬ	tcí	lé'	ês			edge of water	(SWORP 5:13)
66	ɬ	tcí	la'	aís			close to shore	(SWORP 6:17)
67	le'	xatc-					inside	(SWORP 6:8)
68	tí	tcā'	yímx	ndō	wā'	ya	I'd like to come in	(SWORP 5:13)
69	xE	ts	xa	wēí'	wat		he is putting it down	(Frachtenberg 1922a:379)
70		tcí	ûx	hí'	tō <sup>u</sup> ts		there they two put it down	(Frachtenberg 1913:7)
71	ta	tcí	kwe	tc!	ō <sup>u</sup>		and lie down there with his wife	(Frachtenberg 1913:168)
72		ē'	qa	tce			aside	(Frachtenberg 1922a:370)
73		e'	qa	tce			to one side	
74		ē	qa	tce'	wítc	kwílkwē'íē'yú	to one side he was rolled	(Frachtenberg 1922a:370)

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		hu	chee	ke	cha	roh		<i>sit down</i>	Citation
75		ha	tsē	qa	tce'	wŋtc	p <sup>F</sup> cī IE tem' snātc	the grandson just blew off to one side	(Frachtenberg 1913:66)
76		ha	ts ē' i	qa	tcEm	stō <sup>u</sup>	qtset	..was made to stand at one side	(Frachtenberg 1913:68)
77			tcī	kats	tcī	Lō <sup>u</sup> k <sup>u</sup>		there	(Frachtenberg 1922a:405)
78			Lōwa'		l e <sup>ε</sup>			sat there	(Frachtenberg 1922a:423)
79			tcī f					there surely thou sit down	(Frachtenberg 1922a:424)
80			tcī	hī	tō <sup>u</sup>	tsa'	tExa	there he placed (the things) before him	(Frachtenberg 1913:38)
81		tsō	tcī	ûx	tcī	he'	laq qā'yīs	now there they two. . .	(Frachtenberg 1913:8)
82	de'			k'etc	tcī			every time the season arrives there. . .	(Frachtenberg 1913:36)
83				k'lä-				privative, 'less'	(Frachtenberg 1922a:322,422)
84				k'lä	tc!	wāł		without fire	(Frachtenberg 1922a:422)
85		hats	K.lê	hu	wā'	was		just without delay	(SWORP 6:17)
86				qa-				inchoative	(Frachtenberg 1922a:322)
87				qa	tcī	ne	henī'we	he began to think	(Frachtenberg 1922a:335)
88	s			qa'	ts			he seized it	(Frachtenberg 1922a:344)
89	fłs			qa'	tsE	me <sup>u</sup>		they seize one another	(Frachtenberg 1922a:332)
90				qai	ts			inside	(Frachtenberg 1922a:370)
91				qai'	tsō	wī	tc fłte <sup>x</sup> fłts	inside they entered	(Frachtenberg 1922a:370)
92	ā'yu		ûx	qai'	tso	wī	tc ûx t' tci' yat	indeed they two brought him inside	(Frachtenberg 1913:128)
93						Lō <sup>u</sup>		to eat (prefix)	(Frachtenberg 1922a:360)
94						Lō	wēn	eat!	(Frachtenberg 1922a:348)

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	hu	chee	ke	cha	roh		sit down	Citation
95					Lō	wē'wat	she is eating it	(Frachtenberg 1922a:348)
96					Lō	wē'wat	was eating	(SWORP 6:17)
97	tē'Ł				Lō'	watEtēt	you must eat this meat	(SWORP 5:13)
98	tē'Ł				Lō'u'	wE	this you must eat!	(Frachtenberg 1922a:348)
99					Lō	wa'kats	to sit, to live	(Frachtenberg 1922a:357)
100	n				Lō'	waqats	I am sitting down (completive)	(SWORP 5:13)
101					Lō	wa'qats tci'ŋE mē	sitting there the man...	(SWORP 6:17)
102					Lō		That / into	(SWORP 6:9)
103					Łō		that thing	(Frachtenberg 1922a:416)
104					Łō <sup>ux</sup> t		to watch (prefix)	(Frachtenberg 1922a:344)
105	e	hé'n	tce				far off	(SWORP 6:20)
106	ní	hí'	tchi	wē	wat		I gather	(SWORP 5:13)
107		hí	tc'í'	ně			dual inclusive	(Frachtenberg 1914:144)
108	la <sup>u</sup> hūs	xä	tci			Ła	he also there went...	(Frachtenberg 1922a:411)
109	yíxäwE	xe	tc tci'			naŁ lä k' mā'x	to the roof of the house reached its horn	(Frachtenberg 1922a:382)
110		χ	tci'				what	(SWORP 5:13)
111		t <sup>E</sup> -	tci'				take it in [imperative?]	(SWORP 5:13)
112		tse	tí'	me	Ló	he <sup>u</sup> he <sup>u</sup> ha <sup>u</sup> we!	on this side make knot	(Frachtenberg 1922a:402)
113			-ä	tc			term of kinship	(Frachtenberg 1922a:365)
114			-etc				at, in, through, on, into	(Frachtenberg 1922a:369)
115			k'í	tsí'	mís		half	(Frachtenberg 1922a:364)
116			kwā	te'	was		residence	(SWORP 6:8)

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	hu	chee	ke	cha	roh		<i>sit down</i>	Citation
117			qai	c			small	(Frachtenberg 1913:208)
118	tʰ		qaʰ	tc			up-stream	
119			qai	Lāʰ	wa	s	waves	
120			qeʰ	tc			slowly	
121			qats	he			just usually...	(SWORP 6:20)
122			lā	tcī	ya		name, to call by (prefix)	(SWORP 6:8)
123				tcʰa-			to walk	(SWORP:6:9)
124		neʰ	tsī				to do (plural)	(Frachtenberg 1922a:357)
125		nīc	tc				little, a few	(SWORP 6:8)
126	ɦ	nīʰc	tcū				how many are they?	(Frachtenberg 1922a:372)
127	qaʰ	na	tc				joke, fun	(SWORP 6:8)
128	qaʰ	nō	tc				outside	(Frachtenberg 1922a:406)
129	qaʰ	nōʰ	tca				outside to...	(Frachtenberg 1913:11)
130	qaʰ	nō	tc	tsxū			outside we lay	(Frachtenberg 1922a:406)
131	qaʰ	nō	tca	ɦ	L.lēʰtc		outside they went	(Frachtenberg 1922a:406)
132	qaʰ	nō	tc	stōʰq	lāɦ	tōʰmīL	outside stood that old man	(Frachtenberg 1922a:402)

	no	cha	ro	mu		<i>touch me not</i>	Citation
133	qa	nōʰ	tc			I am standing outside	(SWORP 5:13)
134	qa	nōʰ	tcān	s	tōʰq	I am going outside	(SWORP 5:13)
135		mīʰ				not	(SWORP 5:13)
136		nīʰcīʰt	tcō	yū		I am not to be put to bed.	(SWORP 5:13)
137				mā		human being	(SWORP 6:8)

is the first syllable of the verb *Lōwa'qats* 'to sit', where 'L' is equivalent to Americanist /ʁ/. The meaning of 'sit' cannot however be isolated to the first syllable *Lō*, and so assuming the correspondence of (27–28) requires that we also assume that Madox's informants forgot the last few syllables of the utterance. Other interesting phonological correspondences include words and phrases related to 'story' (39–42), and those related to 'assembling' or 'being together' (43–46)<sup>31</sup>. A high frequency particle to note in this list is the word *tci* 'there' (77), which could very plausibly have been present in a phrase meaning 'sit down', i.e. 'sit down over there'.

Coos, unlike Alsea or Siuslaw, does show syllabic correspondences to the first syllable of *nocharo mu*, i.e. /noč/ (128–134). These are not related to 'touching', however, but to 'being outside'. As mentioned in the previous section on semantically similar correspondences, various realizations of the negative particle which include /n/ might be construed as corresponding to the initial syllable of *nocharo mu* (135–136), but the vowel correspondences are not correct, and neither are the following consonants.

In sum, the most probable correspondences from Coos are those for *tobáh* 'an herb' and *huchee kecharoh* 'sit down'.

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<sup>31</sup>Lines (43–46), by the way, could also be taken as a possible correspondence to *hióh*, under its Chinuk Wawa meaning, though the presence of the č sound remains unexplained.

### 10.4 Takelma

Takelman and Kalapuyan were thought to form a sub-branch of Penutian (Sapir 1922). These tables are drawn in part from comparative data listed in Sapir (1922:31) and Shipley (1969):

**Table 20:** Takelma consonants and vowels

	labial	alveolar	lateral	palatal	velar	uvular	glottal
stop	p	t			k    k <sup>w</sup>		ʔ
aspirated	p <sup>h</sup>	t <sup>h</sup>			k <sup>h</sup> k <sup>w h</sup>		
ejective	p̣	ṭ			ḳ    ḳ <sup>w</sup>		
affricate							
ejective		č̣		č̣			
fricative		s	ʃ	š	x		h
resonant	m	n	l				
glide	w			y			

short		long	
i	u	iː	uː
e	o	eː	oː
a		aː	

Shipley (1969:227) implies that unlike other Penutian languages, there are not ‘true voiced stops’ in Takelma, despite Sapir’s (1922) phonetic account of the language.<sup>32</sup> It is notable that Takelma has only a glottalized, not a non-glottalized, affricate series.

The only direct semantic correspondences I could find for Takelma were related to ‘singing’ and ‘sitting’, and are given in Table 21. Neither set of forms offers a particularly close phonological correspondence, however.

The phonologically-similar forms obtained for Takelma are shown in Table 22. Lines (1–2) seem at first to be interesting correspondences, but comparing (1), related to ‘singing’, with (2), related to ‘eating’, we see that the ‘singing’ component comes from *hēl*, and not from *k’naʔ*, which must instead be understood as consisting of a 3rd person pronoun and/or temporal subordinator equivalent to ‘when’. The correspondences for *huchee kecharoh* and *nocharo mu* are less interesting than those discussed for the Coast Penutian languages, Alsea, Siuslaw, and Coos, and the lists for Takelma are also obviously much less extensive. It was

<sup>32</sup>Shipley (1969) gives an inventory of reconstructed Proto-Kalapuyan, which notably lacks a glottalized stop series, has lateral and labio-dental fricatives, and has only a three-vowel system, missing mid vowels /e/ and /o/.

**Table 21:** Takelma: Semantically-similar forms

	Fletcher/Madox	Translation	Takelma	Translation	Citation
1	hióh	a king			
2	tobâh	an herb			
3	gnaáh	entreat to sing	helel-, heel-	to sing	(Sapir and Swadesh 1953:136)
4	petáh	root...	tiph	camas	(Shipley 1969:229)
5	cheepe	bread			
6	huchee kecharoh	sit down	mắ'p'ai-yu' măwí'p'ai-yu'	sit down! Do you too sit down!	(SWORP 4:7) (SWORP 4:7)
7	nocharo mu	touch me not			

Table 22: Takelma: Phonologically-similar forms

	<b>g</b>	<b>naáh</b>	<b>sit down</b>	<b>Citation</b>
1	hēl	na <sup>ɛ</sup>	when he sang	(Sapir 1922:39)
2	gaĩ	na <sup>ɛ</sup>	when he ate it	(Sapir 1922:40)
3		nā	if he comes	(Sapir 1922:43)
4		naʼ	of just that sort	(Sapir 1922:44)
5	na	nāʼa		(Sapir 1922:44)

	<b>hu</b>	<b>chee</b>	<b>ke</b>	<b>cha</b>	<b>roh</b>	<b>sit down</b>	<b>Citation</b>
6			ka			that (indef.)	(Sapir and Swadesh 1953:136)
7			ga			that	(Sapir 1922:32)
8			kʼa			what	(Sapir 1922:32)
9	xa <sup>ɛ</sup> ĩ	tsʼi	wiʼtʼ			he split it open	(Sapir 1922:79)
10	xā <sup>a</sup>	tsʼa	yāpʼ			he washed his back	(Sapir 1922:79)
11	ha	tsʼa	yāpʼ			she washed her pri- vate parts	(Sapir 1922:82)

	<b>no</b>	<b>cha</b>	<b>ro</b>	<b>mu</b>	<b>touch me not</b>	<b>Citation</b>
12	nū <sup>u</sup>	tʼ			drown	(Sapir 1922:63)
13	nō <sup>ae</sup>	sʼ			next door	(Sapir 1922:36)
14	nōʼ	tsʼatʼ	gwan		next door to each other	(Sapir 1922:36)

much more difficult to find any sort of phonological correspondence for Takelma, and none of the ones listed here are particularly close, either phonologically, or semantically.

## 10.5 Kalapuyan

The data in this section were drawn from Swadesh (1965), and Berman (1990), who reconstructs the phonology of Proto-Kalapuyan.

Close semantic matches were difficult to find (Table 23), however *pdóʔ* ‘potato / wapato’ exhibits a strong correspondence to *petáh*, both semantically and phonologically. This Kalapuyan root is possibly the source of the Chinuk form for *wapato*, which prefixed a feminine singular agreement morpheme *wa-* to the root. See further discussion in Section 11.

Phonological correspondences, other than *pdóʔ* as mentioned above, were not very forthcoming (Table 24).

## 10.6 Molalla

Molalla was spoken to the east of Takelma and Kalapuya, along the eastern edge of the Oregon Cascades, and for this reason is less likely to be the contacted group. Linguistic data is difficult to come by for this language. All the data below was gleaned from Drucker’s notes in the SWORP collection.

None of the possible correspondences I have been able to find for Molalla, semantic or phonological, seem particularly promising, but are nevertheless included here in Table 25 and Table 26.

## 11 Athabaskan languages

This section discusses Columbia River area Athabaskan language Kwalhioqua-Clatskanie. Of the Kwalhioqua dialect, the data is taken from the Willapa Bay group, whereas data from the Clatskanie dialect come from both Clatskanie proper, as well as a few lexical items from a dialect called ‘Tahkully’ by A.C. Anderson in his word lists. The Kwalhioqua dialect was spoken on the north side of the Columbia in present day Washington State, while Clatskanie was spoken on the southern side in Oregon.

Afterwards, I present data from the Athabaskan languages of southwestern Oregon.

### 11.1 Kwalhioqua-Clatskanie

None of the three semantically similar forms which I was able to find are close phonological correspondences, shown in Table 27.

**Table 23:** Kalapuyan: Semantically-similar forms

	<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Kalapuyan</b>	<b>Translation</b>	<b>Citation</b>
1	hióh	a king	cámbe-k	chief (Proto K)	(Berman 1990:22)
2	tobáh	an herb			
3	gnaáh	entreat to sing	kwená-y- k'áut, k'áuda	sing well sing (Proto K)	(Swadesh 1965:240) (Berman 1990:4)
4	petáh	root ..	malip, tank tiph mis *pdó?	root camas camas (Proto K) potato (Proto K)	(Swadesh 1965:238) (Shipley 1969:229) (Berman 1990:22) (Berman 1990:30)
5	cheepe	bread			
6	huchee kecharoh	sit down	sùu7al-yuu/t7as-tu, yu, pii/t7es-tu Pciy'u pei'yueDa hasi'tɛ'T'ɛTu yo, yu	sit (Santiam)  sit down (Tualatin Kalapuya) sit down! (Tualatin Kalapuya) sit down here sit (Proto-K)	(Swadesh 1965:238)  (Jacobs 1974:20, n.b. 122) (Jacobs 1974:22, n.b. 122) (Jacobs 1974:n.b. 33) (Shipley 1969:230), (Berman 1990:43)
7	nocharo mu	touch me not	wá7	not/not-to-be (Proto K)	(Berman 1990:15)

**Table 24:** Kalapuyan: Phonologically-similar forms

	g	naáh		<i>entreat to sing</i>	Citation
1		na	ka	say (Proto K)	(Shipley 1969:230)

	pe	táh		<i>sit down</i>	Citation
*2	p	dóʔ		wapato, potato (Proto K)	(Berman 1990:30)

	chee	pe		<i>bread</i>	Citation
3	tʃi			I (1st sg.) (Proto-K)	(Shipley 1969)
4	tʃe			I (1st sg.)	(Swadesh 1965:237)

	hu	chee	ke	cha	roh		<i>sit down</i>	Citation
5	huʻ	cʻa					that, those (Tualatin Kalapuyan)	(Jacobs 1974:35, n.b. 122)
6	huʻ	cwi					okay	(Jacobs 1974:57, n.b. 122)
7	ha	siʻ	Tɛʻ	Tʻɛ	Tu		sit down here	(Jacobs 1974:n.b. 33)
8	has	tciʻ	in	Taʻ	ni	kɛ	this is mine	(Jacobs 1974:n.b. 33)
9	huʻ	ts̥			yo		panther	(Frachtenberg 1918:180)
10					yu		sit (Proto K)	(Shipley 1969:230)
11							sit (Proto K)	(Shipley 1969:230)
12		tʃi					I (1st sg.) (Proto-K)	(Shipley 1969)

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	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
13		tʃe				I (1st sg.)	(Swadesh 1965:237)

		no	cha	ro	mu	<i>touch me not</i>	Citation
14		na	ka			say (Proto K)	(Shipley 1969:230)

**Table 25:** Molalla: Semantically-similar forms

	Fletcher/Madox	Translation	Molalla	Translation	Caption
1	hióh	a king			
2	tobáh	an herb	tiānp	tobacco	(SWORP 1:16)
3	gnaáh	entreat to sing			
4	petáh	root...	wat	Indian potatoes some sort of tubers on water-lily, tramped out of mud by women. Don't dry, just stored (in pit?) “ ”	(SWORP 4:11)
5	cheepe	bread			
6	huchee kecharoh	sit down			

Table 26: Molalla: Phonologically-similar forms

	g	naáh		<i>entreat to sing</i>	Citation
1	naʼ	ñ	gaē	all	(SWORP 1:16)

	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
2	hō	tc ti	kai			wood bucket, mortar of wood, wrapped w/ deersksin to make ... tʼimL stone pestle. used for chokecherries, camas, meat, salmon eggs, pounded up.	(SWORP 4:11)
3	hū	ts				drill, made from some kind of wood from mts : säwül	(SWORP 4:11)
4			kū <sup>n</sup>	ts		small dentalia	(SWORP 4:11)

**Table 27:** Kwalhioqua-Clatskanie: Semantically-similar forms

	<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Kwalhioqua-Clatskanie</b>	<b>Translation</b>	<b>Citation</b>
1	hióh	a king	kskeh	chief (Kwalhioqua)	(SWORP 1:3)
	hióh	a king	Cooskay Mee-ooty	chief (Clatskanie) chief (Clatskanie, 'Tahkully' group)	(SWORP 1:3) (SWORP 1:3)
2	tobâh	an herb			
3	gnaáh	entreat to sing	stāw̃l̃lum	to sing (Kwalhioqua)	(SWORP 7:14)
4	petáh	root...			
5	cheepe	bread			
6	huchee kecharoh	sit down	*néht-sa-to	to sit (Kwalhioqua)	(SWORP 1:2)
	huchee kecharoh	sit down	i' stâ Intâ	sit thou (imperative) (Clatskanie) sit thou (imperative) (Tahcully)	(SWORP 1:3) (SWORP 1:3)
7	nocharo mu	touch me not			

The word for ‘chief’ in the Clatskanie dialect is the same as that for Kwalhioqua, while the Tahcully group shows a different form. Interestingly, the word *néhtsato* ‘to sit’ bears a closer sound correspondence to *nocharo* in *nocharo mu*, which raises the additional as-yet-not-touched-upon possibility that Madox’s informants may have confused the translations of the phrases they remembered, substituting one for another.

The phonologically-similar forms obtained for Kwalhioqua are shown in Table 28. I include form (1) here because of the prominence of vowels, which is similar to vowel-heavy *hioh*. The vowels themselves do not closely correspond, however. The meaning ‘great, large’ is barely reminiscent of Chinuk Wawa *hayu* ‘to be lots’ or ‘several, many, a group, a gathering’.

There are some interesting correspondences to *huchee kecharoh* in the above chart. The word for ‘basket/kettle’ (2–3) is very close, and the words for ‘iron’ (6–7) correspond exactly to the last two syllables of the Madox form. None of the forms here seem transparently related to situations involving ‘sitting down’, and so we would be forced to assume an incorrectly induced meaning on the part of Madox’s informants.

As mentioned above, the word for ‘to sit’ (12–13) is extremely close to *nocharo*, with the exception of the first syllables vowel, the alveolar rather than palatal affricate, and a /t/ rather than /tʃ/, which the Coast Miwok correspondence also contains. The word for ‘to dance’ (14) shows that this general morphological form is indicative of verbs, and raises the question of whether perhaps ‘to touch’ might also sound similar. Unfortunately, I was unable to find a similar word meaning ‘touch’. If, as seems possible, Madox’s informant confused the meanings of the phrases that they heard and *nocharo mu* actually meant ‘sit down’, then we might postulate an imperative, or second person singular marker with the morphological form *mu* in Kwalhioqua. This is unclear, however.

## 11.2 Oregon Athabaskan

Because of the sparse relevant data available for Oregon Athapaskan, I group together Upper Umpqua, Chetco-Tolowa, Galice Creek, and Tututni (Lower Rogue River) along with dialects Coquille and Chasta Costa, into this section.<sup>33</sup> The Athapaskan languages are unfortunately very poorly documented, and lack the somewhat extensive text collections of the Coos and Alsea languages. As such, the ability to extrapolate away from the possibility of ‘situational misinterpretations’ by combing through texts or running discourse for phonological matches is extremely limited in these languages. This state of affairs is particularly unfortunate, since the phonological inventory of these languages more closely matches the

<sup>33</sup>See Mithun (1999:354–355) for a description of the genetic groupings and geographic distribution of these languages.

**Table 28:** Kwalhioqua-Clatskanie: Phonologically-similar forms

	hi	óh	<i>a king</i>		Citation
1	ō-	ē'h	great, large (Kwalhioqua)		(SWORP 7:14)

	hu	chee	ke	cha	roh	<i>sit down</i>	Citation
*2	hâh	t-sah				kettle (Clatskanie)	(SWORP 1:3)
3	hâh-	tsa	kus=	see		basket (Kwalhioqua)	(SWORP 7:14)
4	hats-		kwu	tséh		kettle (Kwalhioqua)	(SWORP 7:14)
5				tche	róh	winter (Kwalhioqua)	(SWORP 1:2)
6				tche	ro'h	iron (Kwalhioqua)	(SWORP 1:2)
7		che	kuch			iron (Kwalhioqua)	(SWORP 7:14)
8			qa	tcē'1	tcō	fat (Kwalhioqua)	(SWORP 1:2)
9				tsee	chō	give me water to drink! (Kwalhioqua)	(SWORP 7:14)
10						big canoe, ship (Clatskanie)	(SWORP 1:3)
11		see'	k			I (Clatskanie)	(SWORP 1:3)

	no	cha	ro	mu	<i>touch me not</i>	Citation
*12	néh	tsa	to		to sit (Kwalhioqua)	(SWORP 1:2)
13	nē	tsa	tō		to sit (Kwalhioqua)	(SWORP 7:14)
14	ne'h	tcí's	to		to dance (Kwalhioqua)	(SWORP 7:14)
15	nu	k			thou (Kwalhioqua)	(SWORP 1:2)
16	hon	k			ye (Kwalhioqua)	(SWORP 1:2)

probable Fletcher/Madox phoneme inventories. Specifically, some of the Athapaskan languages have the rare /t/ morpheme (cf. *huchee kecharoh*, *nocharo mu*).

The semantically-similar Southwestern Oregon Athabaskan forms (Table 29) do not seem to be close matches to the Fletcher/Madox word list. Except for the Chasta Costa word for ‘chief’ (which may in fact be Alsea), the other dialects employ an /ʃ/ sound, and there is no high vowel /i/ except as part of the diphthong in the Chasta Costa word, *taiyū*. If it were not for the initial /t/, this would be a very close correspondent to *hióh*.

The phonologically-similar forms found for Southwestern Oregon Athabaskan are shown in Table 30. The example in (1) is interesting since it shows a vocative use of the sound *hi’yu*. It’s possible that this might bear some correspondence to Madox’s song *hodeli oh heigh oh heigh ho hodeli oh*, though this is purely speculative. The Coquille forms in (5–6) and the Chetco-Tolowa form in (7) could be construed as roughly corresponding to *huchee*. The phrase in (15) is interesting, since one could easily imagine a phrase relating to gift exchange being used by the natives that Drake contacted. It is unclear to me which part of (15) is related to ‘giving of presents’ and which part is related to ‘baby’.

## 12 Chinookan

Some interesting correspondences surface in the Chinookan languages of Clackamas (Jacobs 1974:n.b. 55–64) and Wasco-Wishram (SWORP 1:19), shown in Table 31 and Table 32.

In particular, the Clackamas word for ‘another one’ in (1) bears a plausible phonological correspondence to *gnaah* ‘entreat to sing’, though the stress pattern is different. It is likewise a plausible semantic match, since one could easily imagine the contact group entreating for ‘another song’.

## 13 Possible trade-jargon connections

Any connection between the Fletcher/Madox word list and Chinuk Wawa or other trade jargon necessitates the assumption that a trade jargon was in fact already in place at the time of Drake’s landing. There is no known evidence to-date to support this assumption, but there are some worthwhile phonological correspondences to note between the Fletcher/Madox word list and Chinuk Wawa.

Oregon languages, as documented in the late 19th and early 20th century, appear to have made regular use of items which were either concurrently used in Chinuk Wawa, or else ultimately stem from a different language. A non-Chinuk Wawa example from Coos include *wá’lwal* ‘knife’ (Frachtenberg 1922a:356), which has a nearly identical correspondence in Southern Interior Coeur d’Alene Salish, *w’el’w’el’im* ‘iron, knife’, and Kalispel Salish *ululim* ‘iron, money’ (Kuipers

**Table 29:** Southwestern Oregon Athabaskan: Semantically-similar forms

	<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Athabaskan</b>	<b>Translation</b>	<b>Citation</b>
1	hióh	a king	Hushk xúS:ré hush-seh ʒəʔʒə *taiyū	chief (Upper Umpqua) head man (rich man) (Chetco-Tolowa) chief (Tututne) chief (Chasta Costa) chief (Chasta Costa)	(SWORP 1:3) (SWORP 4:12) (SWORP 1:3) (Jacobs 1974:n.b. 33) (SWORP 1:10) <sup>35</sup>
2	tobáh	an herb	sɛLīū tsɛLū	tobacco (Galice Creek) tobacco (Rogue River)	(SWORP 1:9) (SWORP 1:9)
3	gnaáh	entreat to sing			
4	petáh	root...			
5	cheepe	bread	xátsa whut	acorn soup dish (Chetco-Tolowa)	(SWORP 4:12)
6	huchee kecharoh	sit down	whLnɛ'sot atu tɛú-ta 'tún sùstă qūn' 'sta nu' 'tic háta'sta'	he sit down (proper name) (Chetco-Tolowa) I-grass-on-sit/stay (Milkwuntunne) he sits (Naltunnetunne) set it down! (Galice Creek) he sat down (Chasta Costa)	(SWORP 4:13) (SWORP 3:22) (SWORP 3:28) (Jacobs 1974:n.b. 118) (Jacobs 1974:n.b. 33)
7	nocharo mu	touch me not	ón't'sa 'ku' ín't'ca ho'	keep away! (said to children) (Galice Creek) go away (Galice Creek)	(Jacobs 1974:n.b. 117) (Jacobs 1974:n.b. 130)

<sup>35</sup>This form may be Alsea, since informant Spencer Scott was bi-lingual.

**Table 30:** Southwestern Oregon Athabaskan: Phonologically-similar forms

	hi	óh		<i>a king</i>	Citation
1	hi'	yu	héyu hiya	from 'Warm House Song' (Coquille)	(Jacobs 1974:n.b. 121)
2	hi'	yu	ʔé'st'sa' h <sup>w</sup> a <sup>n</sup>	they listened (to these people as they talked) (Galice Creek)	(Jacobs 1974:25, n.b. 129)
3	hi	y'u	ke'th <sup>w</sup> a <sup>n</sup>	they bought (Galice Creek)	(Jacobs 1974:33, n.b. 130)
4	ha	yu <sup>w</sup> i	na''me''an'	down into the house (Galice Creek)	(Jacobs 1974:39, n.b. 129)

	hu	chee	ke	cha	roh		<i>sit down</i>	Citation
5	xú	c-í					I see (Coquille)	(SWORP 3:20)
6	n xú	cí					I see you (Coquille)	(SWORP 3:20)
7	ha'	tcí	sū'(u)	te			we live good (Chetco-Tolowa)	(SWORP 4:12)
8	hñ	ĩ	lɛ	ũ	lũ		I'm glad there's a whale (Chasta Costa)	(SWORP 1:9)
9	ho	ĩ	n=ic	lɛ			I want live long time (Chasta Costa)	(SWORP 1:9)
10		ci	qa'	ce	qas	ts'ũu	east (crossed out, Chasta Costa)	(SWORP 3:19)
11			ka'	t'sa'			bucket (Galice Creek)	(Jacobs 1974:n.b. 130)
12			qũn''	sta			he sits (Naltunnetunne)	(SWORP 3:28)
13	hur'	t'ca					away from them (Galice Creek)	(Jacobs 1974:47, n.b. 130)
14	á	tsi	gi	ra'	tu	t'ĩlsi	give me water to drink	(Jacobs 1974:n.b. 33)

	no	cha	ro	mu		<i>touch me not</i>	Citation
15	na	tcō	ñic			giving of presents when people come to see baby (Chasta Costa)	(SWORP 1:9)

**Table 31:** Chinookan: Semantically-similar forms

<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Chinookan</b>	<b>Translation</b>	<b>Citation</b>
1 hióh	a king			
2 tobâh	an herb			
3 gnaâh	entreat to sing	ugwala 'lam ʔgla 'lam	singing (Clackamas) they are singing (Clackamas)	(Jacobs 1974:49, n.b. 57) (Jacobs 1974:49, n.b. 57)
4 petáh	root...			
5 cheepe	bread			
6 huchee kecharoh	sit down	nuʔa 'itx nú·'ʔait yû·'xt nâqs anō'la'ida	she sat down (Clackamas) she sat down (Clackamas) he was sitting (Clackamas) sitting (Wasco-Wishram) I'll sit down (Wasco-Wishram)	(Jacobs 1974:n.b. 58, p. 125) (Jacobs 1974:25, n.b. 64) (Jacobs 1974:75, n.b. 64) (SWORP 1:19) (SWORP 1:19)
7 nocharo mu	touch me not	k'û'ya nē'qi	no/not (Clackamas) not (Clackamas)	(Jacobs 1974:63, n.b. 55) (Jacobs 1974:109, n.b. 58)

Table 32: Chinookan: Phonologically-similar forms

					<b>g</b>	<b>naáh</b>	<i>entreat to sing</i>	<b>Citation</b>
*1					gúʔ	naɣ	another (one) (Clackamas)	(Jacobs 1974:123, n.b. 57)

	<b>hu</b>	<b>chee</b>	<b>ke</b>	<b>cha</b>	<b>roh</b>	<i>sit down</i>	<b>Citation</b>
2			ga	tcə́ʔ	tux	they/he did/made/fixed (Clackamas)	(Jacobs 1974:61, n.b. 55), (Jacobs 1974:71, n.b. 64)
3			ga	tcí	gəl	he took (Clackamas)	(Jacobs 1974:33, n.b. 56)
4			ga	tcí	xi	he dropped it/laid it (Clackamas)	(Jacobs 1974:33, n.b. 56)
5			ga	tcə́ʔ	ɬux	he got (Clackamas)	(Jacobs 1974:27, n.b. 64)
6			ga	tcír	xatq	he lay them down (Clackamas)	(Jacobs 1974:67, n.b. 64)

2002).<sup>34</sup> Given that Salish and Coos are totally unrelated languages, and that the root *wel* or *wal* is not Chinuk Wawa (Zenk, p.c.), it seems possible that some trade in metals existed between the Coast and Interior peoples which might necessitate the need for a limited shared vocabulary. While a theory cannot be built on one questionable correspondence, it is still an interesting possibility.

The nearest Chinuk Wawa correspondences for *gnaáh* and *huchee kecharoh* are purely speculative, and based only on the roughest of sound correspondences, and so I will not discuss them further.

The item *hióh* bears an approximate sound correspondence with Chinuk Wawa *hiyu* ‘several, many, a group, a gathering’, *hyas* ‘great, mighty, large, auspicious, powerful’ (<http://www.fortlangley.ca/chinook%20jargon/kamloops.html>), and *hayu* ‘many much’ (Chinook Wawa Dictionary Project 2012:81). Zenk (p.c.) traces Wawa *hiyu/hayu* to its source as a Nootkan word *ʔayu* ‘ten’ (cf. Makah *ǰayuu*) or *ʔayu* ‘to be lots’, and mentions that if this word were borrowed directly into Chinukan [Chinuk Wawa?], an /ǰ/ could have been preserved, although probably not a pharyngeal consonant ʕ, which is not phonemic in Chinukan. /h/ is found in some interjections in Chinukan, but also is not considered to be phonemic, and so the presence of /h/ instead indicates that the word was most likely introduced into Chinukan [Chinuk Wawa?] by English-speaking seafarers at some later point in time. But it is still possible that what Fletcher heard as an /h/ in *hióh* was actually the /ǰ/ in *ǰayuu*, and was transcribed as ‘h’ as the nearest equivalent to the /ǰ/ sound in the English language. This of course rests on the assumption that a trade jargon was in place before Drake made contact, and that the meaning of ‘king’ was an incorrectly induced meaning in a situation which involved a ‘gathering’. As Zenk (p.c.) succinctly states, “had we a detailed account of Drake’s landing and had good grounds for supposing that it took place on the northern Oregon Coast, we might actually have some early evidence of the existence of such a medium. But this evidence is just way too limited and ambiguous.”

The item *cheepe* could be related to Chinuk Wawa *čaplíl* or *saplíl*. Chinook Wawa Dictionary Project (2012:201) notes that although the form is usually attributed to French (which would mean that the word must have been unknown to the group Drake contacted), the word was “recorded well before the arrival of the land-based fur trade with its French-speaking voyageurs.” Lewis and Clark recorded ‘shapallel’ or ‘chapallel’ for the name of a native meal made from roots and processed into cakes (Moulton 1990:201), a description which precisely matches that recorded by Fletcher for *petáh*. It seems possible that *petáh*, could have been the raw stuff out of which *cheepe* was made.

The item *petáh* could possibly be related to Chinuk Wawa *wapato*. Chinook Wawa Dictionary Project (2012:244) describes David French’s hypothesis that the

<sup>34</sup>There is a Coos example which shows that *waʔwal*, if indeed it is a trade-jargon form, has been completely incorporated into the morpho-syntax of the language: *ǰtwaʔwalanā ʔa* ‘they would make knives out of it’ (Frachtenberg 1922a:356).

**Table 33:** Chinuk Wawa correspondences

	<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Chinuk Wawa</b>	<b>Translation</b>	<b>Citation</b>
1	hióh	a king	*hayu, hiyu, hyas ha 'ru'	several, many, a group, a gathering many, lots (Kalapuyan)	(CWDP, p. 81) (Jacobs 1974:n.b. 122)
2	tobâh	an herb			
3	gnaáh	entreat to sing	k <sup>h</sup> ənəḥ	just, even	(CWDP, p. 111) cf. SWORP 4:17
4	petáh	root...	k <sup>h</sup> anawi k'anawi	entirely, wholly, completely, totally' oak, acorn	(CWDP, p. 102) (CWDP, p. 120)
5	cheepe	bread	*pduʔ, wapato	potatoes, wapato <i>sagittaria latifolia</i>	(CWDP, p. 244)
6	huchee kecharoh	sit down	*caplíl, čaplíl hu chxi	bread exclamation immediately, just now	(CWDP, p. 201) (CWDP, p. 87) (CWDP, p. 72)
7	nocharo mu	touch me not			

form was borrowed into Upper Chinookan from Kalapuyan. The first syllable *wa* is an Upper Chinookan feminine singular prefix, while the proposed root *pdu* or *pduʔ*, referring to the plant *Sagittaria latifolia*, is Kalapuyan. If the form *petáh* is cognate to the Kalapuyan root, then it is possible that the word as Drake's crew heard it pre-dated its borrowing into Upper Chinookan (which added the initial feminine singular *wa-* prefix), but post-dated its general use in a pre-contact trade jargon. Comparing Chinookan and Kalapuyan, Frachtenberg (1918:180) notes that "the most interesting feature of these correspondences is found in the fact that, while in Chinook most of these words are stems that must be used with some affix, in Kalapuya they are treated as independent words."<sup>36</sup>

## 14 Conclusion

Some of the data in this survey exhibit interesting correspondences to items on the Fletcher/Madox word lists. The closest correspondences are only sometimes semantically close (1–5 below), and are sometimes just phonological (6–7). This necessitates an assumption whereby Fletcher and/or Madox's informants must have incorrectly induced meaning from the discourse contexts in which they found themselves. The strongest correspondences of this survey were marked with a '\*' in the preceding text, and come from a variety of the languages surveyed. They are summarized in Table 34.

The table is *not* meant to imply that any of the following statements are correct: (i) that the group Drake contacted consisted of members of all of the above languages represented in Table 34, (ii) that the group Drake contacted were multi-lingual in all of the above languages represented in Table 34; or (iii) that a trade jargon existed which incorporated items from each of the languages represented in the Table 34. But nevertheless, it is entirely possible that two, rather than just one, language was represented by the group contacted by Drake, and also possible that the language group were concurrent speakers of a regional pre-contact trade jargon.

While induction errors and other types of errors seem overwhelmingly likely, especially for the items on Madox's list since his informants were repeating sound strings they had heard three years previously, there is unfortunately no evidence which clarifies *exactly how* the errors were made, or what the correct meanings are for the words and phrases that were heard. As such we can only speculate whether there is any substance to any of the relatively close matches in Table 34, and without corroborating evidence, the correspondences in Table 34 must remain purely speculative.

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<sup>36</sup>Although the status of the Kalapuyan forms as 'independent words' may merely reflect transcriptional conveniences, since as Zenk (p.c.) notes, Kalapuyan nouns are generally preceded by articles, which Frachtenberg transcribed as clitics, but which Melville Jacobs transcribed as prefixes.

**Table 34:** Summary of strongest correspondences

	<b>Fletcher/Madox</b>	<b>Translation</b>	<b>Correspondent</b>	<b>Translation</b>
1	hióh	a king	*hayu, hiyu, hyas	several, many, a group, a gathering (Chinuk Wawa) (Chinook Wawa Dictionary Project 2012:81)
			*h̄iya <sup>f</sup> *taiyū	cousin, friend (Alsea) (Frachtenberg 1917:252,293) chief (Chasta Costa, Alsea(?)) (SWORP 1:10)
2	tobáh	an herb	*taho *ta'ha	tobacco, planted in sand, mixed w/ kinnikinnick leaves (Coos) (SWORP 4:11) tobacco (Coos) (SWORP 6:9)
3	gnaáh	entreat to sing	*gú'nax	another (one) (Clackamas) (Jacobs 1974:n.b. 57, p. 123)
4	petáh	root...	*pdu?, *pdo?	potatoes, wapato <i>sagittaria latifolia</i> (Proto-Kalapuyan) (Chinook Wawa Dictionary Project 2012:244) (Berman 1990)
5	cheepe	bread	*caplíl, čaplíl	bread (Chinook Wawa Dictionary Project 2012:201)
6	huc̣hee kecharoh	sit down	*hats yí'qa tēí Lōwa'kats *háh-tsa *tcheróh	just continually there he sat (Coos) (Frachtenberg 1922a:425) basket (Kwalhioqua-Clatskanie) (SWORP 7:14) iron (Kwalhioqua) (SWORP 1:2)
7	nocharo mu	touch me not	*n̄ictcat!a'f mū *néht-sa-to	battlefield (Siuslaw) (Frachtenberg 1922b:564) to sit (Kwalhioqua) (SWORP 1:2)

Another major point against any linguistic claim that one of these Oregon languages was the contact group comes from the fact that none of the languages surveyed here exhibit close correspondences for *all* the items on the Fletcher/Madox list, though it should be reiterated that in some cases this could be because of inadequate documentation. The fact that some of the languages surveyed here show more and/or closer correspondences than other languages does make them more likely candidates, in a purely statistical sense, but not necessarily in any real sense, because once again, given the current evidence that we have, it is not possible to determine whether an ‘incorrect meaning induction’ has occurred in any given case, and if it has, what the nature of the error was.

At best, the correspondences in this paper could hypothetically be confirmed by corroborating physical evidence from an archaeological investigation. The correspondences by themselves, however, do not help clarify the linguistic origins of the Fletcher/Madox word list, nor by themselves support the Oregon hypothesis.

### Appendix: Orthographic Conversions

This chart represents conversions from orthographies used by Frachtenberg (1913), and by those language workers who used Powell (1880). If a symbol is not listed in this chart, the symbols have the same value in the old orthography as in Americanist, e.g. /b/, /d/, /p/, etc.

Frachtenberg and Powell	Americanist/IPA	Frachtenberg and Powell	Americanist/IPA
a	a	tc	č / tʃ
ă	a	c	š / ʃ
ä	æ(Powell 1880) or e	k <sup>37</sup>	palatal k
â	ɑ	x	ç or x
ā	a	q	k or q (or x for Powell (1880))
ē	e	ō	o
ê	ɛ	ū	u
E	ə(?)	ŭ	ʊ
î	i	û	as in English ‘but’ ʌ(?)
ī	i	L	λ
‘	<sup>h</sup> (aspiration)	n	nasalization
!	’ (glottalization)	ñ	velar nasal (‘engma’)
˘	stressed syllable	Ũ	interrogative intonation
ts	c / ts		

<sup>37</sup>The ‘˘’ symbol following a consonant may indicate palatalization in general.

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