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Chukchi Women's Language: A Historical-Comparative Perspective

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Abstract. Chukchi women's language differs from the Chukchi men's variety in a number of synchronically unpredictable ways, particularly with respect to an alternation between *r* and *c/č*. This article shows that this alternation is nonarbitrary, originating from the asymmetric collapse of three cognate sets into two, such that in men's Chukchi **r* and **d* > *r* and **c* > *č*, whereas in women's Chukchi **r* > *r* and **d* and **c* > *c*. Arguments are made that the historical motivation for this can be found in a process of dialect mixing whereby Chukchi women adopted features of nonnative Chukchi accent as a social marker.

1. Introduction. Most, probably all, languages mark some kinds of social categories with linguistic differences. A common social category to be so marked is *gender* in the anthropological sense related to sex, rather than in the linguistic sense related to noun class. Gender differences in speech often involve prosodic differences (such as intonation or pitch), the phonetic realization of certain phonemes, or differences in lexical choice (e.g., Günthner 1996). However, there are a number of languages that show a much greater degree of difference. Chukchi, one such language, has two speech variants, a men's variety and a women's variety, characterized by differences in the phonological inventory and in the phonological system; neither of the speech varieties is predictable synchronically from the other. There are also minor morphological and lexical differences (see sections 2.2 and 2.3). Because the phonological correspondences between women's and men's Chukchi are synchronically unpredictable, but the varieties are nevertheless mutually intelligible, it makes sense to talk of these varieties as *gender dialects*. Gender dialects are a rare but geographically dispersed phenomenon, attested in diverse languages such as Gros Ventre (Flannery 1946; Taylor 1982), Island Carib (Hoff 1994), Koasati (Haas 1944; this is debated, see also Kimball [1987, 1990] and Saville-Troike [1988]), Pirahā (Everett 1986:317), Yana (Sapir 1929), and Yanyuwa (Bradley 1988). This list includes only languages in which men's and women's speech are characterized by systematic morphological or phonological differences. If languages were included in which gender differences were indicated by patterns of lexical choice, selection of register, or exaggeration of gender-linked prosodic features, then the list would have to be vastly expanded.

The existence of gender dialects in Chukchi has been recognized by linguists for at least a century, but little information about the situation has previously

been available. This article presents a fieldwork-based grammatical description of the differences between women's and men's Chukchi, accompanied by a historical-comparative hypothesis about the origins of the gender-dialect distinction. The fieldwork was carried out in the Anadyr' and Beringovski districts of the province of Chukotka with Chukchis who identify themselves as *telqepəl'ət* 'Telqep Chukchi', a regional group speaking a variety of Chukchi that diverges somewhat from the "standard" variety. Telqep Chukchi is described in detail in Dunn (1999).

The Chukchi are an indigenous group inhabiting the extreme northeast of the Russian Federation. From the northeast tip of the Eurasian continent, their geographical range extends west to the mouth of the Kolyma River and south to the top of the Kamchatkan Peninsula. In some areas, they live together with or have as neighbors speakers of Even, Yukaghir, and Asiatic Eskimo languages, as well as other Koryako-Chukotian dialects, such as Koryak, Alutor, and Kerek. Archaeological evidence ascribes the beginning of Chukchi reindeer herding to innovations in the north of the region in the fifteenth century. Prior to this, the ancestors of the Koryako-Chukotian-speaking peoples lived as hunter-gatherers along the rivers and coasts. Since the introduction of reindeer herding, population density has dramatically increased, and the Chukchi have expanded their range considerably to the west and south. It is likely that they have absorbed speakers of other languages (Koryako-Chukotian or other) during this expansion.

The twentieth century has seen the spread of the Russian language throughout this area with a corresponding decline in the use of indigenous languages. The number of ethnic Chukchis is relatively stable at about twelve to fifteen thousand, but the percentage of those acquiring Chukchi as their first language has fallen sharply in the last two decades.¹ The overall population of the Chukchi Autonomous Okrug, an administrative division largely congruent with the lands traditionally inhabited by Chukchis, is currently about ninety thousand. This number has been dropping as mostly non-Chukchi citizens flee the difficult economic and social conditions of the region.

2. Description.

2.1. Phonological distinctions. The consonant inventory of Chukchi is given in table 1.

Table 1. Chukchi Consonant Inventory

	BILABIAL	ALVEOLAR	PALATAL	VELAR	UVULAR	GLOTTAL
STOP	<i>p</i>	<i>t</i>		<i>k</i>	<i>q</i>	?
NASAL	<i>m</i>	<i>n</i>		<i>ŋ</i>		
APPROXIMANT	<i>w</i>	<i>r</i>	<i>j</i>		<i>γ</i>	
FRICATIVE/AFFRICATE		<i>c/s/(č)</i>	<i>l</i>			

The men's and women's dialects of Chukchi have different phonetic realizations of the alveolar fricative/affricate phoneme. In the women's variety of Telqep Chukchi, this phoneme has the realization shown in (1).

(1) $c \rightarrow \begin{cases} [t] / _ \# \\ [s] / _ q \\ [c] \text{ elsewhere} \end{cases}$

In the men's variety of Telqep Chukchi, the corresponding phoneme is usually pronounced as an alveolar fricative, but sometimes, apparently with free variation, it can also be pronounced as a palato-alveolar affricate, thus being realized as in (2).

(2) $s \rightarrow [s] \sim [\check{c}]$

The $[\check{c}]$ allophone may be used in an attempt to produce a more standard pronunciation. For standard (men's) Chukchi, Skorik (1961:33) describes this phoneme as a palato-alveolar affricate with an alveolar fricative allophone, as in (3).

(3) $\check{c} \rightarrow \begin{cases} [s] / _ q \\ [\check{c}] \text{ elsewhere}^2 \end{cases}$

In most other dialects of Koryako-Chukotian, the corresponding phoneme is also either \check{c} or s . Skorik (1961:33) does not mention any allophony for women's Chukchi, but he says that the equivalent of men's \check{c} is pronounced [c].

Not all occurrences of [c] in women's speech correspond to [s] in men's speech, however. In some cases, men's speech has [r] where women's has [c]. There are thus three types of correspondences involving r and c in the two gender varieties: (1) $r : r$, as in men's and women's *jaranə* 'house'; (2) $r : c$, as in men's *maraw* versus women's *macaw* 'fight, war'; and (3) $s : c$, as in men's *s'esen* versus women's *c'ecen* 'cold, frost'. Examples of all three types are pervasive in the Chukchi lexicon, so that there is no way of predicting synchronically which correspondence set any given r or c/s would belong to in either dialect. Some typical examples of words showing the alternation are given in table 2. Moreover, there are other contexts where there is no contrast; women's c corresponds to men's s , and women's r corresponds to men's r , as shown in table 3.

Table 2. Chukchi Words with Correspondences between Women's *c* and Men's *r*

FEMALE SPEAKER	MALE SPEAKER	
<i>mcen</i>	<i>mren</i>	'mosquito'
<i>ceqokalyən</i>	<i>reqokalyən</i>	'polar fox'
<i>pancat</i>	<i>panrat</i>	'leg hide'

Table 3. Chukchi Women's and Men's Correspondences *c:s* and *r:r*

FEMALE SPEAKER	MALE SPEAKER	
<i>cajkok</i>	<i>sajkok</i>	'teapot'
<i>utkuc?ən</i>	<i>utkus?ən</i>	'trap'
<i>raytəy?e</i>	<i>raytəy?e</i>	'she went home'
<i>qorəŋə</i>	<i>qorəŋə</i>	'reindeer'

The two correspondence sets in table 3 are found throughout the native lexicon. However, the alternation between *c* and *r* is never encountered in loanwords, a fact indicating that its origin is to be found in diachronic, rather than synchronic, phenomena. (Possible diachronic accounts are proposed and explored in section 4.)

2.2. Morphological variation. In his brief discussion of the differences between women's and men's pronunciation, Bogoras (1922:665) mentions that "the men, particularly of the Kolyma district, drop intervocalic consonants, principally *n* and *t*" (1922:665). This consonant elision is reported to function in the same manner as a general Chukchi phonological rule that allows sporadic dropping of intervocalic approximants (always accompanied by vowel assimilation, that is, $V_1 C_{APPROX} V_2 \rightarrow V_2 V_2$). Bogoras further adds that maritime Chukchi men use both the shorter forms³ and the longer ones (without dropping), whereas women only use the longer ones.

Telqep Chukchi does not pattern with either of these groups. I have not observed any difference in the elision of intervocalic glides: both men and women apply the rule sporadically, more often with some words than with others. Dropping of intervocalic *t* has not been observed. However, elderly male speakers sporadically drop intervocalic *n*, as shown in (4)–(7).

(4) *ənqaat* < *ənqenat*

ənqena-t

DEM-3PL

'these'

(5) *niwqeet* < *niwqinet*

n-iw-qine-t

HAB-say-HAB-3PL

'they say'

(6) *n?əwalomərkaat* < *n?əwalomərkənat*

n?ə-walom-ərkəna-t

SUBJ-listen-PROG-3PL

'they would listen'

(7) *yamarawlaat* < *yamarawlenat*
ya-maraw-lena-t
 PERF-fight-PERF-3PL
 'they fought'

All examples produced by these speakers involved the third person plural suffix. There is reference to the truncation of *-qenat* to *-qaat* by men in Bogoras (1910: 5), which may be the same phenomenon.

2.3. Lexical differences. Telqep Chukchi has a gender-based lexical distinction in the words for 'yes': *ii* for women, and *eej* for men. This distinction occurs only in southern Chukchi, although it is interesting to note that the same distinction is found in Palana Koryak (King p.c. 1996) and possibly in some of the other Koryako-Chukotian dialects further to the south (but not in Chavchuv or "Standard" Koryak). In northern Chukchi, men and women both say *ii*.

3. Background.

3.1. Previous accounts. Two grammars of Chukchi have been published. *Chukchee* (Bogoras 1922) is the work of an ethnographer and linguist who began fieldwork when exiled to Chukotka for political activities in prerevolutionary Russia. *Grammatika čukotskogo jazyka* [A Grammar of Chukchi] (Skorik 1961, 1977) is a two-volume reference grammar based on the northeastern variety of Chukchi and intended as a pedagogical "standard" grammar for the Soviet Chukchi intelligentsia. These two grammatical descriptions of Chukchi explicitly mention a women's dialect only briefly, devoting fewer than three pages of text to the matter and providing only five single-word examples (Bogoras 1922:666; Skorik 1961:33). Bogoras (1910:144–45, 1900:121–26) additionally published some examples of "women's speech." In the acknowledgments to the two volumes of Skorik's (1961:14, 1977:7) grammar, twelve Chukchis are thanked by name; all are male. Bogoras published two pages of "women's Chukchi" in his *Chukchee Mythology* (1910:144–45) and another five in his *Materialy po izučeniju čukotskogo jazyka* [Materials for the Study of Chukchi] (Bogoras 1900:121–26; discussed in Bouda 1953).

Bogoras's grammar (1922:665–66) includes a section entitled "Pronunciation of Men and Women," in which he states:

The pronunciation of the women differs from that of the men. Women generally substitute *c* for *č* and *r*, particularly after weak vowels. They also substitute *cc* for *rk* and *čh*. The sounds *č* and *r* are quite frequent; so that the speech of women, with its ever-recurring *c*, sounds quite peculiar, and is not easily understood by an inexperienced ear. Women are quite able to pronounce *č* and *r*, and when quoting the words of a man—as, for instance, in tales—use these sounds. In ordinary conversation, however, the pronunciation of men is considered as unbecoming to a woman. [Bogoras 1922:665]

He gives four single-word examples illustrating these correspondences and then provides another paragraph about the differential use of intervocalic consonant dropping by men and women (see section 2.2).

Skorik's statements about women's Chukchi are no more extensive and no more accurate. In a paragraph at the end of his extended discussion of male speakers' phonology, he notes:

Apart from the consonants listed, there is also in Chukchi an affricate, similar to Russian *c*, but somewhat softened [i.e., palatalized], that is used in the women's pronunciation only. This affricate usually corresponds to the consonants *r* and *ç* of male pronunciation; moreover, it assimilates a following consonant *k*—for example, the male pronunciations—*reqərkən?* 'what is she/he doing?' [and] *rarkə* 'walrus' versus the female pronunciations *ceqəccən?* and *cəcca*. [Skorik 1961:33, my translation and transliteration]

The inaccuracies of these descriptions of Chukchi women's language are issues for the sociology and politics of science. Although I do conclude, on the basis of the phonological analysis in section 4.3, that men's Chukchi is the more conservative and that women's Chukchi developed more recently as a result of dialect mixing, there is nothing in a synchronic analysis of Chukchi to afford men's Chukchi any kind of priority—neither form can be predicted on the basis of the other. Language encyclopedias compound the inaccuracies of these sketchy descriptions through abbreviation. For example, Campbell (1991) claims that the ethnonym *ləy'orawetl'at* 'real person, Chukchi' "seems to have fallen out of use, as has the former specific 'women's language' of Chukchi" (1991:328). Neither of these claims is true.

The main phonological difference between men's and women's Chukchi is, indeed, the *r* ~ *c* alternation. The descriptions of this alternation given in Bogoras (1922) and Skorik (1961) either claim that the difference is merely substitution of one pronunciation for another or recognize the correspondence as such, but treat it as an irregularity, since the "substitution" does not always occur. In fact, the correspondences between women's and men's Chukchi are synchronically unpredictable, but do not defy the formulation of a coherent account, such as that attempted in section 4.3.

3.2. Linguistic classification. Chukchi has been classified as part of the Chukotko-Kamchatkan family, found in the Paleosiberian linguistic area (see, e.g., Fortescue 1998). Within this family, Chukchi is included, along with Koryak, Alutor, and Kerek, in the Koryako-Chukotian branch; Itelmen is the lone surviving member of the other branch, Kamchatkan. The genetic unity of this family is controversial; Comrie (1980:120) presents evidence to support the hypothesis of genetic relationship between Koryako-Chukotian and Kamchadal at a distant stage of linguistic prehistory, but indicates that detailed reconstruction of Proto-Chukotko-Kamchatkan is almost certainly impossible. In contrast, it is clear from the large number of cognates that the various Koryako-

Chukotian languages are very closely related. Muravyova's (1979) unpublished dissertation on comparative Chukchi, Chavchuv Koryak, and Alutor morphology contains almost 3,000 reconstructions of Proto-Koryako-Chukotian words and morphemes. Other attempts to classify the Koryako-Chukotian languages have been impressionistic, generally reflecting cultural and even administrative divisions, rather than following linguistic criteria. There are, however, a number of Koryako-Chukotian varieties not covered by Muravyova's (1979) work. All of the Koryako-Chukotian languages are very similar to each other, and, on purely linguistic grounds, would probably be considered to be a chain of dialects (Comrie 1981:240). Likewise, it is not clear to what extent contemporary divisions between the speakers of Koryako-Chukotian languages reflect traditionally recognized ethnic or linguistic distinctions. According to Bogoras (1904-9: 16), some of the people inhabiting territories between those of Chukchi and Koryak speakers were unable to state which group they belonged to, or which language they were speaking. Note, however, that this is probably no longer the case, since the twentieth-century administrative demand that each citizen choose a single named ethnicity (Russian *nacional'nost'*) from a standard list is generally accepted as representing the true state of affairs.

For the purposes of linguistic (rather than political or ethnographic) classification, the "Koryako-Chukotian languages" are a fairly arbitrary selection of Koryako-Chukotian dialects. The subgrouping of the so-called dialects implied by their names should not be assumed to be accurate. For example, although treated as a dialect of "standard" Koryak, the language of the Palana Koryaks (Žukova 1980) is very similar to Alutor, and arguments could be made that it is genetically closer to Chukchi than to Koryak. Linguistic comparison shows that the separation of the languages or dialects of the Koryako-Chukotian group is relatively recent and that subgrouping is not terribly clear. Matters are confused by the nonnative names given to the dialects; *Koryak* is used interchangeably for the standardized variety of Koryak (also called "Chavchuv Koryak"), and, along with geographical terms, as part of the names of a "residual category" of Koryako-Chukotian languages and varieties that do not have their own names (e.g., Apuka Koryak, Itkana Koryak, Kamen Koryak, Paren Koryak, Karagin Koryak, and Palana Koryak).⁴

Fortescue (p.c. 1999) has established three Chukchi dialect groups: northeastern, southern and northwestern. Regional variation within Chukchi is slight, and the provenance of Chukchi data is generally not given in published materials. Except for the brief characterizations mentioned in section 3.1, there are no published sources for the women's variety of Chukchi. Since it is important to exclude from the present study effects due to regional variation, all of the Chukchi examples are from my own field notes representing the Telqep variety of Chukchi spoken in the villages of Tavajvaam, Alkatvaam, and Majnypilgyno (which is basically the same as the Berengovski subdivision of Fortescue's proposed southern group). There is no evidence that the women's

and men's dialects in different regions of Chukotka have different features, although this question has not been explored systematically for the present study.

3.3. Use of the gender dialects. The Soviet literacy campaigns were astonishingly effective among Russian speakers and were also extended to many of the minority languages of the Soviet Union, most of which had previously been unwritten. However, in the case of Chukchi, language standardization was based entirely on the men's dialect. The women's language was not recognized in language programs, and the "standard" orthography, designed in the 1930s, represents only the men's dialect. Chukchi teachers use the men's dialect as a standard, and Chukchi-language radio and television are generally broadcast in the men's dialect. Most female announcers use the men's dialect on air, but all use the women's dialect in private. Chukchi women outside these professional spheres always use the women's dialect. Although Chukchi-speaking men are also bidialectal, they are rarely called upon to produce women's dialect, and, for men, traditional patterns of use of their gender dialect have not changed.

The two gender dialects have been treated unevenly by linguists and anthropologists, and I believe that this has compromised the quality of linguistic description. The invisibility of Chukchi women's language and culture to modern science has been perpetuated by educators and planners, and the prejudice that has led to such neglect of women's speech has been absorbed by many educated Chukchis in contemporary society. Discourse about preservation and revival of linguistic heritage is framed entirely in terms of the men's language. This is clearly a problem if serious attempts are to be made to revitalize the language, since women play a central role in language transmission.

In this more-or-less traditional society, a speaker's sex generally determines the gender dialect that he or she uses. There is no absolute prohibition against using the dialect of the other sex. Speech can be quoted in the gender dialect appropriate to the person quoted, and examples can be given to correct the speech of someone of the opposite sex if the wrong gender dialect is accidentally used. In the traditional society, shamanistic power was often linked with partial or complete change of gender, and, as a highly salient social indicator of gender, adoption of the opposite gender dialect was frequent among shamans and their patients (Bogoras 1904-9:448-57). In stories, gender dialect is treated as one of many distinctive features of a quoted individual's pronunciation that can be imitated or ignored according to the storyteller's preference. Storytellers who adopt the appropriate gender dialect in quoting characters of the opposite sex will generally imitate other features of their speech too. Thus, a man quoting the speech of a female dog in a folktale might use both the women's dialect and a high-pitch singsong intonation evoking the yelping of a dog.

Haas (1944:147) presents the typology of gender dialects given in table 4. In

these terms, Chukchi may be classified as having speaker-dependent gender dialects and belonging to type I. Note that in speaker-dependent gender dialects, the speaker is called upon to produce only a single dialect (age-related changes, mimicry, etc., aside), whereas in type II or type III gender dialects, speakers must routinely produce at least two different language varieties. For this reason, I hypothesize that gender dialects in the strict sense (that is, gender dialects involving differences in the phonological or grammatical system, such as in Chukchi) are far more likely to belong to Haas's type I rather than to her type II or type III.

Table 4. Haas's Typology of Gender Dialects

	SPEAKER	HEARER
SPEAKER-DEPENDENT (Haas's type I)	men's women's	either either
HEARER-DEPENDENT (Haas's type II)	either either	men's women's
SPEAKER-HEARER SPECIFIC (Haas's type III)	men's men's women's women's	men's women's men's women's

SOURCE: Haas (1944:147).

4. Possible explanations.

4.1. Muravyova's *d proposal. Selected cognate sets, showing that a set of Proto-Koryako-Chukotian coronals can be clearly reconstructed, are given in table 5.⁵ Chukchi words with the *c* ~ *r* alternation are not included in this set, since they pattern differently, as illustrated in table 6. The lack of published information about Kerek makes it difficult to produce full cognate sets.⁶ However, partial cognate sets (not reproduced here) show that **j* and **r* > *j*, **c* > *č*, and **t* > *t* or *č* (the latter palatalization conditioned by a following *i* or *j*).

Apart from these correspondences, there is yet another set, shown in table 6. Although none of the phonemes in the various contemporary reflexes of the Koryako-Chukotian languages differ from the reflexes of the Proto-Koryako-Chukotian coronals shown in table 5, their distribution shows that Proto-Koryako-Chukotian includes another consonant.

Table 5. The Proto-Koryako-Chukotian Coronals *t, *r, *c, *j

	AL	KOPL	CHW	CHM	KOCH	KE
*j						
	jiljil	jelə-lŋən	jiləjil	jilajil	jiljil	'tongue'
*r						
	ra-	ra-	ra-	ra-	ja-	ja-
	raγ-	rew-, rewəm-	rewəm-	rewəm-	jewjew	jawjaw
	mur-	mur-	mur-	mur-	muj	maj-
*t						
	tannətan	tannətan	tannətan	tannətan	tannətan	tannətan
	ktipa-	kteppa	kətipe-	kətipe-	kətep	kəcipa-
*c						
	sakəyet	cakəyet	cakəyet	sakəyet	cakəyet	sakəyet
	ksimma	kcimme	kəcime-	kəsime-	kəcim	kəsim

SOURCES: For Alutor (AL), Muravyova (1979), Stebnickij (1994), and Žukova (1968a); for Palana Koryak (KOPL), Žukova (1980, 1988); for Chavchuv or "Standard" Koryak (KOCH), Stebnickij (1994) and Žukova (1968b, 1980, 1988); and for Kerek (KE), Skorik (1968b). Examples for men's Chukchi (CHM) and women's Chukchi (CHW) are from the author's field notes.

Table 6. Chukchi Cognates with Women's c Corresponding to Men's r

AL	KOPL	CHW	CHM	KOCH	KE
ta-	te-	ce-	re-	je-	ja-
taq-	teq-	ceq-	req-	jeq-	jaq-
tətka	tətka	cəccə	rərkə	jejka	ika-ŋa
tiquk	tiquk	ceqoka-lyən	reqoka-lyən	jiquk	
mtan	mtenne	mcen	mren	məjen	'mosquito'
panta-	panta-	panca-	panra-	panja-	'leg hide'

SOURCES: For Alutor (AL), Muravyova (1979), Stebnickij (1994), and Žukova (1968a); for Palana Koryak (KOPL), Žukova (1980, 1988); for Chavchuv or "Standard" Koryak (KOCH), Stebnickij (1994) and Žukova (1968b, 1980, 1988); and for Kerek (KE), Skorik (1968b). Examples for men's Chukchi (CHM) and women's Chukchi (CHW) are from the author's field notes.

Muravyova (1979) demonstrates the existence of this protophoneme (which she calls *d, a convention that I will follow) for the Koryako-Chukotian family, but did not include women's Chukchi in her analysis. The summary of these cognate sets given in table 7 shows that there is a split in the Koryako-Chukotian languages between those where *d has the modern reflexes r, as in men's Chukchi, or j (from the phonological collapse of *d and *r, as in Chavchuv Koryak and Kerek), and those where it has the modern reflex t, as in Alutor and Palana Koryak.

Thus, the phonological difference between men's and women's Chukchi can be shown to be linked to the different synchronic reflexes of the Proto-Koryako-

Chukotian phoneme **d*. Alutor and Palana Koryak have a collapse of **d* and **t*; Chavchuv Koryak, Kerek, and men's Chukchi have a collapse of **d* and **r*. Women's Chukchi shows a collapse of **d* and **c*. Mechanisms by which this could have come about are proposed in section 4.3. The modern phoneme *c* occurs somewhat indiscriminately amongst the reflexes of the Proto-Koryako-Chukotian coronals. This is due to a number of palatalization phenomena, which are discussed in section 4.2.

Table 7. Summary of Koryako-Chukotian Cognate Sets

	AL	KOPL	CHW	CHM	KOCH	KE
<i>*t</i>	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	<i>t/č</i>
<i>*d</i>	<i>t</i>	<i>t</i>	<i>c</i>	<i>r</i>	<i>j/č</i>	<i>j</i>
<i>*r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>j/č</i>	<i>j</i>
<i>*c</i>	<i>s</i>	<i>c</i>	<i>c</i>	<i>s</i>	<i>č</i>	<i>č</i>
<i>*j</i>	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	<i>Ø/j</i>

NOTE: AL = Alutor; KOPL = Palana Koryak; CHW = women's Chukchi; CHM = men's Chukchi; KOCH = Chavchuv Koryak; and KE = Kerek.

4.2. Palatalization. A number of factors influence the *c* ~ *r* alternation found in the Chukchi women's and men's reflexes of the Proto-Koryako-Chukotian phoneme **d*. Most of these come under the general heading "palatalization" and have the common feature that, as a result of these processes, cognate words in one or more of the neighboring languages of Chukchi regularly have *c*, *č*, or *t'* corresponding to Chukchi words with the *c* ~ *r* alternation. The relevant factors are:

- The palatalized Proto-Koryako-Chukotian phoneme **d'* (discussed in section 4.2.1), as realized in men's Chukchi *roqər*, women's Chukchi *coqər*, and Palana Koryak *coqər* 'a species of reindeer parasite'
- Phonologically conditioned palatalization (discussed in section 4.2.2), as in men's Chukchi *mət-ra-*, women's Chukchi *mət-ca-*, and Kerek *məča-* (from **mət-ja-* {1PL + FUT!}), and as in men's Chukchi *riquk*, women's Chukchi *ciquk*, and Palana Koryak *t'iquk* 'polar fox'
- The palatal reflexes of **r* and **d* in Chavchuv Koryak (discussed in section 4.2.3), as illustrated by men's Chukchi *ir'ən*, women's Chukchi *ic'ən*, and Chavchuv Koryak *ic'ən* 'clothing'

None of these correspond identically to the Chukchi gender dialect distinction, but any or all of them could support the development of the gender-dialect division if it were initiated through some other mechanism (for which see section 4.3). Note also, that any tendency for nonphonemic palatalization of *t* could have had some influence on the development of the Chukchi women's dialect if present in a substrate language, as suggested by the nongenetic-inheritance hypothesis set out in section 4.3.2.

4.2.1. The phoneme **d^j*. Muravyova's (1979) reconstruction of Proto-Koryako-Chukotian includes a protophoneme **d^j*, a palatalized form of **d*. This phoneme apparently had a very low functional load, as it occurs in Muravyova's comparative dictionary only three times (1979, appendix:19, 23, 25). Two clear examples are the name for a species of reindeer parasite and a verb stem meaning variously 'destroy' (Chukchi) or 'be destroyed' (Koryak and Alutor). These cognate sets are shown in table 8.

Table 8. Cognate Sets for Proto-Koryak-Chukotian **d^j*

PKOCH	AL	KOPL	CHW	CHM	KOCH	
<i>*d^j</i>	<i>s</i>	<i>c</i>	<i>c</i>	<i>r</i>	<i>j</i>	
<i>*d^joqər(a)</i>	<i>suqər/</i> <i>suqra-</i>	<i>coqər/</i> <i>coqra-</i>	<i>coqər/</i> <i>c[?]ora-</i>	<i>roqər/</i> <i>r[?]ora-</i>	<i>joqj(a)</i>	'(a species of) reindeer parasite'
<i>*d^jawwaca</i>	<i>sawwasa</i>			<i>rakwaca</i>	<i>jawwaca</i>	'destroy, be destroyed'

NOTE: AL = Alutor; KOPL = Palana Koryak; PKOCH = Proto-Koryak-Chukotian; CHW = women's Chukchi; CHM = men's Chukchi; and KOCH = Chavchuv Koryak.

SOURCES: Muravyova (1979), Žukova (1980), and Dunn (1999).

The only other example of **d^j* in the dictionary is **(c)yid^jkəc*, Koryak or Alutor 'lose oneself' or Chukchi 'lose one's mind', with the forms: Alutor (*s*)*yickəs*, (*s*)*yit^jkəs*;⁸ Chukchi *yirkəc*; and Chavchuv Koryak (*c*)*yijkəc*. This proposed cognate set is not convincing, as Palana Koryak and Alutor regularly palatalize the segment *t* before *k*, and they also palatalize *t* in the environment of *i*. Both of these conditions are fulfilled by this word, so this correspondence set could illustrate **d* rather than **d^j*.

4.2.2. Phonologically conditioned palatalization. Certain languages in the Koryako-Chukotian family have a number of conditioned palatalizations, mostly affecting coronal consonants. This is described in greatest detail for Palana Koryak (Žukova 1980); it is unclear how similar this is to the Alutor phenomena sketched in Žukova (1968a). From the descriptions available, it is uncertain to what extent palatalized consonants should be considered phonemic.

The regular palatalizations described for Palana Koryak (Žukova 1980: 23–26) include the palatalization before an *i* of the apical and labial consonants shown in (8).⁹

(8) *p, t, m, n, r → [+PALATALIZED] / _ i*

Note that palatalized *t* is *č*. Apparently, this environment does not affect the consonants *w, v*, and *l*.

The consonant *t* is particularly susceptible to palatalization; it is also

palatalized following *i* (the only progressive palatalization in the language), as well as preceding the velar stop *k*, as indicated in (9).

$$(9) \quad t \rightarrow [+PALATALIZED] / \left\{ \begin{array}{l} i _ \\ _ k \end{array} \right.$$

Kerek has a productive phonological rule in which *t* → č / *__ i, j*. Thus, the Kerek verb *qulilhat-ək* {cry out-INF} has the aorist *qulilhač-i* 'she or he cried out', and Kerek *məčalajun* 'let's walk' has the underlying form *mət-ja-laju-ŋ* {1PL-FUT-walk-FUT}.

4.2.3. Koryak *d and *r. As shown in table 9, Chavchuv Koryak presents instances of correspondence between č, women's Chukchi *c*, and men's Chukchi *r*. However, Muravyova (1979:53) shows that these instances of č in Chavchuv Koryak are the result of a regular historical process, shown in (10).

$$(10) \quad *d, *r \rightarrow \left\{ \begin{array}{l} č / _ v, w, γ, c, ?, ŋ \\ j / \text{elsewhere} \end{array} \right.$$

Table 9. Cognate Sets for *d with Chavchuv Koryak c

WOMEN'S CHUKCHI	MEN'S CHUKCHI	CHAVCHUV KORYAK	
<i>c</i>	<i>r</i>	č	
<i>ic'ən</i>	<i>ir'ən</i>	<i>ič'ən</i>	'clothing'
<i>keccir¹⁰</i>	<i>kerwir</i>	<i>kečwəj</i>	'hair'
<i>əcc-</i>	<i>əry-</i>	<i>əčy-</i>	'3PL (Chukchi) or 3DU (Koryak)'

SOURCES: Muravyova (1979:52) and Dunn (1999).

4.3. Alternative hypotheses. As shown by the comparative data presented in section 4.1, the core feature of the gender-dialect distinction is a differential realization of the reflexes of Proto-Koryako-Chukotian *d. It seems highly likely that this dialect distinction has come about as a result of substrate influences from another Koryako-Chukotian language or dialect that, for some reason, influenced the language of only one sex. However, this kind of differential collapse must have had some kind of external motivation. Phonetic drift is enough to cause a collapse of phonemes in a language, but it is difficult to see how or why there would be two different collapses within a single speech community at the same time.

The most likely origin of the gender-dialect distinction involves regular processes of linguistic change in the form of a merger of two dialects that had previously diverged under conditions of geographical separation. The ethnographic situation of the Koryak-Chukchi cultures provides scenarios in which this could have happened. For the reconstructable past, the Chukchi and

Koryak nomadic cultures have been patrilocal (Bogoras 1904–9:579–88; Jochelson 1908:741–44); after marriage, women travel to live at the encampments of their husbands. There has also been assimilation of Koryaks by Chukchis during the expansion of Chukchi grazing grounds since the seventeenth century. Thus, many Koryak women have married into Chukchi society. The Chukchi and Koryak dialects (including Alutor and Kerek) are structurally very similar. Most phonological differences between these languages involve simple transformations, such as changing a lateral sonorant to a lateral fricative, or collapsing *w* and *v*. A second-language speaker of Chukchi from a Koryak background is unlikely to have much difficulty in adapting. In nomadic Chukchi society, where male and female social roles are separate, it is possible to imagine a scenario in which the characteristics of the Koryak-accented Chukchi of some women became reinforced as a social marker of femininity.

One aspect of Koryak-accented Chukchi that could be expected to be particularly divergent from native Chukchi is the pronunciation of words with reflexes of **d*, since **d* in Chukchi has collapsed differently than in all of the other Koryako-Chukotian languages. This provides a sociolinguistically plausible mechanism for the origin of the differential realizations of **d* in men's and women's Chukchi, but the proposed path of historical linguistic development is problematic. Although **d* has collapsed with some other phoneme in all contemporary Koryako-Chukotian languages, there is no language in our sample, apart from women's Chukchi, that shows the collapse **d* > *c*—the others show either **d* > *r* or **d* > *t*. Two hypotheses will be put forth to account for this. The first is that women's Chukchi preserves a phonological system inherited directly from the substrate; the second is that more complex factors allowed women's Chukchi to innovate a new correspondence, indirectly leading to the appearance of a historical process **d* > *c* where no such process actually occurred.

4.3.1. The hypothesis of direct substrate influence. The correspondence **d* : *c* in women's Chukchi could easily be accounted for if *c* had been taken over directly from the substrate. However, the evidence for this scenario is weak, as there are no obvious candidates among the Koryako-Chukotian languages for this substrate. A promising line of inquiry involves the Itkana and Paren dialects of Koryak, which, according to Muravyova (1979:34), have *s* and *c* reflexes of **d*, although she warns that there are insufficient materials to make a definitive statement. Alex King (p.c. 1999) informs me that in Paren Koryak the reflex of **r* is *dz*, and Fortescue (1998:44) notes that the Karagin variety of Alutor has a regular devoiced reflex of **r*, something like *f*. Although I consider it unlikely that there is an as yet unknown Koryak dialect that provided the linguistic substrate for the Chukchi women's dialect, all the pieces of information gathered above suggest that there may be more sources of dialect interference than I have been able to investigate.

There is also the possibility that the substrate has been fully assimilated, in which case it is unlikely that much will ever be uncovered about it. Because of the methodological dubiousness of inventing extinct, unattested languages as motivating factors for linguistic change, this hypothesis would require some other external evidence of the existence of such a language before it could be validated.¹¹

The main point that needs to be made is that, of all of the Koryako-Chukotian languages for which adequate comparative materials are available, we can be sure that, in terms of the mechanism proposed here, none of them are suitable candidates for the substrate of women's Chukchi.

The other possibility for a substrate would be an unrelated language. Likely candidates include Yukaghir and the Eskimo languages. In Old Yukaghir, there was a pronunciation contrast between women's *f* and men's *c* (Jochelson 1898: 154), but there is no suggestion that these were anything more than different pronunciations of the same phoneme. This contrast is evidence that gender-based pronunciation distinctions might be an areal feature (and thus relevant to the contemporary distinction between Chukchi women's *c* and men's *s/č*), but this does not suggest any hypothesis for why Chukchi would have an asymmetric collapse of **d*, with one phoneme for women and another for men.

Fortescue (1998:68) suggests that the appearance of *c* in women's Chukchi in place of *r* could be related to a shift of *r > c* spreading from Eskimo. While there are good sociolinguistic grounds for Eskimo substrate influence on Chukchi (since Chukchis have been assimilating Eskimos for many centuries), and there is considerable evidence of Eskimo women marrying into Chukchi communities, it is difficult to see how Eskimo influence could provide motivation for a sound change that only acts upon *r* where it is a reflex of **d*, and not where it is a reflex of **r*. The necessary condition for such a partial change would be that the Eskimo influence upon Proto-Chukchi occurred at a time before Chukchi **d* had merged with **r* and that the sound change only acted on the reflex of **d*, and not on **r*.¹²

4.3.2. The hypothesis of nongenetic inheritance. Another, perhaps more satisfactory, account involves the postulation of an unusual mechanism: that the introduction of the **d > c* sound change into Chukchi is not a regular phonological process; that Chukchi women at some point in history adopted their own naive analysis of characteristic features of nonnative Chukchi as spoken by Koryaks (or by Alutors or Kereks) as a social marker of femininity (see section 4.3).

The phonological differences between men's and women's Chukchi involve two parameters; apart from the systematic phonological differences between the realizations of the reflexes of **d*, there are also phonetic differences between the allophonic realizations of the reflexes of **c*. We do not know what the pronunciation of *c* was in Chukchi while the women's dialect distinction was

coming into being, and the reflexes of this phoneme today are particularly varied. It is not unreasonable to suppose that this pronunciation is older than the systematic difference between men's and women's phonologies. The pronunciation difference between men's and women's reflexes of *c is assumed in the initial stage in the development of the distinct gender dialects.

Prior to the existence of a specific women's Chukchi dialect, Chukchi phonology would have followed the system of the current men's phonology. Thus, there would have been contrasting consonants *r* < **d* and *t* < **t*, as there are today in men's Chukchi, in forms such as *mren* 'mosquito' and *γto* 'second-person singular absolute'.

At some point, there was contrasting input from women who were not native speakers of Chukchi, whose first language was another dialect or dialects that had *t* < **d*, so that the consonants in the word for 'mosquito' and the second-person singular absolute pronoun were the same, that is, *mten* and *γto*, respectively. This is a feature of Alutor and Palana Koryak.

This nonnative Chukchi style spoken by some women came to be treated as a social marker of femininity. As this pronunciation became established among native-speaker women (either adults, or women growing up with exposure to both styles), a reanalysis would have occurred, such that Chukchi women analyzed words such as *mten*, which have *r* in men's Chukchi, as being *mcen* in Chukchi phonology, but they must not have done the corresponding reanalysis of the *t* in words such as *γto*.

Assuming that the phonological change leading to the establishment of a separate women's variety of Chukchi was the result of Chukchi women choosing to speak like women from another dialect area, the hypothesis is that the only features of the nonnative Chukchi style adopted were those that were phonologically salient. There is evidence that this is the case. The correspondence between the Chukchi lateral fricative and the non-Chukchi lateral sonorant is never phonologically distinctive, and the palatal consonant series in some Koryako-Chukotian languages does not correspond to phonologically distinct consonants in Chukchi. These features were not preserved; although men's and women's Chukchi have different phonological systems, they still have the same number of phonological oppositions.

This being the case, if the reflex of **d* and **t* brought into the Chukchi speech community by the outsider women was frequently palatal (that is, phonetically more like *c* than like *t*), then speakers choosing a women's pronunciation that contrasts with men's pronunciation could choose to emulate the pronunciation of words where a *t'* contrasts saliently with the men's *r*, but not where there is a contrast of lesser saliency, that is, with men's *t*. There are no palatalization processes in Chukchi involving *t*, but, as shown in section 4.2, palatalization processes involving *t* are common in most, if not all, of the other Koryako-Chukotian languages. The hypothetical developmental sequence is summarized in table 10.

Table 10. Irregular Dialect Mixing in Chukchi

INITIAL STATE:		<i>r</i>	<i>t</i>	<i>c</i>
MEN'S AND WOMEN'S PROTO-CHUKCHI		<i>r</i>	<i>t</i>	<i>c</i>
INFLUENCE FROM PALANA KORYAK OR ALUTOR WOMEN		<i>t^j</i>	<i>t^j</i>	<i>s</i>
REANALYSIS:	(salient contrast)		(nonsalient contrasts)	
MEN'S CHUKCHI		<i>r</i>	<i>t</i>	<i>c (> s)</i>
WOMEN'S CHUKCHI		<i>c</i>	<i>t</i>	<i>c</i>

Note that the hypothesis is not simply that the characteristic accent features of a nonnative Chukchi speaker became fixed; rather, the hypothesis is that the Chukchi women's dialect came into being from an attempt by Chukchi women native speakers to emulate the salient features of the Chukchi of non-native Chukchi-speaking women living among them.

This account assumes two conditions. First, it assumes that, prior to the development of systematic difference between men's and women's Chukchi, the pronunciation of the alveolar-postalveolar fricative phoneme in women's Chukchi was already different from that in men's. It is noteworthy that Bogoras (1917:4) also reports a difference in the pronunciation of *c* by men and women in Koryak, although he says that it is much less regular than in Chukchi. This could be taken as evidence that the pronunciation difference is older, although it could also be taken as evidence of Chukchi influence on its neighbors. Non-systematic pronunciation differences between the language of women and that of men are common crosslinguistically in any case, so absence of evidence about the genesis of this linguistic feature in Chukchi does not tell us much either for or against the account proposed here. The second requirement for this account to work is that the major influence on the development of women's Chukchi was from speakers of dialects of the Alutor-Palana Koryak subgroup, dialects where **d > t*. The linguistic evidence has been presented, but to prove or disprove the hypothesis would require external evidence from anthropological or demographic studies.

4.4. Lexically determined variation. There is also a lexically determined phonemic alternation between *r* and *t* that occurs at the end of certain adverbs and particles. This alternation shows strong statistical tendencies distinguishing men's and women's speech, with women more frequently using the *t*-final form, and men more frequently using the *r*-final form, but with men and women usually using both forms at least some of the time.

The source of this alternation is also linked to the *r ~ c* alternation of men's and women's dialects. The sound [t] is the word-final allophone of *c* as well as of *t*, so, in word-final position, the *r ~ c* alternation is realized as *r ~ t*. Comparison with other Koryako-Chukotian dialects shows that the final phoneme in most of the words in table 11 is historically **d*.¹³ The fact that all of the words with this

alternation are adverbs or particles is probably an accident of Chukchi morphology; most words in Chukchi have some sort of suffix, and it happens that no bound morphemes end in *d.

Table 11. Adverbs and Particles in Chukchi with Final *r* ~ *t* Alternation

FINAL <i>r</i>		FINAL <i>t</i>				
WOMEN	MEN	WOMEN	MEN			
<i>qənur</i>	1 (8%)	51 (80%)	<i>qənut</i>	12 (92%)	13 (20%)	'like, um...'
<i>ewər</i>	1 (2%)	21 (84%)	<i>ewət</i>	43 (98%)	4 (16%)	'and so'
<i>qənwer</i>	13 (48%)	11 (69%)	<i>qənwet</i>	14 (52%)	5 (31%)	'finally'
<i>iyər</i>	0 (0%)	6 (100%)	<i>iyət</i>	18 (100%)	0 (0%)	'now'
<i>luur</i>	6 (32%)	0 (0%)	<i>luut</i>	13 (68%)	0 (0%)	'suddenly'
<i>janor</i>	0 (0%)	4 (67%)	<i>janot</i>	12 (100%)	2 (33%)	'first'
<i>weler</i>	0 (0%)	2 (50%)	<i>welet</i>	2 (100%)	2 (50%)	'maybe'
TOTAL	21 (16%)	95 (79%)	TOTAL	114 (84%)	26 (21%)	

SOURCE: Dunn (1999:32).

It is, however, difficult to claim that the alternate forms of these adverbs are synchronically an example of the gender-dialect alternation, since, if they were, the *t*-final variant would not be expected to occur in the men's dialect at all. Also, it can be shown that, synchronically, the final [t] in these forms is phonemically *t*, not *c*. There are morphologically complex forms of these adverbs with suffixes that retain the [t] word-internally (e.g., the relational form *i�ət-kin* 'ones from now, contemporary ones'); the consonant [t] is the word-internal reflex of the phoneme *t*, but the word internal reflex of *c* is [c]. The word *i�ətkin* is invariant; if the final [t] here were a reflex of *c*, the unattested form **i�əccən* would be expected.

When Chukchi native speakers talk about language, the linguistic feature that they see as distinguishing the women's dialect from the men's is not the relatively frequent occurrence of the phoneme *c*, but, rather, it is the relatively frequent occurrence of the sound [c]. Thus, despite the statistical preferences for women to use the *t*-final forms and for men to use the *r*-final forms, the *t*-final forms of the adverbs are not considered to be solely appropriate for women.

5. Another gender dialect. The regular correspondences between women's and men's Chukchi show evidence of dialect mixing. While it is difficult to propose a historical process by which the gender-dialect distinction in Chukchi could have developed without external influences, such developments are evidenced in other languages. The Tangoa language of Vanuatu provides an example of a systematic gender-dialect distinction, in many ways similar to that in Chukchi, but which could have developed solely from the internal resources of the language. In Tangoa, a phonological series of linguo-labial¹⁴ consonants found in many languages of east Santo and north Malekula occur in the men's

language, but not in the women's (Tryon 1976). As with Chukchi, the Tangoa gender dialects are distinguished by different phonological splits.¹⁵

Camden (1979) describes the Tangoa system, which, alongside the series of bilabial consonants *p*, *v*, and *m*, there are the linguo-labials *t*, *ð*, and *ɳ*, used only by men. He states:

These phonemes define the learned, prestige dialect used by males in oratory, serious discussion, traditional storytelling, etc., and with less consistency in ordinary speech. The dialect is generally regarded as "true Tangoan," though women and children are not expected to use these phonemes and rarely do, replacing them with the corresponding bilabial phonemes, with a resulting increase in the number of homophones. [Camden 1979:113]

The existence of an extra consonant series gives rise to a phonemic mismatch, as illustrated in table 12, where the final column shows the Proto-Oceanic source of the example items.

Table 12. Tangoa Linguo-labials

WOMEN/CHILDREN	GROWN MEN	PROTO-OCEANIC	
<i>mata</i>	<i>tata</i>	* <i>mata</i>	'eye'
<i>mata</i>	<i>mata</i>	* <i>mʷata</i>	'snake'

SOURCE: Tryon (1976).¹⁶

A number of the surrounding languages without linguo-labials nevertheless show signs of once having had them, such as in the case of Tolomako, illustrated in table 13, where the linguo-labials have collapsed with the apicoalveolars, preserving the distinction between Proto-Oceanic **m* and **mʷ*, so that Tolomako 'eye' is *nata* < **tata* < Proto-Oceanic **mata*, whereas 'snake' is *mata*, as in the other languages of the group.

Table 13. Realization of **m* and **mʷ* in Several Oceanic Languages

PROTO-OCEANIC	* <i>m</i>	'eye'	* <i>mʷ</i>	'snake'
TOLOMAKO	<i>n</i>	<i>nata-</i>	<i>m</i>	<i>mata</i>
ARAKI	<i>t</i>	<i>təri-ku</i>	<i>m</i>	<i>maṛa</i>
TANGOA (MEN'S)	<i>t</i>	<i>tata-</i>	<i>m</i>	<i>mata</i>
TANGOA (WOMEN'S)	<i>m</i>	<i>mata-</i>	<i>m</i>	<i>mata</i>
NORTH MALO	<i>m</i>	<i>mata</i>	<i>m</i>	<i>mata</i>

NOTE: POC = Proto-Oceanic; SOURCE: Tryon (1976).

The other likely path for the loss of linguo-labials is **t* to *m*, which would result in the same collapse of Proto-Oceanic **m* and **mʷ* to *m* as may have occurred in the Tangoa of women and children. However, it would be difficult to show that linguo-labials were once present, but then lost in this manner, since it

is always possible to hypothesize a direct collapse of **m* and **m^w* to *m* without any intervening *linguo-labial* stage.

This gender-dialect distinction is structurally simpler than that found in Chukchi. On the basis of a Tangoa men's dialect form, it is always possible to predict the form in Tangoa women's dialect. In Chukchi, neither form can be predicted reliably on the basis of the other. Within the Tangoa speech community, however, the predictability of women's Tangoa on the basis of men's is irrelevant, since men's Tangoa is spoken only in adulthood. A sociolinguistically plausible hypothesis for the origin of the Tangoa gender-dialect distinction is that, when through regular processes of linguistic change, the *linguo-labials* began to be lost, this linguistic innovation was resisted by older men, and thus a conservative form of the language was preserved as a prestige dialect.

6. Conclusion. Gender dialects, as found in Chukchi and Tangoa, illustrate the importance of patterns of social interaction to the understanding of historical linguistic processes. Furthermore, the gender-dialect distinction in Chukchi provides evidence about prehistoric patterns of contact between the Chukchi and other closely related groups. Because of the close similarity of the various Koryako-Chukotian languages, much about the ancestral state of these languages can be reconstructed in detail, and an unusual opportunity exists to distinguish the results of linguistic change due to regular historical processes from that of nongenetic linguistic change due to dialect mixing.

Notes

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Abbreviations and transcription. The following abbreviations are used: 1 = first person; 3 = third person; AUX = auxiliary; DEM = demonstrative; DU = dual; FUT = future; HAB = habitual; INCH = inchoative; INF = infinitive; PERF = perfective; PL = plural; PROG = progressive; SUBJ = subject.

Chukchi is usually transcribed by linguists using conventions that deviate from standard IPA forms. Thus, *s* = *f*, *č* = *tʃ*, and *c* = *ts*. Chukchi *t* is transcribed *l* to avoid confusion with the stop *t*.

1. The census of 1979 has 78.5 percent of a population of 10,983 claiming Chukchi as their native language (Comrie 1994:222). It is debatable precisely what these figures mean, since what people claim as their "native language" does not necessarily mean that they speak it as their first language, or indeed at all.

2. This allophony is represented in the standard orthography, using the Cyrillic characters most closely representing [č] and [š].

3. It is unclear from the context whether he means only the forms with dropped *n* and *t*, or all forms with dropped intervocalic consonants.

4. Skorik (1968a) groups Karagin Koryak and Palana Koryak with Alutor; see the evidence for shared phonological changes between Palana Koryak and Alutor in table 5.

5. The reconstructions presented in tables 5 and 6 are my own; they support the much more detailed analysis of the Chukotko-Kamchatkan protocoronals in Muravyova (1979). Muravyova did not, however, look at the women's variety of Chukchi. The cognate sets given are representative and are by no means exhaustive, as many more similar examples can be found.

6. My access to Kerek sources has been very limited; absence of a form in the correspondence sets should not be taken to indicate that a cognate does not exist.

7. The form given here is the minimal stem used in incorporation and compounding. As independent nouns, these stems are reduplicated. In Chukchi, there has been an additional process of dissimilation, by which reduplicated **ra-ra-* has the form *jara-*.

8. Muravyova (1979) transcribes Alutor *s* as *c*; this has been regularized here and in table 8.

9. Žukova (1980:25–26) also gives *v* > *v^j* / __ *e* and *r* > *r^j* / __ *e*, but these are not so relevant here.

10. This represents the regular assimilation **cv* > *cc*.

11. Conceivably, a geographic study might show that the origin of the Chukchi women's dialect is situated somewhere where there are no longer speakers of any other language (most likely, this would only be possible if the absence of a women's language was geographically distributed as a retention, rather than as an innovation). No such geographic study of women's Chukchi has been attempted, and I only have anecdotal evidence from Chukchis that there are regions where the women's dialect is not used.

12. Sirenniki Eskimo has a historical alternation of *c* and *ž* (the closest phonetic equivalent to Chukchi *r*) coming from vowel-environment conditioning of **ð*, such that **ð* > *c* / __ *a*, but to *ž* elsewhere (Fortescue, Jakobson, and Kaplan 1994:xvi). While it is possible that this kind of process could provide a model for the Chukchi *c* ~ *r* gender-dialect alternation, it is difficult to imagine a mechanism by which this could act on reflexes of Chukchi **d* without also acting upon **r*.

13. Fortescue (p.c. 2000) has pointed out that Chavchuv Koryak has the form *janot* 'first', which suggests a protoform **janot*, rather than **janod*, which would produce the unattested form **janoj*. Two accounts suggest themselves to me: (1) given a protoform **janod*, Chavchuv Koryak speakers might have replaced this word with a form from a neighboring dialect; or, (2) given a protoform **janot*, Chukchi speakers could have invented the form *janor*, in addition to the inherited form *janot*, by analogy with the other adverbs with the *t#* ~ *r#* alternation. The latter hypothesis is probably correct, as evidenced by the Chukchi verb stem *janot-* 'come first'.

14. The linguo-labials (also known as "apico-labials") are a series of sounds articulated with the tongue and upper lip (Maddieson 1989). The phonemic representations used in the present article are standardized according to current IPA usage (International Phonetic Association 1999:193).

15. Fox (1996) describes a gender-specific speech form in the Big Nambas language, which is also spoken in the area of Vanuatu where linguo-labial consonants are found. However, unlike with the Tangoa gender-dialect split, the Big Nambas women's variety consists solely of the replacement of taboo lexicon when addressing particular people; it does not display any phonological or morphosyntactic differences.

16. The data presented in this table, published in Tryon (1976), are from an unpublished report sent to Tryon by William Camden, probably in 1975. A copy of this report, which I have had the opportunity to examine, is in the possession of Darrell Tryon.

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