Montana Salish Root Classes: Evidence from the 19th-Century Jesuit Dictionary

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1. INTRODUCTION. Our goal in this paper is to establish the existence in Montana Salish of two well-defined root classes, which we will call **monovalent** and **bivalent** roots.[1] We present arguments for identifying these as valency classes, rather than appealing to the categories 'unergative' and 'unaccusative', as several other authors have done; we also argue that, at least for this language, it is necessary to distinguish valency from transitivity. We will describe and motivate the four diagnostics that we have used to classify simple roots, and we will discuss briefly the small group of 'ambi-valent' roots for which the diagnostics do not all cluster together.[2] Finally, we will append a list of the roots whose classification we have determined so far.

Our primary source for this analysis is the monumental *Dictionary of the Kalispel or Flat-head Indian Language*, compiled in the middle decades of the 19th century and printed in 1877-79 at St. Ignatius Mission in Montana. The existence of this dictionary is of course well known to Salishanists, but the material in it has (as far as we know) hardly been exploited at all in linguistic analyses of Salishan languages. We will begin our discussion, therefore, by introducing the dictionary to readers who may not be familiar with its history, its scope, and the reasons why it is of considerable potential value for Salishan studies.

2. THE JESUITS' DICTIONARY. The dictionary comprises two volumes—'Kalispel-English' (644 pages) and 'English-Kalispel' (456 pages)—together with a 36-page Appendix to the first volume giving verb conjugations, remarks on reduplication patterns and their functions, and a short list of verbal suffixes 'of which no specific mention is made in the Grammar' (i.e. Mengarini's grammar; see below). The date and publisher of the dictionary are given on the title page of each volume ('St. Ignatius Print, Montana. 1877-8-9'), but the authorship cannot be determined from any information in the dictionary itself. The title page carries this information: *A Dictionary of the Kalispel or Flat-head Indian Language*, compiled by the missionaries of the Society of Jesus'. On the back of the title page is the note 'Entered, according to act of Congress, in the year 1879, by Rev. J. Giorda, S.J., In the office of the Librarian of Congress, at Washington'. Since Giorda's name is the only one that appears on the dictionary, he has usually been assumed to have been the author of the entire work. For example, Vogt (1940:8) gives the full title-page information quoted above, but then says, 'Its

author was the Rev. J. Giorda, S.J.', and Carlson (1972:vi) refers to 'an extensive dictionary by Giorda'. As the title page indicates, however, the dictionary was not a one-man project. Moreover, the main author seems to have been Gregory Mengarini (1811-1886), not Joseph Giorda (d. 1882).

This conclusion is in apparent conflict with the Preface to the dictionary. The one-page Preface is unsigned (it ends with the notation 'St. Ignatius Mission, M[ontana] T[erritory], July 31, 1879'), but whoever wrote it—probably Giorda—refers to himself twice as 'the author', and in particular makes the following statement: 'The author owes much to the manuscript dictionary of Rev. G. Mengarini, who, first of all the Jesuit Missionaries, possessed himself of the genius of this language, and besides speaking it with the perfection of a native Indian, reduced it also to the rules of a grammar'.

Mengarini arrived in western Montana in 1841, one of the two priests who accompanied Father Peter De Smet there and helped him establish the first mission in the region, St. Mary's, on the Bitterroot River at present-day Stevensville, MT, south of present-day Missoula. The inhabitants of the region were Bitterroot Salish (Flatheads). By all accounts (e.g. Lothrop 1977:102), Mengarini's linguistic talents were extraordinary. According to a story that is repeated in more than one source, 'Father Mengarini mastered their language so thoroughly that by his speech the natives could not tell him from one of themselves. It is said that often he played on them an innocent trick of passing himself off as one of their tribe without being detected' (Evans 1981:81).

Mengarini composed his *Grammatica linguae Selicae* (*Grammar of the Salish language*) at St. Mary's during the winter of 1845-46, for the use of the missionaries (Evans 1981:81); it was eventually published in New York in 1861. In 1846 (Lothrop 1977:103) he began work on a Salish-English dictionary, also for the use of the other missionaries. Mengarini himself, as far as we can discover, never lived at St. Ignatius Mission, either in its first location among the Kalispels near modern Cusick, WA, where it was founded in 1845, or in its final and present location in St. Ignatius, MT, north of Missoula, where it was established in 1854. (The mission was moved from Washington because the flooding river at the original location destroyed the missionaries' crops; according to Schoenberg [1960:24], the new location was recommended by Alexander, a Kalispel chief, who told them that the present site, called the Rendezvous, served as a trade and gaming place for the Kalispels, Kutenais, Pend d'Oreilles, and even Flatheads; all the adjacent tribes, he said, 'considered it common ground'. See also Fahey 1986:13-14.) Mengarini must have left St. Mary's Mission when it was closed in 1850; Lothrop (1977:103) says that he left Montana permanently for California in 1852, but none of the sources we have consulted says where he was between 1850 and 1852.

Subsequent work on the dictionary could have been carried out either at St. Mary's

Mission, after it was reopened in 1866 by Fathers Anthony Ravalli (1812-1884) and Giorda, or at St. Ignatius, or both. The question is, who worked on it after Mengarini left? Both Lothrop (1977:103) and Fahey (1986:194) give the authorship as 'J. Giorda, J. Bandini, and G. Mengarini'. But Schoenberg (1960:29) says that the dictionary was 'composed by five brilliant Jesuit scholars beginning with Father Mengarini at St. Mary's', and Davis (1954:55) actually lists five authors, so it seems likely that the later three-author citations inadvertently omitted two of the authors. Besides Mengarini and Giorda, then, the authors were apparently Fathers Leopold van Gorp (1834-1905; arrived at St. Ignatius Mission sometime between 1868 and 1875, when he became superior at the mission—Davis 1954:124), Joseph Bandini (arrived at St. Mary's in 1867 to take charge of the mission during Giorda's absences; we don't know when he moved to St. Ignatius Mission, but he was there by 1883—Evans 1981:204), and Joseph Guidi (arrived at St. Mary's in 1876 'to assist Father d'Aste' because Ravalli was on the road so much—Evans 1981:255). The reason Giorda's name is on the dictionary may have to do with his prominence in the missionary community—he was the Superior of Indian Missions in the Rocky Mountains from 1861 to 1874 (Evans 1981:169, 249)—but it may also reflect the amount of work he did on the dictionary after Mengarini left. However, although the work was not 'entered' until 1879, five years after Giorda stepped down from his post as Superior, the printing actually began in 1876 (see below), so he would have had only two years for dictionary work after leaving his eminent post.

Our best guess is that the dictionary should be cited under the authorship 'Mengarini et al.', especially since Davis says that Mengarini was responsible for the Salish-English part (though of course the other authors might have made changes and additions in it), while 'The English-Flathead section was compiled by Fathers Giorda, van Gorp, Bandini and Guidi' (Davis 1954:55). Although Mengarini's linguistic talents and writings are referred to by a number of authors, none of the sources available to us mentions other work by Giorda on languages. It therefore seems most likely to us that Giorda's role on the Salish-English part of the dictionary was primarily that of editor, not author. This role, together with his possibly major role in preparing the English-Salish volume, could motivate his reference to himself as author in the Preface (assuming that he wrote the Preface). And even if Giorda (or whoever wrote the Preface) did do significant substantive work on the Salish-English volume, Mengarini's authorship of the original manuscript dictionary should (in the absence of evidence that someone else deserves it more) earn him the first position in the list of authors of the published version.

It is also worth noting that Mengarini's original manuscript would have pertained solely to Bitterroot Salish (Flathead). The title of the published work, with 'Kalispel' given first, must have been a later modification, made after the establishment of St. Ignatius Mission

in Washington (among the Kalispels) and later in St. Ignatius, MT (where the Salishan speakers also included Kalispels, in addition to Pend d'Oreilles and, later, Bitterroot Salish).

One final historical point: Davis (1954:55) says that the actual printing of the dictionary began in 1876 (see also Schoenberg 1960:29), and that the St. Ignatius printers were 'among the pioneers in book-printing in our northwestern states'. The printing was done by Father Alexander Diomedi on a hand-press (bought in St. Louis in 1874), with the help of Salish boys at the mission school whom he had trained as apprentices.[3]

The Salish-English volume of the dictionary contains over 700 main entries, of which the majority are roots. The English-Salish volume is in principle confined to the material in the larger volume, but in fact there are some items in the second volume that do not appear in the first. Overall, the number of root entries is not impressive by modern standards set by other dictionaries of Salishan languages. What is remarkable about this dictionary is the very large number of inflectional and derivational variants that are included in the entries. For each entry, the 'principal parts' are given for the first person singular or, in the imperative, second person singular (as in traditional Latin dictionaries), often with an aspect prefix and one or more grammatical suffixes (e.g. transitive suffixes or stative suffixes). These 'principal parts', also as in traditional (e.g. Latin) dictionaries and grammars, are meant to show how a verb is to be conjugated, i.e. what all its inflectional forms will be. There are also a great many derivatives, including a wide variety of locative prefixes and lexical suffixes. There are some illustrative sentences in the dictionary, but not many; and there are no texts.

Below, to show how entries are arranged, is the beginning of a sample root entry—the first few of over 120 lines in the entry for the root *goel* (= χ^w*él* 'abandon'):

GOEL, - [*root of,*]

Chines-goèli, chines-goèl, *v. pass.* I am rejected, I am
    abandoned, thrown away.
Chines-goéli, chin-goélem, goèlish, *v. act. ind.* (6) I
    reject something.
Ies-goélem, goèlen, goélent, *cont.* es-goèlsten,
    es-goèlsku, *v. tr. real.* (8) I reject it or him, I throw
    it away, I repudiate, [wife or husband,] I let it go, abandon him.
    'Es-goèlsten.' I let it go for good, for ever, I repudiate him
    for ever.

The entry begins with the root, in capital letters. The next set of forms is labeled 'passive verb' (*v. pass.*); the first word consists of the first person singular intransitive subject *chin*

(*čn*, phonetically [čən]) 'I' followed by the 'actual' aspect prefix *es-*. Next comes the root; we do not (yet) know why some stressed vowels are marked with a grave accent and some with an acute accent. The root is followed by the 'intransitive continuative' suffix *-mí*, which is phonetically *-i* when it is unstressed. The form *chines-goèli* means 'I am being rejected/abandoned'. As is standard in the dictionary entries, the completive form follows the continuative form: *chin* 'I', then *es-* 'actual aspect', and then the root. The whole form, *chines-goèl*, means 'I am rejected/abandoned'. Note that, here and elsewhere, the basic glosses given for each set of forms are completive, even though the continuative form begins the line.

The second set of forms, *v. act. ind.* 'active indicative verb', has the same basic arrangement. First, *Chines-goéli* is a continuative form: it means 'I am rejecting something'.[4] Then comes the completive form, which is an antipassive: *chin-goélem* 'I reject/abandon something' has the antipassive suffix *-m* (the terms used to discuss the dictionary entries are modern, not 19th-century terms; see below for discussion of the antipassive suffix). Finally, the third form has no subject particle and no aspect prefix, but only the intransitive imperative singular suffix *-ish*, and it means 'Reject/Abandon!' The annotation '(6)' in this entry indicates the conjugation class, in Mengarini's analysis; readers can look up the entire paradigm for verbs of that class in the Appendix to the dictionary.

The third set of forms also begins with a continuative form, this time the transitive continuative (*v. tr. real.*). *Ies-goélem* 'I am rejecting/abandoning it/him' starts with a first person singular (1sg.) possessive prefix 'my' (underlying /in/-; the /n/ disappears in this context), followed by *es-*, which is an irregular allomorph of the nominalizing prefix *s-* (see Thomason & Everett 1993 for discussion). Next comes the root, and then the transitive continuative suffix *-em* (underlying *-m*). The second form, *goèlen*, consists of the root and a surface suffix *-en* (phonetically [n] or [ən]), which reflects an underlying set of suffixes -/nt-én/ (lit. 'transitive-1sg.trans.subject'); the form as a whole means 'I reject/abandon it/him'. The third form in this set, *goélent*, is a singular transitive imperative meaning 'Reject/Abandon it/him!' It consists of the root and the transitive suffix -/nt/. The last two forms in this set are labeled '*cont.*', which looks like an abbreviation for 'continuative'; it must actually mean something else, since the two following forms are not in fact continuative, but we have not yet been able to determine its meaning. In any case, the formations are clear: *es-goèlsten* is a transitive completive form consisting of the 'actual aspect' prefix *es-*, the root, the transitive suffix *-st* (which is equivalent to *-nt*), and the 1sg. transitive subject suffix *-én*; so the entire form should mean something very close to 'I reject/abandon it/him' (like *goèlen*). Similarly, the form *es-goèlsku* is parallel to *goélent*, a singular transitive imperative meaning something close to 'Reject/abandon it/him!'; the suffix *-sku* (in modern orthography, and underlyingly,

-sk̓) is a variant of the singular transitive imperative suffix. This one is used with forms that take the transitive suffix *-st*, while the imperative formation in *goélent* is used in forms that take the transitive suffix *-nt*. The annotation '(8)' in this line indicates the conjugation class. The rest of the information in this set of forms is meant to show the semantic difference between the *-nt* transitive construction and the *-st* transitive construction—the *-st* forms are said to have a permanent effect, while (by implication) the *-nt* forms might be temporary. This illustrates a valuable general feature of the dictionary: the compilers took great pains to define words as precisely as possible, often adding comments about nuances of meaning distinctions between words with similar or identical English glosses.

In the rest of a typical entry, the compilers provide nominal forms and more complex verbal forms (with locative prefixes and various grammatical and lexical suffixes). The sets of forms for verbal entries all have the same basic format as the ones illustrated above.

There is, however, an extremely important observation to be made here: the entries are by no means complete; that is, one does not find exactly the same types of forms (the same sets) in every entry where one might expect to find them. Instead, there are irregular, unpredictable gaps in virtually every entry, including gaps in the basic 'principal parts', and the entries under roots vary from over a hundred lines to just three or four. The significance of this fact is that it increases the user's confidence in the reliability of the material: the internal evidence indicates that the compilers recorded words they actually heard, instead of inventing forms on the basis of a predetermined pattern. Two other factors also help create confidence in the general accuracy of the dictionary. First, members of the Flathead Culture Committee use the dictionary to check forms, and they seem to find it reliable; and second, the level of internal consistency in the patterns that emerge from comparing the entries is very high. Therefore, although checking the dictionary material carefully with modern speakers is obviously important, we are confident that the dictionary is reliable enough to use, with due caution, as a data source. In particular, the patterns we discuss in this paper are completely consistent with the modern data analyzed by Thomason.

This does not, of course, mean that everything in the dictionary would be accepted by modern speakers. Recent efforts (so far unsystematic) by Thomason and by Clyde Smith to re-elicit material in the dictionary have met with moderate, but not complete, success. One reason modern speakers don't recognize some of the forms surely has to do with the fact that the most complex forms are rarely used, so that they are not easily recognized out of context. Another reason must have to do with changes in the language; some roots, for instance, are no longer recognized, though some of these do appear in dictionaries of closely related dialects or languages (especially the glossary in Vogt 1940, Carlson & Flett's 1989 *Spokane dictionary*, and Mattina's 1987 *Colville-Okanagan dictionary*). There may certainly

be actual errors in the dictionary—forms that never occurred and/or forms that don't mean what the authors say they mean—but, aside from obvious typographical errors, we have not yet found any.

In the following discussions, in order to facilitate comparison between our modern spellings and the original   tionary entries, we will present most forms first in the dictionary orthography and then in the modern MSa phoneme-based orthography.[5] The dictionary orthography is underdifferentiated: in particular, it does not normally indicate glottalization or the glottal stop, and it does not distinguish [i] from [y, ẏ] or [u] from [w, ẇ]. Table 1 below gives the correspondences between the dictionary orthography and the modern MSa alphabet. As noted above, we have not yet investigated the dictionary's stress-marking patterns.

JESUIT DICTIONARY	MODERN SALISH
a	a, ə
e	e, ə
i	i, y, ẏ
u	u, w, ẇ
ch	c̓, c̣
g, ga	x, xa
gu	x̌, x̌u, x̌ə
go	x̌, x̌o, x̌ə
ka	q, q̓, qa, q̓a, qə, q̓ə
ko	q̌, q̓̌, q̌o, q̓̌o, qə, q̓ə
ku	ꝁ̌, ꝁ̓̌, ꝁ̌u, ꝁ̓̌u, ꝁ̌ə, ꝁ̓̌ə
l	l, l̓
ł	ł
tl	ƛ̓; occasionally ł
m	m, m̓
n	n, n̓
p	p, p̓
sh	š
t	t, t̓
z	c, c̓ ([ts, ts'])

Table 1. Jesuit dictionary symbols and their modern Salish alphabet equivalents.

3. VALENCY DISTINCTIONS IN MONTANA SALISH ROOTS. We are now ready to present the root classes that we have identified. After discussing the classes and the diagnostics we have used to classify the roots, we will compare (in §4) our analysis with other analyses of root classes that have been proposed for various Salishan languages.

This analysis continues the study of transitivity begun in Thomason & Everett 1993. We discovered the root classes while trying to reconcile morphosyntactic transitivity with the different morphological patterns into which roots enter; the present study thus provides a partial picture of the relationship between the lexical specification of valency and the various morphosyntactic patterns related to transitivity. We should emphasize that this too is a preliminary study: we have not explored all the morphosyntactic behavior of MSa roots. We have also focused exclusively, so far, on simple roots; the interactions between transitivity and complex stems—especially those containing lexical suffixes and/or locative prefixes— are still mysterious to us. (But see L. Thomason 1994 for elucidation of the morphological patterning of more complex forms belonging to the different valency classes.)

In order to classify the roots, we examined the 'principal parts' of all the simple root entries in the dictionary. These turned out to fall into two main classes according to the following four diagnostics: (i) the meaning of the bare root, or of a stem consisting of the root plus the aspect prefix es-; (ii) the meaning of a stem consisting of the root plus a transitive suffix -nt or -st; (iii) the meaning of an antipassive formed to the bare root; and (iv) the meaning of a stem consisting of the root plus the derived transitive suffix -mí and then a transitive suffix -nt or -st.

We have labeled the two root classes MONOVALENT and BIVALENT. Before showing how these classes differ in their behavior, we need to explain how, in our view, the related notions of valency and transitivity are to be distinguished. We take valency to refer to the number of arguments lexically required by a verb; or, to put it another way, valency is the lexical information about the theta-roles a verb can assign. Transitivity, by contrast, is the way valency is manifested in a clause. That is, valency is a lexical property that is inherent in a root or derived stem, while transitivity is primarily a syntactic notion. Transitivity, as many authors have argued, is gradient, and is sensitive to aspect and definiteness as well as to valency, but valency is nongradient. Evidence for the gradient nature of transitivity in MSa is presented in Thomason & Everett 1993; in this paper we focus on the either/or nature of valency.

The common practice is to treat valency and transitivity as (near-)synonyms[6], indistinguishable formally when derived exclusively by subcategorization, as in (say) GB theory. This treatment, however, obscures the gradient properties of transitivity and also makes it very difficult to describe the MSa facts adequately. A distinction of the sort we are making here may well be unnecessary and unhelpful for a language with as little morphology as English, but the complex interactions between lexical valency and morphosyntactic transitivity alternations makes it useful, and perhaps necessary, for Salish.

A monovalent MSa root has just one lexically specified argument. In activity roots—the

type we will concentrate on in this paper—that argument is the actor, i.e. the underlying subject. For other kinds of monovalent roots, the single argument is also the underlying subject, but it may have a different semantic role (e.g. experiencer).

A bivalent root has two lexically specified arguments, an agent and a patient.[7] But since suffixation of a morpheme indicating some degree of syntactic transitivity—either a transitive suffix (typically -nt or -st) or the antipassive suffix -m—must be present in order for a verb to encode two arguments, a form that lacks such a suffix can express only one argument. That argument is the patient, not the agent. It is this feature of bivalent roots that has led to their classification as 'unaccusative' (e.g. Gerdts 1991) or 'non-control' (e.g. Thompson & Thompson 1992); we will discuss these alternative classifications in §4 below.

Let's consider now how the two root classes differ with respect to the four diagnostics we have identified, starting with (i), the meaning of the bare root or of a stem consisting of the root plus the aspect prefix es-. A monovalent root like xʷúy 'go', when it occurs alone or with just the aspect prefix, has an active meaning, as in Chin gùi (čn xʷúy) 'I go, I went'. But a bivalent root occurring alone or with the aspect prefix—i.e. in an intransitive construction in which only one argument can be encoded— has a passive meaning: chines-goèl (čn esxʷél) 'I am rejected, I am abandoned'.

The second diagnostic is the meaning of a stem consisting of the root plus a transitive suffix. A bivalent stem consisting of the root plus a transitive suffix is a plain transitive, never a causative. So, for instance, in the sample partial entry above we saw both an -nt and an -st formation for the bivalent root 'abandon'; and, though the meanings of the two forms differed slightly, both were plain transitives, not causatives: goèlen (xʷél-nt-én [xʷélən]) 'I reject/abandon it/him', es-goèlsten (es-xʷél-st-n) 'I reject/abandon it/him forever'. By contrast, when a transitive suffix—most often -st, but -nt also occurs—is added directly to a monovalent root, the result is a causative formation: gúien and es-gúisten (xʷúy-nt-én [xʷúyən], es-xʷúy-st-én) both mean 'I make him/it go'. In other words, the normal transitive suffix has both a transitivizing and a causative function when it is added to a monovalent root.

Diagnostic (iii), the meaning of an antipassive formed to a bare root, shows a pattern that parallels that of diagnostic (ii). When the antipassive suffix -m is added to a bivalent root, the meaning is never causative: chin-goélem (čn xʷéləm) means 'I reject something'. This can't be called a 'plain transitive' form, of course, since—as shown by its intransitive subject particle čn and by its syntax—it is an intransitive construction. Nevertheless, the suffix -m has the effect of adding a second syntactic argument to the verb, so that both lexically specified arguments can be expressed. When added to a monovalent root, this same suffix produces a causative, e.g. chin-gúiem (čn xʷúy-m) 'I make something go'. Like the

corresponding bivalent construction, this is syntactically intransitive, but the antipassive suffix nevertheless indicates the presence of an added argument in the verb's structure. This function of the antipassive was not recognized in Thomason & Everett 1993, and, as Lucy Thomason has convinced us (personal communication, 1994), this -m suffix is added directly to the root itself, not to a more complex stem as a replacement of a previously added transitive suffix. The label 'antipassive' therefore now seems infelicitous for this suffix: once the existence of the two root classes is recognized, there is no need to try to project transitivity specifications into the lexicon. But since bivalent roots are not syntactically transitive, this suffix cannot detransitivize such a stem, as an antipassive is generally supposed to do. We have retained the label 'antipassive' in this paper for convenience, but see L. Thomason 1994 for an alternative interpretation that seems to fit the language's structure better.

The fourth diagnostic is the function of the derived transitive suffix -mí. Our label 'derived transitive' (see Thomason & Everett 1993) reflects a commonly recognized, and probably the most common, function of this suffix; but it has also been noted frequently that it has other functions as well as that of transitivizing an intransitive (or rather, in our terms, a monovalent) stem. Distinguishing the two root classes doesn't help to sort out all the functions of the suffix, but it does clarify its main usage: when added to a monovalent root, the suffix produces a plain (noncausative) transitive stem to which a transitive suffix -nt/st can be added—that is, it simply creates a transitive stem, without producing a causative form. A simple example is sánemn (morphophonemically /sáṅ-mí-nt-én/) 'I find him quiet'. The monovalent root in this instance is sán (sáṅ) 'quiet, tranquil, steady'. The point here is that the form with the derived transitive suffix does not have a causative reading *'I make him quiet'. The monovalent active root xʷúy 'go' doesn't appear in the dictionary in the simplest form, with the derived transitive suffix added directly to the bare root; but relevant forms do occur with the locative prefix č- 'to(ward)': compare the intransitive form chin-chgùi (čn čxʷúy) 'I go to some place'—clearly still a monovalent stem, since it has an active reading— with the transitive form chgùimen 'I go to see him' (čxʷúymən, morphophonemically /č-xʷúy-mí-nt-én/, which literally means 'toward-go-derived.trans-trans.-1sg.trans.subj'). Here again, the reading is not causative (*'I make him go toward some place'). The function of the suffix -mí in bivalent roots is less neat (though see L. Thomason 1994), but it certainly does not form plain transitives from bivalent roots—not surprisingly, since plain transitives for this root class are formed simply by adding a transitive suffix -nt or -st. For the bivalent root uìch (wíč) 'see', for instance, the dictionary gives uíchemen (/wíč-mí-nt-én/) 'I see with it, I use it to see'.

These are the main patterns that we have found so far in monovalent and bivalent roots. Bivalent roots are much more numerous than monovalent roots, a feature that corresponds to

what others have found for Salishan languages (e.g. Hukari 1976, talking about unaccusative roots, cited in Gerdts 1991:237; and Thompson & Thompson 1992:55, talking about non-control roots) and for other languages as well (Terrence Kaufman, personal communication, 1993).

We have little to say about the very small third root class, the ambi-valent roots. As the name suggests, ambi-valent roots test differently for different diagnostics. Specifically, they have an active meaning when they occur alone or with the aspect prefix es-, but they also take a transitive suffix with a plain transitive meaning, not a causative meaning. An example (from Thomason's materials rather than from the Jesuit dictionary) is the root ʔíɬn 'eat'. The bare root, as in čn ʔíɬn 'I eat/ate', has an active meaning as if it were a monovalent root; but ʔíɬn (morphophonemic /ʔíɬn-nt-én/) means 'I ate it' (not *'I made him eat it'), as if the root were bivalent.

4. ALTERNATIVE ROOT CLASSIFICATIONS. The issues we are addressing in this paper are of course not new in Salishan studies, and our proposal is just one of several competing classifications of Salishan roots and/or complex stems. In this final section we consider several other classifications very briefly and give our reasons for not adopting them in our analysis of Montana Salish. To some extent, the different analyses may reflect differences in the languages themselves; we have not undertaken a detailed analysis of possibly relevant differences.

In the older Salishan literature, a distinction is often made between transitive and intransitive roots. Carlson (1972:90), for instance, bases his classification of roots on the 'possibilities of combination with pronominal elements', and in an Appendix (134-38) he lists roots with a three-way classification, Transitive (including e.g. wíč 'see'), Intransitive (including e.g. x̌uy 'go'), and Ambivalent (including e.g. ʔíɬn 'eat'). He thus uses the morphosyntactic criterion of pronominal agreement to classify roots; but, though it is intuitively appealing, this criterion is ultimately inadequate for MSa, because (as we have seen) roots of both classes take part in both transitive and intransitive constructions, with the very same agreement markers and transitive suffixes.

A more recent emphasis in the Salishan literature has been the notion of 'control' (Thompson 1985, Thompson & Thompson 1992). Thompson & Thompson (1992:51) call control 'an unexpected category which permeates the entire language', saying that 'it is clear that roots are at least commonly marked for control'. They count about 50 [+control] roots, out of a total of over 2000 (p. 55); since their [+control] roots match our 'activity' monovalent roots, this count fits rather well with our results on the numerical difference between monovalent and bivalent roots. There is obviously considerable overlap between the Thompsons' notion of control and our root classes; in addition to the activity monovalent/non-control matching, their [-control] roots are apparently equivalent to our bivalent roots. It is difficult to determine the extent to which the two classifications do overlap, however, because the Thompsons do not give explicit diagnostics for distinguishing [+control] from [-control] roots. In any case, since our morphosyntactic tests work with MSa data, we see no need to appeal to the hard-to-define notion of control in classifying MSa roots. If further study reveals close connections between our root classes and other aspects of the domain of the Thompsons' [control] feature, we will reconsider this position.

Another widely-used classification of Salishan roots and stems divides patient-oriented from agent-oriented verbs (e.g. Hess 1993, for Lushootseed). In an influential article, Gerdts (1991) translates these notions into two related but different categories, linking the Salishan classes to the Unaccusative Hypothesis (Perlmutter 1978) and thus referring to UNERGATIVE vs. UNACCUSATIVE verbs. Unergative verbs, as she reports, have to do with volitional actions and involuntary bodily processes, and they have only an underlying subject; unaccusative verbs involve nonvolitional actions or states and have only an underlying object (1991:230). The superficial connection with our valency classes is obvious: monovalent roots, with their sole lexically specified argument being a subject, would correspond to unergative verbs, and bivalent roots, whose sole expressed argument is a patient when the root occurs unaffixed or with only the aspect prefix es-, would correspond to unaccusative verbs. Other authors have also treated the larger class of Salishan roots as unaccusatives, e.g. Hukari for Halkomelem (1976, cited in Gerdts 1991:237) and Howett (1993), who builds on and adapts Gerdts's findings in concluding that Nɬeʔképmx (Thompson) roots should be classified into unergative and unaccusative classes.

We too could have made use of the unaccusative/unergative distinction, identifying the MSa root classes with Gerdts's classes. We have one major reason for deciding not to do so: it seems clear that MSa bivalent roots have both an agent and a patient in their lexical representations, so that they do not fit the classic pattern for unaccusatives, which by definition have only one underlying argument. It's true that an unsuffixed bivalent root can express only the patient, and considering such roots to be 'patient-oriented' is a reasonable approach. Nevertheless, fully inflected forms of these roots that do not encode an agent are rare and, we would argue, marked: the normal occurrence of a bivalent root is with a transitive suffix or the antipassive suffix -m, i.e. with an agent expressed in the argument structure. The citation forms of bivalent roots tend to bear out this judgment: asking a native speaker of MSa how to say (for instance) 'bury' is likely to elicit the antipassive form láqəm, literally 's/he buried someone' (the root is láq̓), and such forms appear frequently in the English-Flathead vocabulary list prepared by the Flathead Culture Committee some

years ago. Monovalent roots, by contrast, usually occur in context with just one argument, the subject (actor, experiencer, ...); for this class, forms with two arguments are rarer and marked.

5. CONCLUSION. The analysis we have presented in this paper is highly tentative. There is a large quantity of data that we have not yet sifted through, and we have not yet explored the theoretical implications of our findings about Montana Salish root classes—in particular our proposal for a distinction between lexical valency and morphosyntactic transitivity. But we hope that the material discussed here will contribute to a better understanding of this enormously complex area of Salishan grammar. We also hope that our (overlong) description of the Jesuits' dictionary will help to make that remarkable piece of scholarship more fully appreciated.

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FOOTNOTES

[1]We use the term 'Montana Salish' as a compromise between a desire to use the people's self-name, 'Salish', and the need to keep linguists from being confused by the fact that the name Salish has long been used in the linguistic literature to designate the entire family of languages. We will abbreviate the name as MSa. Montana Salish—which in the past has generally been called 'Flathead' in English—is a dialect of the same (nameless) language as Spokane, Kalispel, and Pend d'Oreille; the Salish section of the Confederated Salish-Kootenai Tribes on the Flathead Reservation in northwestern Montana includes the three Salishan groups living on the reservation: Bitterroot Salish, Pend d'Oreille, and Kalispel.

[2]The odd spelling 'ambi-valent' is meant to signal the difference in its pronunciation (with stress on the syllable *va*) and meaning from the English word 'ambivalent' (with stress on *bi*).

[3]A later imprint from the St. Ignatius press, *May blossoms from the Rocky Mountains in honor of the B. Mother of God*, 'by a father of the Society of Jesus', carries this legend: 'Printed by the pupils at the St. Ignatius Indian Mission School, Flathead Reservation, Montana, 1886'.

[4]This form is homophonous with the first word in the preceding line, and is spelled just like it in the dictionary except for the accent, but the two words have different morphological (and morphophonemic) structures: The passive *Chines-goèli* 'I am being abandoned' is underlyingly /čn es-x̣ʷél-mí/ (lit. 'I actual-abandon-continuative'), while the active form *Chines-goéli* 'I am abandoning something' is underlyingly /čn es-x̣ʷél-m-mí/ (lit. 'I actual-abandon-antipassive-continuative'). In the latter form, the two *m*'s coalesce into one.

[5]The MSa orthography used here is close, but not identical, to the modified IPA orthographic system adopted officially by the Culture Committee in 1993. The main differences are that, to make the surface phonetic pronunciation clear, we retain phonetic schwas where they seem useful, though schwa does not appear in underlying phonemic representations; we often retain an [ey] diphthong after a uvular consonant (instead of [i]); we retain the spellings *o* (instead of /u/) and *a* (instead of schwa or zero) after uvular and pharyngeal consonants; and we sometimes omit pharyngeal consonants, especially in words in which most speakers seem not to have them.

[6]Alternatively, one of the two is defined in terms of the other. For instance, Lyons (19..:486) says, 'What is traditionally described as a transitive verb is a verb which has a valency of 2 and governs a direct object.' Nichols (1981:205-206), in discussing the North Central Caucasian language Chechen, seems to be appealing to a distinction between valency and transitivity that resembles ours, but her use of the terms is the opposite of ours: 'In Chechen, a verb is transitive if it has an ergative subject; intransitive if it has a nominative subject; inverse otherwise. ... The criterion of transitivity is not to be confused with valence: valence counts the number of overt, anaphorically zero, and Equi-deleted terms wtihout asking about verb types, while transitivity is a purely lexical property of verb stems.'

[7]We do not consider in this paper the possibility that some roots, e.g. 'give', might have larger lexical valencies.

APPENDIX

In this Appendix we list all the roots from the Salish-English volume of Mengarini et al. that we have classified so far. The roots are listed alphabetically (that is, in the dictionary's alphabetical order; see §2 above) and, as in the dictionary, in capital letters. (For ease of formatting, however, we have omitted the occasional accents and the bars on the L's in the dictionary entries.) For those roots whose equivalents we have identified in Thomason's lexical materials, we give a modern spelling after the dictionary spelling. The glosses come from the Mengarini et al. dictionary. This list is preliminary, both because it is incomplete and because there are probably some errors in it. We are grateful to Lucy Thomason for her help in double-checking the classifications and compiling the list.

AAIM	ʔaym	bivalent	'hate'
AAM	aám	bivalent	'melt away'
AG	ax̣	bivalent	'stretch'
AGAL	ʔax̣eyl	ambivalent	'do like, do as'
AGO	ʔax̣ʷ	bivalent	'sweep, scrape'
AIL	ayl	bivalent	'shave'
AIP	ʔay̓p	monovalent	'run, gallop'
AIZ	?	bivalent	'urge, beg, insist'
AU	ʔaw	bivalent	'call out, say'
AZ	ac	bivalent	'tie'
AZG	ʔácx̣	bivalent	'look at'
CHAL	čal	bivalent	'cut'
CHEE	čéʔ	bivalent	'put down (round, single object)'
CHEEP	čép	monovalent	'be soft'
CHEGU	čéx̣ʷ	bivalent	'dry'
CHEH	čeh	bivalent	'uncover'
CHEHEK	ček̓ʷ	bivalent	'detach'
CHEI	čey	bivalent	'shade'
CHELE	čełé	monovalent	'be three'
CHELTICH	čłtíč	monovalent	'be master'
CHEM	?	ambivalent	'detest'
CHEM	čm̓ʔ	bivalent	'scavenge'
CHENGU	?	bivalent	'touch'
CHGOEZ	x̣ʷéc	bivalent	'pass'
CHIA	čya	bivalent	'seduce'
CHIIT	č?it	monovalent	'be near'
CHIITE	?	bivalent	'watch over'
CHILIP	čłíp	ambivalent	'hunt'
CHIN	čn̓	bivalent	'catch'
CHITEL	?	monovalent	'commend to'

LEE	ɬ?	ambivalent	'lean, press'
CHO	čuw	monovalent	'be absent'
ECHSUISH	ečswíš	monovalent	'stand'
EEM	ʔem̓	bivalent	'feed'
EEP	ʔép̓	bivalent	'wipe'
EGU	ex̌ʷ	bivalent	'speak, say'
EL	?	bivalent	'do violence to'
ELKO	?	bivalent	'be able to'
ELKO	ʔélk̓ʷ	bivalent	'save, store'
EMUT	ʔemút	monovalent	'sit, be at home'
ENES	en̓és	monovalent	'go along'
ENUEN	enwén	bivalent	'feel, sense'
ESEL	ʔesél	monovalent	'be two'
ESCHEN	?	bivalent	'gather, harvest'
EUET	ew̓t	bivalent	'creep up on'
EU	?	bivalent	'feel'
EU	ew	bivalent	'peel'
GA	xa	bivalent	'fan, blow on'
GAK	xaq̓	bivalent	'pay'
GAK	xq	bivalent	'clear away'
GAL	xl	bivalent	'put flat'
GAL	x̌ál	monovalent	'be light'
GALIT	xlit	bivalent	'ask for'
GAM	?	bivalent	'gnaw'
GAMENCH	xmenč	bivalent	'like, love'
GAP	xp̓	bivalent	'button'
GAZUT	?	monovalent	'travel with'
GEEN	xen	bivalent	'forbid, prevent'
GEIP	?	bivalent	'gnaw dried meat or woolen clothes'
GELU	x̌élwi	monovalent	'husband'
GEL	?	bivalent	'invite'
GEM	x̌ém	bivalent	'load heavily'
GES	x̌és	monovalent	'be happy'
GETL	xx̌	bivalent	'bite, graze'
GEZT	?	bivalent	'dig'
GOAGOI	x̌ʷax̌ʷʔey	monovalent	'laugh'
GOAKO	x̌ʷáq̓ʷ	bivalent	'grind, file'
GOEE	x̌ʷʔ	bivalent	'raise, lift'
GOEIP	x̌ʷóp	monovalent	'be lazy'
GOEL	x̌ʷél	bivalent	'reject, abandon'
GOIZ	x̌ʷéyc	bivalent	'cut short'
GOIKO	x̌ʷeyq̓ʷ	bivalent	'pierce, stab'
GOLKO	x̌ʷólq̓ʷ	ambivalent	'roll'
GOT	x̌ʷt	bivalent	'cut, crop'
GUEKUS	?	bivalent	'shake a fist at'

GUEM	x̌ʷem	bivalent	'paint red'
GUEP	x̌ʷép	bivalent	'spread'
GUI	x̌ʷúy	monovalent	'go'
GUIKU	x̌ʷik̓ʷ	bivalent	'tan, dress a hide'
GUKU	x̌ʷúk̓ʷ	monovalent	'clean'
GUTL	x̌ʷx̌í	bivalent	'whittle, plane'
GUTT	x̌ʷt	monovalent	'be angry'
GUUS	?	monovalent	'keep awake'
GUZ	x̌ʷc	bivalent	'skin, flay'
HEE	?	bivalent	'honor, respect'
HEENEM	heʔén̓m	monovalent	'be eight'
HOI	hwy	ambivalent	'finish, stop'
IAL	yál	monovalent	'be round'
IAG	?	bivalent	'startle by shouting'
IALKO	yalk̓ʷ	bivalent	'bend in a circle'
IEGU	?	bivalent	'broil'
IEI	yé	bivalent	'weave'
IEL	yél	bivalent	'surround'
IELGU	?	bivalent	'spread, pull over'
IELU	?	bivalent	'twist'
IG	ix	bivalent	'herd'
IHEM	?	bivalent	'make peace with'
IILKU	yílk̓ʷ	bivalent	'rub'
IL	il	bivalent	'strike with a sharp stick'
ILIMIGU	ilmíx̌ʷm	monovalent	'be chief'
ILIP	?	bivalent	'wound accidentally with a missile'
ILN	íɬn	ambivalent	'eat'
IMSH	ʔím̓š	monovalent	'move camp'
IO	yóo	monovalent	'be well, be strong'
IOKO	yóq̓ʷey	bivalent	'lie, tell a lie'
ISKOL	ʔisk̓l	bivalent	'throw away'
ITSH	ʔítš	monovalent	'sleep'
IUU	?	bivalent	'shake'
IUL	yúl	monovalent	'dance the war dance'
IZT	?	monovalent	'travel all night'
KAE	q̓e?	bivalent	'stick in'
KAEM	q̓ʔém	bivalent	'suckle'
KAI	q̓eẏ	bivalent	'write'
KALUET	?	bivalent	'trample, tread on'
KALG	q̓íx̌ʷ	bivalent	'hook, hang on a hook'
KAM	q̓éym	monovalent	'be quiet'
KAM	q̓m	bivalent	'swallow'
KAMM	q̓m	bivalent	'covet, desire'
KAMEIE	q̓q̓mmé	bivalent	'fish, angle'
KAMIN	q̓mín	bivalent	'lay down (several objects)'

KAO	q̇aẇ	bivalent	'break'
KAP	qp	bivalent	'befriend for life'
KAZ	qc	bivalent	'shrink'
KEIGU	qéyxʷ	bivalent	'chase away, whip'
KEIL	qeyl	bivalent	'coax, persuade, seduce'
KEIS	qeẏs	monovalent	'prophesy, speak in a dream'
KEIUS	?	bivalent	'disbelieve, doubt'
KET	?	monovalent	'weight, sink'
KOAGO	?	monovalent	'stand (several animals)'
KOAI	q̇ʷáy	monovalent	'be black'
KOE	kʷeʔ	bivalent	'bite'
KOEI	qʷy	bivalent	'buy'
KOE	?	bivalent	'wring, twist, squeeze'
KOEM	qʷeʔm	monovalent	'be accustomed'
KOEN	kʷén	bivalent	'display, inspect'
KOEU	qʷéw	monovalent	'be crazy, drunk'
KOEZ	q̇ʷeċ	bivalent	'fill'
KOEZ	qʷec	bivalent	'warm'
KOI	q̇ʷóẏ	bivalent	'shelter from the wind'
KOIOGO	?	bivalent	'catch fish in a trench'
KOIL	qʷéyl	bivalent	'cheat, trick, defraud'
KOIL	q̇ʷeyl	monovalent	'strive, do one's best'
KOL	kʷúl	bivalent	'do, make, fix'
KOLEU	q̇ʷlew	bivalent	'gather fruits, berries'
KOLKA	q̇ʷólq	bivalent	'sow, plant'
KOM	?	bivalent	'take (several objects)'
KOZ	q̇ʷóc	monovalent	'be fat'
KUELCH	kʷélċ	bivalent	'cover, overturn'
KUEZT	kʷst	monovalent	'be morning, early'
KUI	kʷiy	monovalent	'be small'
KUIL	kʷil	monovalent	'be red'
KUITL	kʷx̌í	bivalent	'take out'
KUL	kʷúl	bivalent	'send, despatch'
KUEN	kʷén	bivalent	'take'
KUP	kʷúp	bivalent	'push'
KUTUN	kʷtún	monovalent	'be big, great'
LAAP	laáp	monovalent	'travel by water'
LA	?	monovalent	'throw away'
LAKO	lq̇ʷ	bivalent	'sprinkle with water'
LECH	léċ	bivalent	'do violence to'
LESHIN	lesṅ	monovalent	'hear from afar'
LICH	líċ	bivalent	'tie, bind'
LK	lq	bivalent	'pull out by the roots'
LKO	lkʷ	monovalent	'be far'
LOKO	?	bivalent	'cover with hair or wool'
LOO	ló?	bivalent	'put in'
LUKU	lúkʷ	ambivalent	'take (wood)'
LZI	lcí	monovalent	'be there'
LAKA	łaq̇	monovalent	'be wide'
LEM	?	bivalent	'console'
LEZ	?	bivalent	'smooth'
LGOP	łoxʷp̣	monovalent	'escape, run off'
LIGUP	?	bivalent	'wear (clothes)'
LIKA	?	bivalent	'tear, rend'
LIKU	łikʷ	bivalent	'string'
LIN	?	bivalent	'sprinkle out'
LIZ	łc	bivalent	'whip, punish'
LOKO	łqʷ	bivalent	'put on, hang up'
LKU	?	bivalent	'hide away'
LMKA	łmṁáq	bivalent	'scorch, burn'
LOG	łóxʷ	bivalent	'bore'
LOP	?	bivalent	'suck'
LOP	łóp	bivalent	'bend down'
LOZ	łóc	bivalent	'smash'
LPIP	?	monovalent	'lose hope, despair'
LP	łíp	bivalent	'mark with lines'
LUEN	?	bivalent	'forsake, abandon'
LUU	łu?	bivalent	'pierce, sting'
LUZ	łúc	bivalent	'wet, moisten'
MAKA	maq	bivalent	'detain, prevent'
MAL	mál	bivalent	'soil'
MALIEM	malyé	bivalent	'doctor, heal'
MALKU	?	bivalent	'disjoint, dislocate'
MALEIE	?	bivalent	'mix'
MAU	máẇ	bivalent	'break, undo, destroy'
MEE	mé?	ambivalent	'disturb, trouble, ves'
MEEIEP	?	bivalent	'accuse'
MEEL	?	ambivalent	'cure, recover'
MEL	mỉ	bivalent	'flood, submerge'
MENIGU	meṅxʷ	ambivalent	'smoke'
METL	méx̌	bivalent	'mix'
MIGO	?	bivalent	'dishevel, unweave'
MII	mí	bivalent	'know'
MIL	?	bivalent	'distribute, deal out'
MIN	míṅ	bivalent	'grease, varnish'
MOOT	m?ót	bivalent	'smoke'
MUL	mú?	bivalent	'fish with nets'
MUS	mús	monovalent	'be four'
NAS	nas	bivalent	'wet'
NAUKAN	?	bivalent	'exhort, command'

NEEIS	?	bivalent	'pay for'
NEIGU	?	bivalent	'swap, exchange'
NEM	?	bivalent	'save up'
NEU	néẇ	bivalent	'fan, blow on'
NEUTEP	?	bivalent	'ask for gambling winnings'
NICH	níč	bivalent	'cut'
NIL	níl	bivalent	'poison'
IEKO	yékʷ	monovalent	'go over, through'
NKO	nkʷuʔ	monovalent	'be one'
NKOLS	?	bivalent	'do penance, make amends'
KON	qʷeyṅ	monovalent	'favor, pity'
NKUEMP	?	bivalent	'take back gambling losses'
KUN	kʷún	bivalent	'sing'
KUEL	?	bivalent	'dip'
NMENCHIN	?	monovalent	'turn one's back'
OLGU	ʔúlxʷ	monovalent	'enter, go in'
NPILS	?	monovalent	'enter, go in (several people)'
NOSS	?	bivalent	'clean, pick, blow one's nose'
NULUS	?	bivalent	'unite'
NZOMP	?	bivalent	'break eggs'
OG	oxʷ	bivalent	'fence'
OIM	?	bivalent	'unfreeze'
OIM	ʔoẏ	monovalent	'laugh'
OL	?	monovalent	'coagulate, curdle'
ONEGU	unéxʷ	ambivalent	'tell the truth'
OOS	oós	bivalent	'lose'
OPEN	ʔúpn	monovalent	'ten'
OZKE	ʔocqeʔ	monovalent	'go out'
PAA	ṗaá	bivalent	'burn'
PAAG	ṗaʔáx	bivalent	'cure, heal'
PAAKA	ṗaq̇	ambivalent	'shine, illuminate'
PAG	pax̣	am ?bivalent	'light by friction, strike'
PSAIE	psayéʔ	monovalent	'be foolish'
PAZ	ṗíč?	bivalent	'squeeze, press'
PECHST	pécst	bivalent	'put on (gloves)'
PEESH	?	monovalent	'be light, limber'
PEGU	ṗexʷ	bivalent	'shine, light'
PEL	pḷ	bivalent	'carry away (wind or water)'
PELKA	?	bivalent	'bend'
PELKA	?	bivalent	'pollute'
PEU	péw	bivalent	'inflate, swell with air, breathe'
POG	pxʷ	bivalent	'scatter, disperse'
PIIK	ṗiq	monovalent	'be ripe, ready'
PIGA	ṗix	bivalent	'brand'
PII	piy	monovalent	'rejoice, be happy'

PIK	piq	monovalent	'be white'
PIN	ṗín	bivalent	'lay down (wood)'
PIN	ṗíṅ	bivalent	'fold, bend'
PITKU	ptkʷ	bivalent	'pierce, sting'
PLAGT	?	monovalent	'philtre'
POKO	pq̇ʷ	bivalent	'scatter, spill, powder'
POLKO	ṗulkʷ	bivalent	'wrap, fold'
POLS	puls	bivalent	'kill'
POO	?	bivalent	'paint white'
POOS	poʔós	bivalent	'lather'
POTE	?	bivalent	'respect, be in awe of'
POTL	?	bivalent	'grease'
PISH	?	bivalent	'scrape (a hide)'
PAT	pt	bivalent	'glue, stick, splash'
PATAK	?	monovalent	'be sore'
PITL	pex̌	bivalent	'pull off, take off'
PTTAGO	ptáxʷ	bivalent	'spit'
PUGU	púxʷ	bivalent	'blow on, doctor'
PKU	pkʷ	bivalent	'shake off'
PUM	?	bivalent	'smoke (a hide)'
PUUS	puʔús	bivalent	'consider, judge'
PAZ	?	bivalent	'squirt (liquid)'
SAGO	sax̌ʷ	bivalent	'split (wood)'
SAK	soq̇	bivalent	'split, crack'
SAL	?	monovalent	'be thin'
SALKO	?	bivalent	'bend down (a tree)'
SAN	saṅ	monovalent	'be quiet, tame'
CHUT	čút	monovalent	'be half'
SEE	?	monovalent	'be serious'
SIL	?	bivalent	'set down (several objects)'
SELL	?	bivalent	'copulate with'
SEU	séw	bivalent	'ask, question'
CHSGA	?	bivalent	'pull out (hair)'
SHAL	šál	bivalent	'hang up'
SHALL	šál	monovalent	'be bored, lazy'
SHEI	?	ambivalent	'grant, accord'
SHEMEN	šmeṅ	monovalent	'be an enemy'
SHIIT	š?it	monovalent	'be first'
SHIL	šil	bivalent	'chop'
SHIN	šṅ	bivalent	'stick on, patch, shut'
SHIP	?	bivalent	'devour'
SHIT	šít	bivalent	'plant'
SI	?	monovalent	'be able, worthy, strong, brave'
SICH	šíč	bivalent	'miss'

SIEN	siyén	bivalent	'count'
SIGU	síxʷ	bivalent	'pour, spill'
SIN	?	bivalent	'scent, perfume'
SINZE	sínce?	monovalent	'be a younger brother'
SISPEL	spí	monovalent	'seven'
SITCH	sitč	bivalent	'plait'
KUSEE	qʷsé?	monovalent	'be a son'
SOKOI	?	bivalent	'scalp'
SOO	s?o	bivalent	'melt, drink up'
SIP	spí	bivalent	'strike, whip'
TM	tám	monovalent	'be a relative'
SUGU	súxʷ	bivalent	'recognize, know'
SUGUM	?	bivalent	'weigh, measure'
SU	sú	ambivalent	'drink'
TAM	?	bivalent	'deny, refuse'
TAAP	ƚap	bivalent	'shoot'
TAG	táx	monovalent	'be bitter'
TAK	ƚáq	ambivalent	'stack, lie in a heap'
TAKA	taq	bivalent	'signal'
TAKAN	ƚáqn	monovalent	'be six'
TAKO	ƚáqʷ	bivalent	'lick'
TAL	tal	bivalent	'untie, loosen'
TAS	ƚás	monovalent	'be hard'
TCHEI	tčéy	bivalent	'urinate on'
TECH	?	bivalent	'push (with fingertips or stick)'
TEE	te?	bivalent	'hammer, pound'
TEEM	?	bivalent	'catch, grab'
TEGKU	?	bivalent	'detach'
TEIE	ƚéye?	monovalent	'be bad'
TELAUI	?	bivalent	'imitate'
TIL	tƚí	bivalent	'break, rip, tear'
TELGEIU	?	bivalent	'scratch'
TELKA	tlq̇	bivalent	'kick'
TELKA	?	monovalent	'dance'
TELKO	?	monovalent	'flee, run away'
TEL	?	bivalent	'paste, daub'
TAM	ƚam	bivalent	'kiss'
TENEMUS	tnṁus	monovalent	'be good-for-nothing'
TESHILSH	tésl̇š	monovalent	'stand up'
TEZ	tec	bivalent	'caress, pat, touch gently'
TGU	?	bivalent	'add'
TIESH	tiyéš	monovalent	'crawl'
TIGU	tixʷ	bivalent	'get, get hold of'
TIGUL	ƚíxʷl	ambivalent	'change'
TILIGU	tìxʷ	bivalent	'be unable to do, prevail on'
TIM	ƚim	monovalent	'be wet, damp'
TIP	ƚip	ambivalent	'fall, lower from on high'
TKA	taq	bivalent	'touch (with the hand)'
TKEP	?	bivalent	'dam up, choke, suffocate'
TKO	tk̓ʷ	ambivalent	'lay down, put down'
TKOKO	?	monovalent	'fall'
TOKO	ƚq̇ʷ	bivalent	'sew'
TKOOT	tk̓ʷ?út	monovalent	'go, walk (several people)'
TKU	ƚoqʷ	bivalent	'slap'
TLAKA	x̌áq̇	bivalent	'heat, warm'
TLAKO	x̌aq̇ʷ	bivalent	'fight with (a spouse)'
TLAUCH	?	bivalent	'soil, splatter with mud'
TLEECH	?	monovalent	'come out (inanimate)'
TLEE	ƚee?	bivalent	'search for, seek'
TLEKU	x̌e?k̓ʷ	bivalent	'move, clear the way'
TLEMOT	?	bivalent	'row, paddle'
TLIL	x̌fl	monovalent	'die, be still'
TLIZ	x̌íc	monovalent	'be hard, tough'
TLUM	?	bivalent	'stain with blood'
TMAGA	?	bivalent	'tear, shred'
TOG	tóxʷ	monovalent	'be straight'
TOM	ƚaṁ	bivalent	'suck'
TOMCH	?	bivalent	'be a daughter'
TEU	tu	bivalent	'trade, bargain, buy, sell'
TOOKA	?	bivalent	'take, lower (several objects)'
TO	?	bivalent	'deteriorate, diminish'
TEU	?	bivalent	'coax, be gentle to'
TOUAK	?	ambivalent	'snap, break in two'
TIP	?	bivalent	'join to'
TPIP	ƚp	monovalent	'stand up (several people)'
TSHIU	?	bivalent	'caress, smooth the hair of'
TUI	ƚúy	bivalent	'bend, bow down'
TUUL	?	monovalent	'be slow, quiet'
UAKA	wá	monovalent	'be wild, savage, untamed'
UAL	?	bivalent	'soften (a skin)'
UAM	wám	monovalent	'hurry, go quickly'
UEE	wé?	bivalent	'hail, cry out to'
UEIT	?	monovalent	'be sick'
UEKU	wek̓ʷ	bivalent	'hide, conceal'
UESH	?	monovalent	'take a husband'
UICH	wíc	bivalent	'see'
UIELT	?	monovalent	'be a prisoner'
UIGA	?	monovalent	'crack, shrink'
UKU	?uk̓ʷ	bivalent	'bring, carry'
UL	ulí	bivalent	'burn'

ULUS	?	bivalent	'unite, join'
ULHU	?	bivalent	'beg for'
USH	uš	bivalent	'comb'
UUM	?	bivalent	'rub fine (tobacco)'
ZAGA	c̓áx	bivalent	'fry'
ZKA	cq	bivalent	'set down'
ZAKO	?	bivalent	'stick in, plant'
ZAAL	c̓aal	monovalent	'be sore, sick'
ZAL	c̓áł	monovalent	'be cold'
ZAN	c̓án	monovalent	'be tight, firm, secure'
ZEEKU	c̓ék̫	ambivalent	'bloom, pick (flowers)'
ZESH	c̓ʔeš	monovalent	'be ashamed'
ZEU	c̓éẇ	bivalent	'wash'
ZGOP	?	monovalent	'improve, grow better, bigger'
ZII	cí	monovalent	'remain, dwell, live, be'
ZICH	?	bivalent	'gore'
ZIIKU	cík̫	bivalent	'kindle'
ZIIKA	ciq	bivalent	'dig'
ZIL	cíl	monovalent	'five'
ZIL	c̓íl	bivalent	'plant (several plants)'
ZIP	c̓íp	bivalent	'pinch'
ZISH	?	bivalent	'warm'
ZKEI	cqay̓	bivalent	'dry'
ZKOAKO	c̓q̫áq	monovalent	'weep, cry'
ZGO	c̓x̫	bivalent	'scold, lecture, instruct'
ZOKO	c̓oq̫	bivalent	'point (with a finger)'
ZOOKA	cóq	bivalent	'pull out, snatch out, draw out'
ZOOT	?	monovalent	'mourn, cry'
ZAPK	?	bivalent	'glue, paste'
ZPOGO	?	bivalent	'pierce (a bone)'
ZS	c̓s	bivalent	'clean, clear out, sweep, strip away'
ZUEL	?	bivalent	'fetch, go after'
ZUT	cú	ambivalent	'say, tell'
ZUM	cuʔ	bivalent	'hit with the fist'
ZUUT	cuʔt	monovalent	'behave'
ZUET	c̓wet	bivalent	'bring in, fetch'