

CRACKLE, PLOP, TWINKLE: SOUND SYMBOLIC WORDS IN MONTANA SALISH

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1. INTRODUCTION. This paper is a preliminary analysis of sound-symbolic words in Montana Salish (Flathead), with a special focus on words with the shape $C_1VC_2C_2(C_2)$. The great majority of these words in Montana Salish are onomatopoeic noise words ('snap', 'crackle', 'pop', 'plop', etc.), but a few represent now-you-see-it-now-you-don't sights, e.g. 'twinkle'. Examples are *čóssss* 'the sound of a rattlesnake rattling', *mállil* 'a gurgling noise, as from bubbles', and *páqqqq* 'a bunch of little moving lights, for instance the sequins on a jingle-dress'. The topic here is whole sound-symbolic words, not sound symbolism in the form of phonological distortion for affect (which is common in Montana Salish, as in other languages of the Northwest and neighboring regions).

Formally, MSa sound symbolic words fall into four general categories. After describing the categories in §2, I will comment on their phonology and their degree of embeddedness in the language's morphological and syntactic structure (§3). In §4 I consider the question of productivity of the main processes by which the forms are derived and also their degree of conventionalization, as indicated by the existence of cognate forms in Spokane (a dialect of the same language as Montana Salish) and Colville-Okanagan (a closely-related Southern Interior Salishan language). The main body of the paper concludes with a few remarks about Montana Salish sound symbolism as compared with sound-symbolic patterns elsewhere in the world, especially in the Americas.

Finally, the Appendix contains all the examples that I have identified so far, together with all the sound-symbolic cognates in Spokane and Colville-Okanagan that I've found in Carlson & Flett 1989 and Mattina 1987, respectively. I would like very much to know how many of these formation types and specific forms recur in other Salishan languages, and I'm hoping that the examples in the Appendix will serve as a stimulus for cognate searches—specifically, for noise words—in other Salishan languages.

The first thing that needs to be said about Montana Salish (MSa) sound-symbolic words, unfortunately, is that it isn't always easy to identify them unambiguously. Certain formations, specifically the $C_1VC_2C_2(C_2)$ and the total-reduplication words, are exclusively sound-symbolic. But other formations, mainly the 'plain' words and the words with *-ilš*, are used for other functions besides noise words. In such formations, distinguishing noise words per se from words for the noise making action sometimes seems to be impossible. (It might be an easier task if I had more examples of noise words in texts, but I have very few. Almost all of my examples come from direct elicitations like 'What's your word for the sound of a ruffed grouse's drumming?'.)

Often speakers give a gloss that clearly indicates a noise word, even though the form of the word doesn't seem obviously onomatopoeic. So, for instance, *i čép* 'the sound of something soft, like a blanket, hitting the ground' and *i lčép* 'it's soft' are both formed from the root *čép*,¹ and the difference in meaning is arbitrary; only the expanded form *i čépppp* 'the sound of lots of soft things, like blankets, being put down' is unambiguously

marked formally as a noise word. But sometimes the gloss is itself ambiguous; a typical example is *čmčmílš* 'mouse squeaking', which may refer either to the action or to the noise itself, or possibly to both.

Of course it may be that some noise words are not sound symbolic at all. I have not found a definition of sound symbolism in the literature that would make it possible to separate noise words that are sound-symbolic from noise words that aren't. A well known definition of the world's most famous sound-symbolic category is Duke's characterization of the African ideophone as 'a vivid representation of an idea in sound' (1935:118, as cited in Childs 1994:179); this is itself a vivid characterization, but it doesn't suggest a usable criterion for deciding whether a given word is sound-symbolic or not. Hinton et al. list some typical characteristics of sound symbolism, in particular reduplication, unusual segments and suprasegmentals, and specific semantic and pragmatic fields which 'crop up again and again for sound-symbolic vocabulary' (e.g. 'mimicry of environmental and internal sounds') (1994:9, 10). But they don't claim any of these features as criterial, and in fact they are not diagnostic. For instance, in some languages at least some sound-symbolic words seem to be phonologically and morphosyntactically ordinary, so deviation from the language's canonical syllable structure, phonetic inventory, morphological composition, or other structural norms isn't a reliable criterion for membership in the category. Mimicry is itself difficult or impossible to define; *čép* doesn't strike me as particularly soft-sounding, for example, but it may well strike a Salish speaker, consciously or unconsciously, as soft-sounding. (I have not found it helpful to ask consultants for judgments about onomatopoeia, but my experience may not be universal.) In any case, although it is possible that there are valid criteria in the literature that I haven't found, I have included in this paper all promising candidates—all the noise words in my corpus, together with the few sight words that clearly belong here—without trying to arrive at a formal criterion for establishing sound-symbolic status.

2. CATEGORIES OF MONTANA SALISH SOUND-SYMBOLIC WORDS. I have identified four general categories of sound-symbolic words in MSa. First, there are 25 'plain' forms—forms with no reduplication and no suffix *-ilš* (example 1). Some of these are simple roots. Others are morphologically complex, for instance with an added lexical suffix. All the words in this category that I've found refer to noises, not sights. All the noise words consisting of a simple root (with or without the demonstrative particle *i*) seem to denote a one-time noise (1a-e), but a very few of the morphologically complex forms have to do with continuous or repeated sounds (e.g. 1f).

- (1) a. *i láy* 'a noise like the sound of car door closing'
- b. *i láq* 'the sound you make when you shake the wet blanket'
- c. *i lepéc* 'the sound of a stick hitting something'
- d. *i páw* 'the sound of anything cracking on a board, or a door slamming, or some similar sound'
- e. *cix* 't' 'the sound of glass smashing'
- f. *sx* 'óq'lqs 'the sound of snoring, the snore'

The most common category—though its frequency relative to the other categories may be a result of my special effort to elicit these forms—comprises words of the form $C_1VC_2C_2(C_2)$

I have 39 examples in this category. Where the instances of C_2 can be counted, most of the words have four of them; a few have only three. The instances can be counted when C_2 is an oral stop, an affricate, or a glottalized resonant; fricatives and most nonglottalized resonants are nonindividuated continuous sounds. I have more or less arbitrarily spelled the uncountable type with four instances of the C_2 . Some of these words are related to 'plain' forms, as with *i čép* and *i čépppp* above, or *i láý* (1a above) and *i láýi?i?i?* in 2a below.² Some of the forms in this category are also related to sound-symbolic words in *-lš*, e.g. *i mēllll* (in 2g below) and *mlmēllš* 'you keep seeing it moving'. As the glosses of *i čépppp* and *i láýi?i?i?* suggest, this formation is associated with such concepts as plurality and repeated action. But not always, or at least not always in the obvious senses: words like those in 2b-e below don't seem easy to characterize as involving plurality or repeated action. Still, all the words in this category refer to a noise of some duration, as the examples in 2 show. This makes the meaning difference between this formation and the *-lš* formation unpredictable, since both involve durative actions or states. Example 2 contains all four of the 'sight' words in this category.

- (2) a. *i láýi?i?i?* 'a rattling noise, like a wagon going along' (the same noise as for *i láý*, only continuing)
 b. *i čáxxxx* 'the sound of frying food'
 c. *i k'čččč* 'the creaking sound a tree makes when it's beginning to fall'
 d. *i x'áwuuu* 'the noise the wind makes'
 e. *i čússsa* 'rustling noise when you walk in dry brush, or pushing through brush'
 f. *i čik'k'k'k'* 'little shiny things sparkling, such as sequins on a jingle-dress or stars winking'
 g. *i mēllll* 'a bunch of things - you're not too sure what they are - going in and out of vision (e.g. watching through a picket fence and seeing a bunch of horses go by)'
 h. *i múk'k'k'k'* 'moving fast invisibly'
 i. *i páqqqq* 'a bunch of little moving lights'

Words in the third category, which is about as common as the first (20 examples), have the form $C_1(V)C_2 C_1VC_2-lš$; examples are given in 3. Like the second category, this one indicates durative noises, often with a sense of plurality or repeated action (see the examples in 3). Unlike the second category, however, this formation is not confined to sound-symbolic words; it has the more general function of indicating durative actions or states. Moreover, the reduplication pattern in this formation is by no means confined to onomatopoeic words and words with comparable meanings: it is one of the language's most common plural formations. Some of the eight words in this category may be sound symbolic, for example *mēlmēllš* 'moving around invisibly' (e.g. under a blanket), but others seem (at least to me) not to be plausibly sound symbolic, e.g. *q'áq'áilš* 'he's having a hard time'. A few of the forms in this category correspond to forms in the second category, sometimes with slight differences in meaning but with no clear pattern of semantic differentiation: compare

mēlmēllš with *i mēllll* 'moving fast invisibly' (faster than with *mēlmēllš*), and compare also 3d below (the prefix *k'č-* means 'under') with *i x'čáúúúúúúúúúú* 'the noise of cracking sticks, the sound of a large animal moving through the brush'. Several of the words in this category correspond to noise words in Spokane, but, interestingly, none of the Spokane words has the suffix *-lš*; see 3b, for instance.

- (3) a. *lulíwš* 'a bell ringing' (cf. *i líwuuu* 'the sound of ringing', and also Spokane *líwšlíwšlíwš* 'the sound of continuous ringing of bells', vs. Spokane *líw* 'sound of a bell')
 b. *su?auwšš* 'the sound of whispering' (cf. the Spokane form *sú?áú?áú?* 'sound of whispering')
 c. *lplóplš* 'the sound of sniffing after someone has been crying'
 d. *k'č-x'čáúúúúúúúúúú* 'the noise made by a large animal moving through brush, crackling'
 e. *mlmēllš* 'you keep seeing it moving' (cf. *i mēllll* in 2a above)
 f. *čóčóššš* 'sound of hollering' (cf. *es čóš mš* 'hollering/yelling while dancing')
 g. *ič'č'č'š* 'something trembling, shaking, moving rapidly back and forth'
 h. *lx'lx'ššš* 'the sound of crumpling paper, the sound of a mouse moving around, anything rattling'

The fourth and last category comprises forms without the suffix *-lš* but with some kind of reduplication, though not the same type as in the second category. This category, with only 10 examples, is something of a hodgepodge, an 'everything else' category; it's not clear that all these forms belong together. A few forms have the same reduplication pattern as in the third category, e.g. *s-n-nílmlšlč'* 'echo, echoing sound' (the two prefixes are, in order, the nominalizer and the locative 'in'). One form has suffixed C_1C_2 reduplication: *uláqlq* 'the noise of little frogs singing' (cf. Spokane *žuráq?uráq* 'sound of a frog croaking in the early spring' and Colville-Okanagan *s-war'ák'=xn* 'frog'). And several words have total reduplication, with each vowel stressed; examples are given in 4. This last type, like the second category of forms (with two or three C_2 repeats), is very obviously onomatopoeic: it occurs in Spokane too (4d-f), and apparently also in Colville-Okanagan as well, though the gloss in the Colville-Okanagan example below (4g) would not necessarily refer to the sound itself.

- (4) a. *cácácácá* 'the hollering noise that someone makes when getting beaten up' (cf. Spokane *cácácá* 'wailing sound, sound of a tantrum, pitiful', and Colv. Ok. *caʔ caʔ cáʔ* 'holler, cry')
- b. *i púmpúmpúpúm* 'sound of a drum (big or little)'
- c. *íáíáíáíá* 'a sound of anything flopping around on the ground (like a fish out of water), or the sound of slapping at mosquitoes'
- d. Spokane *líwíwíwíwíw* 'sound of continuous ringing of bells'
- e. Spokane *lápláplápláp* 'sound of feet slapping the floor'
- f. Spokane *xáwxáwxáw* 'sound of chewing'
- g. Colv.-Ok. *pás pás pás pás* 'Coyote's call to his helpers'

3. THE STRUCTURE OF MONTANA SALISH SOUND-SYMBOLIC WORDS. Phonologically, there is nothing especially startling about any of these MSA words—with the sole exception of the (possibly marginal) form *xʷssá* 'the sound an arrow makes flying by', which lacks a regular vocoid vowel. All the words in the 'plain' and *-íá* categories, in fact, are perfectly ordinary MSA words, phonologically, morphologically, and syntactically; they are structurally indistinguishable, as far as I can tell, from non sound-symbolic words. The distribution of root-initial consonants in the sound-symbolic words as a group, however, including all four categories (for a total of over 90 examples), is somewhat skewed in several respects. The language's most common root-initial consonants are the labials /m/ (78 roots) and /p/ (74 roots), and these appear as *C*₁ in several sound-symbolic words each. But the next two most common root-initial consonants are /l/ (70 roots) and /t/ (67 roots), and /l/ is root-initial in eight sound-symbolic words, while /t/ appears as *C*₁ in only one. Glottalized /é/ is *C*₁ in eight of the words, twice as many as /c/, although they are about equally common as root-initial consonants in the general vocabulary. Otherwise there is no gap between paired glottalized and nonglottalized consonants that isn't accounted for by differences in overall relative frequencies as *C*₁. The resonant consonants /l, w, y/ appear as *C*₁ in sound-symbolic words with a greater frequency than would be expected from their relative overall root initial frequencies. Dorsal fricatives, especially /xʷ/, are fairly common as *C*₁ in these words (/xʷ/ with 10 words, is the most frequent *C*₁ in the list), but dorsal stops are conspicuously rare: no uvular stops at all appear as *C*₁, and velar stops appear only once each, though all five dorsal stops are rather common as *C*₁ in the overall list of roots.

There are a number of interesting phonological features in the second and fourth categories, *C*₁VC₂C₂C₂(C₂) and the other category involving, sometimes, total reduplication. The most striking of these features is the *C*₁VC₂C₂C₂(C₂) formation itself: like other Salishan languages, MSA has several productive reduplication processes, but none involves more than two or at most three identical consonants in a row. This makes the four consonant sequences in this category remarkable. (They do not, however, violate any general syllable-structure rules, because there is in principle no limit on the number of consonants that can occur in sequence in a monosyllabic MSA word: there are seven obstruents in a row, for instance, in *xʷčšsqá* 'a person whose job it is to take care of stock, a shepherd', and similarly complex forms are rather easy to find.)

Another feature of this formation concerns glottalization: almost always (there are a very few exceptions), when the root's *C*₂ is a glottalized oral stop or affricate, all but the final instance of the *C*₂ is deglottalized in the sound-symbolic word. Deglottalization is not unique to this formation in MSA; it affects the first of two glottalized oral stops or affricates in sequence elsewhere in the language too, though not consistently. Examples are found, for instance, in unstressed derivatives of the root *túʔ*, e.g. *tʔntés* 'he put one thing down'. The only unusual thing about deglottalization in the *C*₁VC₂C₂C₂(C₂) forms, then, is that more than one nonfinal stop or affricate is deglottalized, including those that are not immediately followed on the surface by a glottalized stop or affricate. Moreover, if the *C*₂ is a glottalized lateral affricate, as in *i xʷíxʷxʷxʷ* 'the noise of cracking sticks' and *i xʷóxʷxʷ* 'the sound of hard things crunching together', deglottalization produces an unglottalized lateral affricate—a phone that does not otherwise occur in the language, except perhaps as a result of deglottalization in a few other CC sequences where the affricate is the first consonant and the second consonant is a glottalized oral stop or affricate. All the other examples I've found of words in this category with a glottalized stop or affricate *C*₂ are given in 5 (a-g), together with examples showing that deglottalization does not affect glottalized resonants (5h-j). I've included Spokane cognates, where possible; note that, to judge by these forms, Spokane does not undergo this deglottalization process.

- (5) a. *i kʷícccc* 'the creaking sound a tree makes when it's beginning to fall' (cf. Spokane *kʷíccé* 'sound of a falling tree')
- b. *i lóqʷqʷqʷ* 'the sound of a stomach growling'
- c. *i páccccc* 'a chipmunk noise; the noise of diarrhea and farting' (cf. Spokane *páccé* 'sound of flatus and diarrhea simultaneously')
- d. *i páqqqq* 'a bunch of little moving lights' (cf. Spokane *hi páqqqq* 'sound of tinder-dry grass burning')
- e. *pátttt* 'a cow is pooping, the sound of a cow pooping' (cf. Spokane *páttt* id.)
- f. *i xʷíqqq* 'the sound of cracking'
- g. *i yíqqqq* 'a creaking noise' (cf. Spokane *yíqqq* 'sound of lots of creaking bones')
- h. *i láyíʔíʔíʔ* 'a rattling noise'
- i. *i mállll* 'a gurgling noise'
- j. *i tʔllll* 'the sound of tearing'

Another point worth mentioning about this category, though it is not an oddity of any kind, is that vocoid consonant phonemes vocalize when not next to a vowel phoneme, according to the usual rules. Nonglottalized consonants are uncomplicated: *i líwuuu* 'the sound of ringing' (the root is *líw*) and *i xʷáuuu* 'the noise the wind makes' (root *xʷáw*). In the form *i lóoooo* 'the sound of rain hitting', the first unstressed *o* was presumably originally /ʷ/, the last three are regular vocalizations of the labialized pharyngeal. A glottalized vocoid consonant regularly vocalizes as vowel plus glottal stop in MSA, and /yʷ/ does so three times in 5h.

The only noteworthy phonological feature of words in the fourth ('everything else') category is that the forms with total reduplication have one stress per syllable, unlike ordinary words in the language, which have only one stress per word; examples are given above in 4. Of course it is possible that these forms should be treated, not as complex lexical units, but as sequences of several repeated words, as in an English sentence like *That was a very very very weird movie*. I'm analyzing them, provisionally, as single words because the speakers seem to treat them as units—not just MSA speakers, but apparently also Spokane and Colville-Okanagan speakers, given the spelling of the Spokane examples in Carlson & Flett 1989 and the one Colville-Okanagan example I've found (4a above). If they are single words, then the stress pattern is remarkable, a clear identifier of a sound-symbolic word.

As noted at the beginning of this section, all examples of 'plain' and *-ilš* noise words are phonologically and morphosyntactically ordinary: they display no differences at all from non-noise words, aside from skewing in the distribution of their root-initial consonants. (I should add, though, that I haven't made an exhaustive search for other differences—not just in the C_2 , which is harder to check for distributional skewing than the C_1 , but in their occurrence as bare roots in the 'plain' category; and there are probably other structural factors that might set them apart.) Therefore, although the examples in each of these two categories belong to a single lexical subclass by virtue of their semantic unity, it is not yet clear whether they constitute a single structural subclass or not.

The situation is different with the $C_1VC_2C_2C_2(C_2)$ and total-reduplication formations. Syntactically, these are both interjections. When I asked my consultants for a sentence using *i púllll* 'splash!', for instance, they gave me *Nem i púllll sqlew sáps de člspétčm* 'The heaver's tail will go splashhhhhh when he hits the water on purpose' (lit. 'will splashhhhhh heaver his tail when he hits on water').

Both of these formations are also inert morphologically, as far as I can tell, except for the presence of a preceding demonstrative particle *i*, which carries a stative (though not necessarily a durative) force—and which occurs also with some 'plain' forms, but never with a form that has the suffix *-ilš*. Roughly half of the words of the $C_1VC_2C_2C_2(C_2)$ and total-reduplication types have roots that are unique to these formations in my data. Although at least some of these exclusively sound-symbolic roots probably do occur in non-sound-symbolic formations as well, some of them are likely to be exclusively sound-symbolic in fact. Examples are *i čáxčxčxčx* 'a knocking noise', *i hámmmm* 'a buzzing noise', *i čássss* 'hissing noise of water or grease on something hot', *i lóqčqčqčq* 'the noise of a stomach growling', *i xčáuuuu* 'the noise the wind makes', and *čáčáčá* 'hollering'.

The rest of the roots in words of these two types occur in other formations as well, sometimes including other sound-symbolic formations. So, for instance, three different sound-symbolic words are formed from the root *mél* 'quiver (leaves); glimpse something disappearing': *i mél* 'the sight of something moving, you just see it and it disappears', *i méllll* 'a bunch of things—you're not too sure what they are—going in and out of vision', and *mlmélš* 'it keeps moving, showing and then disappearing, you keep seeing it moving'. In cases where the root occurs in formations other than sound-symbolic ones, its morphosyntactic behavior is identical to that of any other root. An example is the root *xčép* 'spread', which occurs in two sound-symbolic formations—*i xčép* 'the sound of something like a blanket being spread' and *xčépppp* 'the sound of a bunch of blankets being spread'—and in all ordinary contexts as well, e.g. *xčépn* 'I spread it (a blanket or some similar thing)'.

4. PRODUCTIVITY AND CONVENTIONALIZATION OF MONTANA SALISH SOUND-SYMBOLIC WORDS. Productivity is hard to judge for MSA sound-symbolic words, partly because of the limitations of my data; it is quite possible that some noise words my consultants gave me were neologisms. The one phonologically unique word, *i xčáááá* 'the sound of an arrow flying by', seemed to be a new thought for them, for instance, and at least a few of the $C_1VC_2C_2C_2(C_2)$ words are likely to have been invented on the spot too. I do have definite evidence that the *-ilš* formation, at least, is productive: when I asked for a word for the lowing of a bull or the mooing of a cow, one elder jokingly said that it could be *mumúwš* 'the sound of mooing'—and then assured me hastily that it's not a REAL Salish word. Of course it isn't; but the fact that it could be formed as a joke shows that the formation itself is alive. In fact, the suffix *-ilš* is very widely used in MSA in general, so it is not surprising if it is as productive in this semantic domain as in other parts of the lexicon.

The question of conventionalization is easier to address, both because the same words turned up in different field sessions in different years—indicating that they were part of the lexicon and not one-time inventions—and because many of the words are either precisely cognate with noise words in Spokane and occasionally in Colville-Okanagan or related to other noise words in those languages. The complete list of cognates and related noise words is in the Appendix; here are a few examples:

- (6) a. *čfxč* 'the sound of glass smashing', Spokane *čfxč* 'sound of fine glass smashing'
- b. *i čép* 'the sound of something soft, like a blanket, hitting the ground', Spokane *čép* 'soft; sound of something soft hitting the ground'
- c. *i láy* 'a noise like the sound of car door closing', Spokane *lay* 'a single tinny sound, like a tin pan hitting the floor'
- d. *i láyi?i?i?* 'a rattling noise, like a wagon going along', Spokane *láyi?i?* 'sound of many tin objects hitting the floor'
- e. *i čáxxxx* 'the sound of frying food', Spokane *čáxxxx* 'sound of frying food'
- f. *čálčálčál* 'a clapping sound', Spokane *čálčálčál* 'sound of a galloping horse'
- g. *čáčáčá* 'hollering', Spokane *čáčáčá* 'wailing sound', Colv.-Ok. *cač-cač-cač* 'holler, cry'
- h. *i lfwuuu* 'the sound of ringing', Spokane *lfwlfwlfw* 'the sound of continuous ringing of bells'
- i. *su?suwš* 'the sound of whispering', Spokane *sú?su?su?* 'sound of whispering'

The existence of cognates and related forms makes it overwhelmingly likely that the words have a history stretching back over several to many generations. There are other possibilities: a noise word could have been borrowed from one of the other languages, or the same sound-symbolic word could have been invented in two or even all three of the languages. But cognacy is much more likely. Most of the cognates I have are from the 'plain' and $C_1VC_2C_2C_2(C_2)$ categories, and most are precisely cognate with Spokane forms. (In fact, my systematic search for MSA noise words began when I noticed one or two matchings between MSA and Spokane $C_1VC_2C_2C_2(C_2)$ forms; I then used the list of words under 'sounds'

in Carlson & Flett 1989 as a jumping off point for my own elicitation of noise words.) The most interesting thing about these cognates is the evidence they provide for the history and stability of the $C_1VC_2C_2C_2(C_2)$ formation, which is exclusively sound symbolic, phonologically unusual even within Salishan, and outside the normal morphosyntactic system. Even if some of the forms in this category are recent innovations, the evidence indicates that, once formed, a $C_1VC_2C_2C_2(C_2)$ word is easily integrated into the language's lexicon.

5. CONCLUSION: SOUND SYMBOLIC WORDS IN MONTANA SALISH AND IN OTHER LANGUAGES I have not attempted to search the literature for material to compare with my MSA data, but a few comparative comments can be made. All but a handful of my examples are noise words, and these are an exact match for two of the common characteristics of sound symbolism mentioned by Hinton et al. (1994:9-10, and see §1 above): they are based on 'mimicry of environmental and internal sounds', and three of the four categories involve some sort of reduplication. But the MSA words, as we saw above, do not have any unique phonological features, unlike sound symbolic words in many other languages.

Not surprisingly, given their imitative and iconic nature, the MSA forms with total reduplication belong to a type of sound-symbolic word that is found in a great many languages around the world. Here are three typical examples: the word for 'insistent rapping on the door' is *kpu-kpu-kpu* in the African language Kisi (Childs 1994:190), the word for 'the sound of a grizzly bear clacking its teeth' is *kapkakap* in the Algonquian language Mesquakie (Fox) (Lucy Thomason, p.c. 1999), and the word for 'a fish's tail flopping on the ground' is *polpolpol...* in the Australian language Yir-Yoront (Alpher 1994:173). It's worth noting that in many languages such forms can be extended at will, as Alpher notes for this and similar Yir-Yoront forms; this feature contrasts with MSA words with total reduplication, which seem to be limited to three instances (and likewise in the Spokane and Colville-Okanagan cognates).

I have not found any very close matches between the MSA $C_1VC_2C_2C_2(C_2)$ formation and sound-symbolic words in other languages—especially as the MSA formation seems to be conventionally limited to three or four instances of the C_2 . There are, however, numerous examples of repetition of a final syllable or VC half-syllable elsewhere. Pomo, for instance, has forms like /kililililil/ 'rumbling, thundering, roaring', but here again the final VC may be 'alternated indefinitely to indicate prolongation, pulsation,....' (Oswalt 1973:180). In definitely long final CV repetition occurs (or occurred) in Lower Chinook (Boas 1911:636), e.g. [hálélélélélélél] 'noise of flight of an arrow'. Interestingly, though, one of the most similar formations I've found occurs in Nez Perce, whose speakers have had close contacts with MSA speakers (apparently including mutual or one-way structural interference) over two hundred years or more. Nez Perce, like Pomo, has VC reduplication, but the few forms I've seen limit the repetitions to two or three, as in MSA: *yógogogog* 'tumbling out of Coyote's excrement-children', *čáakakak* 'west wind', *čálalal* 'katydid' (Aoki 1994:16).

Probably the main conclusion that should be drawn at this point is that a great deal of work is still needed on the identification and analysis of sound-symbolic words in MSA, and on MSA sound symbolism more generally. And in a broader context, a comparative study of noise (and other sound-symbolic) words in Salishan languages seems likely to be rewarding.

APPENDIX

Below are all the examples of sound-symbolic words that I have found so far in Montana Salish. The entries also include the Spokane and Colville-Okanagan cognates that I've found in Carlson & Flett 1989 and Mattina 1987, respectively. (To save space, Colville-Okanagan is designated simply as Colville below.) In most cases there is no direct cognate for a MSA form; sometimes Spokane or even Colville-Okanagan has a sound symbolic word in a different formation, but sometimes the cognate forms are apparently not sound symbolic at all. The entries are organized according to the formation categories: first the forms with no reduplication and no suffix -*liš*, then words of the form $C_1VC_2C_2C_2(C_2)$, then forms with prefixed reduplication and the suffix -*liš*, and finally forms with non- C_2 reduplication and without -*liš*. In spite of my attempt to avoid ambiguous forms, some of the words below may not be sound-symbolic forms at all—that is, they may refer to the action of making the noise rather than to the noise itself.

1. 'Plain' forms (25 examples):

cix't 'the sound of glass smashing'. Spokane *cix'* 'sound of fine glass smashing'.

čalé, čaalé 'rattle made of deer rawhide with rocks inside'. (This is likely not to be a noise word itself, but cf. the Spokane noise word *čal* 'sound made by falling sticks or spurs'. (Cf. also Colville *ča?-tán* 'rattle (of snake)').)

čipána 'the sound a chickadee makes'. (This form might have vowel reduplication.)

i čép 'the sound of something soft, like a blanket, hitting the ground'. (Cf. *i čépppp* below 'like we're all making a noise putting our blankets down'.) Spokane *čep* 'soft, sound of something soft hitting the ground'.

es-čoi-mí 'yelling/sounds made while dancing (a specific type of sound made while doing traditional dances)'. This may not be a noise word per se; cf. Čn *čoiúú* 'I made that noise (i.e. that special noise)' (and cf. also Spokane *čoi(t)* 'shout'). (Cf. *čočoliš* below.)

i ilil' 'the sound of a branch scraping'. Compare *i ililil'* 'the sound of branches scraping, or of a horse or buffalo wallowing in dust or mud, or some similar sound'.³

i láy 'a noise like the sound of car door closing'. Compare *i láyí?i?* 'a rattling noise, like a wagon going along', below (the same noise, only continuing). Spokane *lay* 'a single tinny sound, like a tin pan hitting the floor' (and *láyí?i?* 'sound of many tin objects hitting the floor').

i láq' 'the sound you make when you shake the wet blanket'.

i lepéč 'the sound of a stick hitting something'. Spokane *lepéč* 'sound of a flat, heavy object hitting a flat surface'.

šáw 'the sound of stepping or falling in the mud'. (Compare the non sound-symbolic root, as in *i šawáčalex* 'muddy ground', and cf. Spokane *hi šáw'č* 'it's muddy'.)

i mēl 'the sight of something moving, you just see it and it disappears'. Compare *imlélí* 'you keep seeing it moving' and *i mēlll* below. (The root is *mēl*, but these noise words are not glottalized.) Spokane *hi mēl* 'it appears and then disappears in front of you as when you are watching someone walk through trees'.

i páw 'the sound of anything cracking on a board, or a door slamming, or some similar sound'. Compare pupáwli 'making a cracking/slamming sound'.

i łapáx 'the sound of something hitting the water; something making that sound'. Spokane łapáx 'sound of a huge splash when a heavy object hits the water'.

i łáq 'a bursting noise, the sound of a fire cracking or a balloon bursting'; i łáq't 'one sound, one pop, as when a tree splits in the winter'. (See i łáq'q'q' below.)

łiq', i łiq' 'a smashing sound, as of bugs or cherries or anything that makes such a noise when smashed'. Spokane łiq' 'small bursting sound, such as that of a louse being smashed between the fingernails; sound of a small-gauge shotgun'. (Cf. Colville łiq'-t 'burst, explode'. łiq'-q'-iq' 'shot, explosion'. but it's not clear whether these Colville words refer to the noises or to the making of the noises, and it's also not clear whether the Colville cognate belongs with this entry or the preceding one.)

łmóq' 'the sound of something you pull off, like hair from your head, or pull out, as when you pull a root out of the ground'. Spokane łamáq' 'sound of a big root being pulled out of the ground'.

łwáq 'the sound of a string or rope breaking'; but this word is also used to refer to the breaking, not only to the sound of breaking. Spokane ławáq 'sound of a sudden snapping of string or rope'. Cf. Colville łwqa-m 'break a rope or string' (apparently not a noise word).

i x'áp 'the sound of something like a blanket being spread'. Compare x'ápppp below, and cf. x'ápn 'I spread it (a blanket or some similar thing)'. Spokane x'ep 'to lay out, to spread out flat; sound of spreading out a blanket or table cloth'. (Cf. Colville x'ip-m 'spread out'—not a noise word.)

i x'áx 'a crunching, biting noise, a gnawing sound; chewing your fingernails'. (Cf. x'áxłli below, and cf. Spokane x'ł(f) 'chew, eat'.)

i x'íq 'a cracking noise, as when a tree begins to fall'. (Compare i x'íqqq below.)

x'íq' 'the sound of something being poked (not necessarily a loud sharp sound)'. (Cf. x'q'x'íq'li 'the sound of a stick poking around'.) Spokane x'íq' 'sound of a stick being poked around in a jar or can'.

x'óx 'a crackling noise', x'óxéne? 'a crackling noise; cracklins, what's left over from rendering grease, noisy when you chew it'. (Cf. i x'óxłł below.)

es x'oncó 'a deer snorting; the sound of a deer snorting'. Colville x'n-cfat 'snort of an animal' (and cf. Colville x'en 'noisy or roaring sound').

sx'óq'lqs 'the sound of snoring, the snore'. (-lqs is a lexical suffix, perhaps meaning 'nose'. Cf. esx'óq'lqsi 'she's snoring'.) Spokane x'óq' 'sound a pig makes, sound of snoring'. (Cf. Colville: x'aq'-lqs-m 'snore' (apparently the action, not the noise).)

Sayín 'a growl'. (But this refers to the action, not to the actual sound.)

2. C₁VC₂C₃C₂(C₃) words (39 examples):

i cłk'k'k' 'little shiny things sparkling, such as sequins on a jingle-dress, sparks flying up, or stars winking'. (Cf. isócłk' 'what I made hot (e.g. an iron)').

i cússss 'rustling noise when you walk in dry brush, or pushing through brush'. (Cf. en cecúslí 'I walked through dry brush or leaves, rustling'.) (Cf. Colville n-cus-ca=cn 'purple

aster, Aster conspicuus)—which, according to one of Mattina's consultants, is derived from a word meaning a rattling noise.)

i éáxxxx 'the sound of frying food'. (Cf. en eséáxi 'I'm frying something'.) Spokane éáxxxx 'sound of frying food'.

i éóssss 'rattling noise, as of rattlesnakes rattling or deer hoof staffs rattling'. (Cf. Óósmis 'he rattled it'.)

i cépppp 'the sound of a lot of blankets being put down (or a similar sound)'. (Cf. i cép 'the sound of something soft hitting the ground, like a blanket being put down'.)

i éáx'x'x'x' 'a knocking sound—woodpecker noise, sound of carpenters hammering, sound of knocking as of a salt cellar being set down sharply on a table'. (Cf. éx'éx'áli below.) Spokane éax' 'knocking sound', and e.g. éx'x'áx' 'he made a knock-knocking sound'.

i hámmmm 'a buzzing sound, e.g. the sound of a motor, or of bees or flies buzzing'. (Cf. Spokane ham 'droning sound, sound of a motor, sound of a fly'.)

híiip 'the sound of a ruffed grouse drumming'. (This word fits into this category if—as is possible—its underlying form is hiyyyy. Cf. eshípi 'a ruffed grouse is drumming'.)

i k'ássss 'the hissing sound of steam, when you pour water on something hot; the sound of grease dripping continuously on a fire'. (Cf. k'ask'as below.) Spokane k'assss 'sound of fat frying' (and cf. also Spokane k'asa 'sound of something scorching and shriveling up').

i k'íccéc 'the creaking sound a tree makes when it's beginning to fall'. Spokane k'íccé 'sound of a falling tree' (and cf. Spokane k'ecéc 'sound of a tree falling, breaking other tree limbs as it goes').

i láji?i? 'a rattling noise, like a wagon going along' (the same noise as with i láy above, only continuous). Spokane láji?i? 'sound of many tin objects hitting the floor' (and cf. Spokane láy above.)

i líqqqq 'the noise of a lot of threads breaking, e.g. a shirt coming unraveled when you tear it'. Spokane líqqqq 'sound of many threads breaking simultaneously' (and cf. Spokane líq 'sound of breaking thread or string').

i lfwuuu 'the sound of ringing, as of a bell, or a tin plate hitting the floor and bouncing around, or change falling on the floor, or even your ear (when your ears are ringing)'. (Cf. Spokane lfwlfwlfw 'the sound of continuous ringing of bells'.)

i lóq'q'q'q' 'the sound of a stomach growling'. (Cf. ló'lóq'li 'a stomach is gurgling, there's a lot of water in it making noise'.) (Cf. Spokane ló'q'q'q' 'sound of a great amount of water in the stomach'.)

i lóx'x'x'x' 'the sound of wagon wheels rolling'. (Cf. Spokane lx'x'óx' 'sound of many hard-soled shoes on a floor'.)

i lóoooo 'the sound of rain hitting, coming down'. (Cf. Spokane lo 'sound of a steady rain'.)

i xóq'q'q'q' 'the sound of knuckles cracking'. (Cf. xóq'm 'he cracked his knuckles'.) (Cf. Spokane xóq'(ú) 'poke; sound of a popping joint'; and Colville n-xóq'-úpa 'spank', which is not a noise word.)

i xóx'x'x'x' 'the sound of something round (e.g. marbles or huckleberries) rolling around'. (Cf. Spokane x'x'x'x'óx' 'sound of round objects falling into a container'.)

i málíl 'a gurgling noise, as from bubbles or foam'. Spokane málíl(l) 'sound of a gurgling stomach or brook, sound of liquid gurgling in a bottle as one drinks without stopping'.

i mélll 'a bunch of things—you're not too sure what they are—going in and out of vision (e.g. watching through a picket fence and seeing a bunch of horses go by)'. (Cf. i mél above and míméllá below.)

i múk'k'k' 'moving fast invisibly' (faster than with i mélll).

i pátttt 'the sound of gurgling (as of boiling water)'. Spokane pátttt 'sound of gurgling or bubbling, expelling air from diarrhea' (and cf. Spokane pátpátpát 'bubbling sound of a boiling pot').

i púlll 'a big splash, the sound of a tree or something else big falling into the water, the slap of a beaver's tail in water' (as in the sentence Nem i púlll sqlew súps ne čspétk'm 'The beaver's tail will go splashhhhh when he hits the water on purpose' (lit. 'will splashhhhh beaver his tail when he hits on water')). (Cf. Spokane pul 'splash, sound of a splash'; and cf. Colville s-p'ul 'spray'.)

i pácccc 'a chipmunk noise; the noise of diarrhea and farting'. Spokane páccé 'sound of flatus and diarrhea simultaneously'.

i páqqqq 'a bunch of little moving lights, like sequins on a jingle-dress or vest, or Christmas tree lights, or the lights of a city that you see twinkling when you're moving close to the city, or the sparks you see when grass is burning'. (One elder commented that the longer the word is, the shinier the sight is—but on all repeats the elders gave only this one form.) Spokane hi páqqqq 'sound of tinder-dry grass burning'.

páttt 'a cow is pooping, the sound of a cow pooping'. Spokane pátt 'sound of cow pies hitting the ground'.

qéylll 'the sound of water falling, sound of a waterfall'. (Cf. the Pend d'Oreille place name N-qeyt-k'u-m 'place of the sound of water falling', the falls near the mouth of the Swan River in Bigfork, MT.)

i táq'q'q'q' 'the sound of a fire crackling, the sound of popping wood, of firecrackers popping'. (See i táq' above—just one pop.)

i tllll 'the sound of tearing'. (Cf. tlllís 'he tore his shirt'.) Spokane tllll 'sound of yardage being torn apart'. (Cf. Colville tllá-m 'tear open'.)

i úx'x'x'x' 'the noise of a fire crackling'.

i x'áwuuu 'the noise the wind makes'.

i x'épppp 'the sound of a bunch of blankets being spread'. (Cf. i x'ép above.)

x'áááá 'the sound an arrow makes flying by'.

i x'íx'x'x' 'the noise of cracking sticks, the sound of a large animal moving through the brush'. Only the last affricate is phonetically glottalized. (Cf. k'í-x'x'x'íx' below.) Spokane x'íx'x' 'sound of cracking sticks'. (Cf. also Spokane x'íx' 'sound of cracking sticks, such as kindling being broken up', čl-x'íx'-i-s 'he broke sticks to represent objects of value to be gambled at a stick game'; and Colville x'íx'-nt 'break things (plural objects)').

i x'íqq 'the sound of cracking'. (Cf. i x'íq above.)

i x'óx'x'x' 'the sound of hard things (e.g. rocks) crushing or crunching together'. Only the last affricate is glottalized. (Cf. x'óx' above.)

i yáxxxx 'the sound of lightning'.

i yíqqqq 'a creaking noise, like the noise made by dry trees rubbing together or a creaking floor'. Spokane yíqqq 'sound of lots of creaking bones'. (Cf. Spokane yíq 'sound of creaking bones, sound of creaking timbers'; and Colville n-yq=isk'it=m 'jump and groan'.)

i 'óx'x'x'x' 'the sound of roaring water or of loudly running water, the sound of a toilet flushing'.

3. Words with -líá (20 examples):

čí'líá 'it's squealing'. (This may refer to the action and not the sound; if it does, it doesn't belong here. It is the only unreduplicated (possible) noise word with this suffix that I've found. This is in any case a singular form; see the plural form below.) (Cf. Spokane čí' 'squeaky sound of a bird or mouse'.)

čóč'líá 'they're squealing (pigs, babies, baby birds, etc.)'. (Cf. the singular čí'líá just above.) čmčúmlíá 'mouse squeaking'. (Noise word?)

čóčóslíá 'sound of hollering'. (Cf. esčóslí 'hollering/yelling while dancing'.)

(Cf. čx'čx'áslíá 'a knocking or pounding sound, the sound of teeth chattering'. (Cf. i čáx'x'x'x' above.)

i'í'líá 'something trembling, shaking, moving rapidly back and forth'. (This might not fit here—the suffix might actually be -líá 'motion' instead.)

lulíwíá 'bell ringing'. [But does this refer to the movement of the bell or to the sound? Cf. i líwuuu 'the sound of a bell ringing'.] (Cf. Spokane líwíwíwíwíwí 'the sound of continuous ringing of bells'.)

lx'lx'líá 'the sound of crumpling paper, the sound of a mouse moving around, anything rattling'. (Possibly this is connected with i lóx'x'x'x' above.)

lplóplíá 'the sound of sniffing after someone has been crying'.

míméllíá 'it keeps moving, showing and then disappearing, you keep seeing it moving'. (Cf. i mél and i mélll above.)

m'ímúlíá 'moving around invisibly (e.g. under a blanket—not as fast as i múk'k'k'k', q v)'. mumáwíá, múmáwíá 'the sound of meowing' (the second form is said to be used if the sound is really loud).

ptptáslíá 'the sound of splatting when something soft (rotten fruit, cow pies, etc.) hits the ground'. (Cf. pátttt above, and cf. also ptát 'something soft (like loose excrement) fell out', also Spokane pátpátpát 'bubbling sound of a boiling pot'.)

pupáwíá 'making a cracking or slamming sound'. (Cf. i páw above.)

su?suwíá 'the sound of whispering'. (Cf. the Spokane form sú?su?su? 'sound of whispering'.)

uhewlíá 'a dog keeps barking continuously'. (Noise word?)

?u?wíá 'making noise hollering for help, the sound of a person shouting'.

x'x'x'líá 'a chewing noise, the sound of chewing (e.g. the sound of a dog chewing a bone or a person chewing hard candy or a worm chewing on wood)'. (Cf. i x'éx' above.)

k'í-x'x'x'íx' 'the noise made by a large animal moving through brush, crackling'. (Cf. i x'íx'x'x' above.)

kʷi xʷxʷʷlā 'the noise made by a large animal moving through brush, crackling'. (Cf. i xʷʷxʷxʷ above.)

xʷqʷxʷqʷlā 'the sound of a stick poking around'. (Cf. xʷqʷ above.)

4. Forms with other kinds of reduplication and without -lā (10 examples):

cáćáćá 'hollering (maybe for help) when you're getting beaten up'. (Cf. Spokane cáćáćá 'wailing sound, sound of a tantrum, pitiful'; and Colville caʃ-caʃ cáʃ 'holler, cry'. Presumably the MSA and Spokane forms originally had a final pharyngeal consonant.)

i ilikʷ 'the sound of branches scraping, or of a horse or buffalo wallowing in dust or mud, or some similar sound'. (Cf. the singular i ilikʷ above.)

kʷakʷas 'sound of grease dripping on the fire'. (Cf. i kʷássa above.)

i púmpúmpúmpú 'the sound of a drum (big or little)'. This word may be related to the root páw 'clunk, crack, slam (as, the sound of a door slamming or a drumbeat)', where the Montana Salish word for 'a drum' is entered: pu mín. But páw clearly has no C₂ m; compare i páw 'the sound of a door slamming' and pupáwli 'making a cracking or slamming sound', both of which appear under other headings in this Appendix. (Cf. Spokane pum 'sound of drum beat', pum ín ín 'a drum'; Colville pumín 'a drum'.)

es áćí-ín i 'shuffling' (Noise word? Cf. Colville n zik zik=cn 'purple aster, Aster conspicuous [lit. 'shuffling noise'])

tutututututu 'the noise made by a male wild chicken during mating season'. (Cf. es-tkʷkʷ-mí 'a wild chicken making noise'—probably not a noise word.)

i táltáltál 'the sound of anything flopping around on the ground, like a fish out of water; the sound of slapping, as at mosquitoes'; also táltáltál 'a clapping sound, anything that's making a noise like that'. (Cf. kʷ íltíltáls 'you're slapping at mosquitoes'.) (Cf. Spokane táltáltál 'sound of a galloping horse'.)

uhéwéhéw 'it's howling'. (Noise word?) (Cf. Spokane wéhéwéhéw 'sound of barking' and Colville wah wáh m 'bark, holler'.)

uláqlq 'the noise of little frogs singing'. (Cf. Spokane ?uráq?uráq 'sound of a frog croaking in the early spring'; and Colville s-wár-ák=xi 'frog', which clearly is not a noise word.)

xáwxáw 'crunching snow or ice; the sound made when you eat snow or ice' (example from Mengarini et al. 1977:79). Spokane xáwxáwxáw 'sound of chewing', and cf. also Spokane xaw 'sound of biting into something'.

FOOTNOTES

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¹ The word i lécép is a diminutive form, with the diminutive prefix l- and reduplication of the first root consonant. In this and many of the other examples in this paper, the i is a demonstrative particle (or perhaps even a demonstrative root).

² The form i láyi?i?i? contains three instances of the morphophonemically regular vocalization of y when not next to a vowel; underlyingly, the form is /laýýýý/.

³ The laterals spelled l in these words are phonetically voiceless approximant l sounds, not voiceless fricative [ɬ] sounds. I've spelled them l because that is the conventional spelling for all voiceless laterals in the language. The convention may well be non-ideal, since it conceals a potential phonemic distinction.

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