

**DIMINUTIVE CONSONANT HARMONY
IN SEVERAL DIALECTS OF CREE**

BY

TERESA D. MELNYCHUK

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**Department of Linguistics
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**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
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Master of Arts**

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Abstract

In Cree, the palatalization of coronal obstruents imparts a diminutive meaning through a process referred to as sound symbolism. It has been described as an optional process (Pentland, 1974), thus accounting for the observation that not all of the coronal obstruents are subject to the sound symbolism.

An acoustic examination of /s/ and /š/ attempted to discover whether there was a true phonological shift from /s/ to /š/ occurring in diminutives. A statistical procedure was used in the characterization of the fricative segments which determined that the diminutive fricative was unlike the control [s] segments measured in this study and not unlike the control [š] segments.

Since the acoustic examination of /s/ and /š/ established that there was a true phonological shift from /s/ to /š/ occurring in diminutives, it was therefore plausible to look at Cree diminutive consonant symbolism as a phonological process of consonant harmony. Within the framework provided by Optimality Theory, specifically using Optimal Domains Theory as proposed by Cole and Kisseberth (1994), I will show that this phonological process is governed by the interaction of several constraints regarding the spread of features within a specified domain.

The interaction of the universal constraints of Faithfulness, as well as the constraints Onset, NoCoda, and Coda-Cond serve to keep the input looking as much like the output as possible and to keep the syllable structure consistent across the language. Harmony results when the constraints for Basic Alignment (BA) and Wide-Scope Alignment (WSA) interact to extend a feature over a domain if ranked one way and

suppress the spread of the sound symbolism if ranked another way. The re-ranking of these constraints will also explain the patterns where the presence of the diminutive suffix is the sole indicator the diminutive and the leftward harmony is not occurring. It was also shown that a re-ranking of the constraints will result in the patterns shown in the Western Swampy and Plains Cree dialects.

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Introduction

This thesis discusses a very interesting aspect of the Cree language which is widely known as diminutive sound symbolism. It is based on data I have analyzed phonetically in Eastern Swampy and Moose Cree and phonologically from four Cree dialects, Moose Cree, Eastern Swampy Cree, Western Swampy Cree and Plains Cree.

Many people do know what sound symbolism is but to my knowledge there have been no acoustic studies concerning sound symbolism. Neither am I aware of any phonological studies which attempt to demonstrate the sound symbolic processes of Cree. A few have briefly discussed the existence of this phenomenon in Cree including Teeter (1959) Nichols (1971), Wolfart (1973), and Pentland (1974). This study builds on their findings by showing that there is a true phonological process behind the sound symbolism and stating that process comprehensively.

I will begin by giving the reader a brief introduction to sound symbolism and the way it has been manifested in different languages. A discussion of diminutives follows, with a look at the many native North American languages which display this process. In chapter two, I will focus my discussion toward Cree, including background information and examples of sound symbolism for the various dialects I am presenting. Chapter three comprises the acoustic study in which I ultimately show the sound symbolism as a phonological process. Following that, chapter four focuses on the phonological basis of

diminutive sound symbolism and attempts to explicate the process within the framework of Optimality Theory. Finally, chapter 5 ties in both the phonetic and phonological studies and draws conclusions regarding diminutive consonant harmony in several dialects of Cree.

Chapter 1

Defining Diminutive Sound Symbolism

This chapter describes what diminutive sound symbolism is, drawing comparisons to harmony systems in general. First sound symbolism is defined, followed by descriptions of diminutive consonant symbolism patterns in various North American languages. Sound symbolism is then compared to harmony systems.

1.1 Sound Symbolism

An arbitrary link between the sound and meaning in human language is generally assumed in linguistic theory. However, cross-linguistically there has been an accumulation of data regarding *sound symbolism* which reflects a direct association between the form and meaning of language (Hinton et al, 1994).

Many languages have been shown to exhibit sound symbolism. Ojibwa exhibits a consonant symbolism in the pejorative (Nichols 1979). Wiyot exhibits both an augmentative and diminutive symbolism (Teeter 1959). Nez Perce (Aoki, 1994) also exhibits diminutive symbolism and in addition contains a number of imitative lexical items in its vocabulary. Japanese possesses an extensive mimetic vocabulary (Hamano, 1994). Childs (1994) discusses a wide array of African languages which contain ideophones (imitatives). The Nootkan languages (Jacobsen 1994) exhibit a vocative sound symbolism.

A variety of sound symbolic patterns are thus found in languages worldwide. It is not a phenomenon isolated to a handful of the world's languages.

1.1.1 Patterns of Sound Symbolism

The term *sound symbolism* reflects an array of associations between sound and meaning. There are varying degrees of sound symbolism which should be familiar to many English speakers. These include corporeal sound symbolism, imitative sound symbolism, conventional sound symbolism, and synesthetic sound symbolism (Hinton et al, 1994).

1.1.1.1 Corporeal Sound Symbolism

In corporeal sound symbolism sound and meaning are completely linked. This is evident in aspects of human utterances such as cries of pain or hiccups (Hinton et al, 1994). Expressive intonation, interjections and “vocatives”¹ are also included as part of this category. Common among these utterances is that they are directly symptomatic of the speaker. Intonation, interjections human cries and hiccups express the internal state of the speaker. Vocatives typically gain the attention of a hearer. These corporeal utterances are basic communicative functions which have many universal components.

1.1.1.2 Imitative Sound Symbolism

Imitative sound symbolism represent non-linguistic sounds from the environment, for example *meow*, *moo*, *knock*, and *swish*. These onomatopoeic words are directly shaped by the sound they represent such that there is a direct mapping of the acoustic features of

¹Vocatives are defined here as those parts of speech used to gain the attention of the hearer.(Jacobsen 1994)

the sound itself and the phonological features of the word labeling that sound (Rhodes 1994, Oswalt 1994). Bird names lend themselves well to imitative sound symbolism, often mimicking the call of the bird as shown in the following examples.

(1.1) English

whippoorwill, chickadee

Ojibwa

waahoonwenh 'whippoorwill'

jigjigaaneshiinh 'chickadee' (Rhodes 1994)

This class of symbolism is often represented in the language by phonemes acoustically close to the represented sound.

1.1.1.3 Conventional Sound Symbolism

The English language also has what is referred to as *conventional* sound symbolism in which certain phonemes and clusters of phonemes have become associated with certain meanings. For example the *gl* of *glisten*, *glimmer* and *glow* has become associated with a concept of *gold* or *shine*. The conventional sound symbolism is more arbitrary and more language specific than the corporeal sound symbolism or imitative sound symbolism, but nonetheless, it is often claimed that sound and meaning are somehow linked.

1.1.1.4 Synesthetic Sound Symbolism

The type of sound symbolism important to my thesis is one which Hinton, Nichols and Ohala (1994) have termed synesthetic sound symbolism which is the acoustic symbolization of non-acoustic phenomena. It is a process “whereby certain vowels, consonants, and suprasegmentals² are chosen to represent visual, tactile, or proprioceptive properties of objects such as size or shape” (Hinton et al 1994: 4). Hinton et al describe this as one of the most interesting aspects of sound symbolism since the relation between sound and meaning is relatively indirect. It has been argued that there are cross-linguistic tendencies for languages, at least in the case of size-sound symbolism, to choose certain types of consonants over others. The diminutive tends to be represented by high front vowels³ and in some languages, Cree for example, it is signified with palatalized⁴ consonants.⁵ The set of consonants involved in the symbolism is usually a small subset of the consonant inventory for the language (Nichols 1971; Pentland 1974; Ultan 1978).

²These are features of speech which extend over more than one segment, for example, pitch and stress.

³Ultan (1978) found that 90% of the languages he sampled contained high front vowels in their diminutive marking.

⁴Palatalized consonants are those which have the front of the tongue (the portion of the tongue located behind the tip and the blade) articulating with or more toward the hard palate (behind the alveolar ridge). I will be using the term palatalization in reference to the process whereby a dental or alveolar consonant becomes palatal, such as [t]→[č] (Rogers 1991), and also for [t]→[c] .

⁵Palatalized consonants are not always used to represent the diminutive. Ojibwa for example, represents the pejorative, not the diminutive, with [š] (Nichols 1979).

1.2 Diminutive Sound Symbolism

Diminutive is a term used in morphology to refer to an affix with the general meaning of “little”. Usually the diminutive represents an affix concatenated to a root to denote an object of smaller size. In English we often represent the diminutive with the suffix -y which is very productive in child-directed speech. Examples are listed in (1.2) below.

(1.2) English child-directed speech

doll -> dolly

dog -> doggy

bird -> birdy

In English, the presence of this diminutive suffix typically does not alter any of the other consonants or vowels in the word. However, there are many languages in which diminutive shifting involves “the alternation, in point or manner of articulation, of consonants in verb or nouns roots - expressing the diminutive category and by extension, an attitude of endearment, affection, pity, or the like” (Nichols 1971: 826). In Cree, the diminutive suffix, concatenated to a root, typically conditions the alternation which Nichols (1971) discusses.

Utan (1978) observed that the languages which exhibit these instances of consonant ablaut in the diminutive tend to be located in the west and Northwest coastal areas of North America and are American Indian languages by definition. Pentland (1974)

also noted the presence of sound symbolism in at least three language families of eastern north America. Rather than a universal of human language, this type of size sound symbolism may possibly be explained by areal diffusion. This phenomenon, nonetheless, is still an interesting subject to be studied among the languages which express the sound symbolism in such a manner.

1.3 Diminutive Consonant Symbolism in Western North America

Diminutive consonant symbolism is fairly widespread in the languages native to North America. It has been discussed by many others including Sapir (1911) for Wishram, Teeter (1959) for Wiyot and Nichols (1971) discussed consonant harmony processes for over 30 Amerindian languages. Also, Pentland (1974) examined sound symbolism in Algonquian languages, and Wolfart (1971) briefly mentioned Cree's sound symbolism.

The following are several examples of sound symbolism found in North America:

- (1.3) a) Cree (Moose) $t \rightarrow \check{c}; s \rightarrow \check{s}$ (Pentland 1974)⁶
- b) Cree (Plains) $t \rightarrow c$ (Teeter, 1959)
- c) Wiyot: $t \rightarrow c; s \rightarrow \check{s}; l \rightarrow r$ (Teeter 1959)
- d) Nootka: $s, \check{s} \rightarrow \acute{s}$ (Sapir, 1915)⁷
- e) Dakota: $x \rightarrow \check{s}$ (Nichols, 1973)
- f) Nez Perce: $k \rightarrow q$ (Nichols, 1973)

Cree is listed twice as the dialects exhibit differences in sound symbolism. While all of the dialects have the affrication of /t/ occurring in the sound symbolism, the dialects that distinguish [s] and [š], also shift /s/ to [š] in the diminutive. Moose Cree, given as example (a), is representative of this shift. However the Plains Cree dialect, shown in (b), only affricates /t/ to [c] (the alveolar affricate) in the diminutive. In these dialects [s] and [š] are

⁶The orthography used in the examples follow the conventions of the source and are typical of publications in Americanist linguistics:

- č : postalveolar affricate (IPA [tʃ]),
- š : postalveolar fricative (IPA [ʃ])
- c : alveolar affricate (IPA [ts]).
- ś : segment halfway between [s] and [ʃ]

⁷For Nootka, the symbolism is used only when speaking of small people or small birds. Nichols (1971:845) notes that it is “a personifying shift, semantically diminutive.” The normal diminutive includes the addition of the suffix *-ʔis* but does not alter any other consonants within the word. Sapir (1915) does not state how productive this is in Nootka

not distinctive⁸. Nootka has both /s/ and /š/ blending to becoming a segment partway between the [s] and [š], which only appears in one type of the diminutive.

Nichols (1971) describes the diminutive shifts of the Western North American languages as those involving hardness (tenseness or obstruency) or involving tonality (anteriority) and those involving dental resonants. In a hardness shift, the point of articulation remains generally unchanged, however a more forceful manner of articulation will signal the diminutive. An example of this can be found in Kalispel and Coeur d'Alene in which the sonorant consonants become glottalized.

Tonality shifts involve the use of higher consonant tonality to convey the diminutive meaning achieved by consonant frequency raising or by palatalization. The first type of tonality shift involves the raising of the pitch of the consonant burst or fricative noise. The second type of tonality shifts include the hissing-to-hushing articulations or palatalization. Although the frequency of the consonant noise is itself lower in the postalveolar than in the alveolar, the locus of the second formant, the other basic perceptual cue for consonant point of articulation, is higher in the postalveolar, so this is also considered to be higher tonality. It is this tonality shift of palatalization which is the basis for the diminutive shifting in Cree.

The shifts involving dental resonants include languages such as Yurok and Karok which shift /l/ to /r/ and /r/ to /n/ in the diminutive respectively.

⁸While the /s/ of Plains and Western Swampy Cree can vary to the postalveolar fricative [š], the two segments do not distinguish minimal pairs. In Moose and Eastern Swampy Cree, [s] and [š] are distinctive. Ellis (1995) illustrates this with minimal pairs such as *nakiskaw* 'a short while' versus *nakiškaw* 'meet him'

1.4 Sound Symbolism as Consonant Harmony

Shaw (1991) defines consonant harmony as “phonological assimilation or dissimilation between consonants that are not necessarily adjacent in the surface phonological string and where, crucially, other intervening vocalic or consonant segments do not interact with the harmony in any way.” Within these parameters, diminutive consonant symbolism may be looked upon as a case of consonant harmony.

In Cree, diminutive consonant symbolism is regarded as the phonological assimilation of coronal obstruents. The coronal obstruents to the left of the diminutive suffix are palatalized, the intervening segments being irrelevant. This is, by definition, consonant harmony. Teeter (1959) also described the diminutive sound symbolism process in Cree as consonant harmony.

Described thus as consonant harmony, it may be compared to other languages displaying similar examples of consonant harmony. For example, Chumash displays a sibilant harmony in which any [s] or [š] harmonizes to the rightmost segment, so the harmony is also a regressive pattern. Russell (1993) describes the harmony process for this language as a gradient change, something that is more the result of a phonetic undershoot effect as opposed to a true phonological change. Ferrara (1988) also discusses consonant harmony processes in Navajo. Coronal harmony is afforded special status by Shaw (1991). Harmony among coronal consonants is much more frequently attested than labial, dorsal and pharyngeal harmony. Coronal harmony systems typically involve only a subset of the coronal segments in a language and typically ignore other coronal segments (Shaw 1991: 126)

1. 4 Summary

Sound symbolism is thus a phenomenon that has been discussed extensively in the literature and is shown to occur in a wide variety of languages native to North America. While the sound symbolism has been categorized into types, and compared across languages and language families, few actual in-depth studies of the phonological processes motivating sound symbolism have been published. This phonetic and phonological study of Cree diminutive harmony is unique in this respect.

Chapter 2

Cree Diminutive Consonant Harmony

This chapter focuses on the Cree language. First I discuss the language and its dialects, situating it within the language families of North America. Following that is an introduction to diminutive sound symbolism known to occur in the Cree language and a review of what is already known about the phenomenon. This chapter concludes with an examination of the available data.

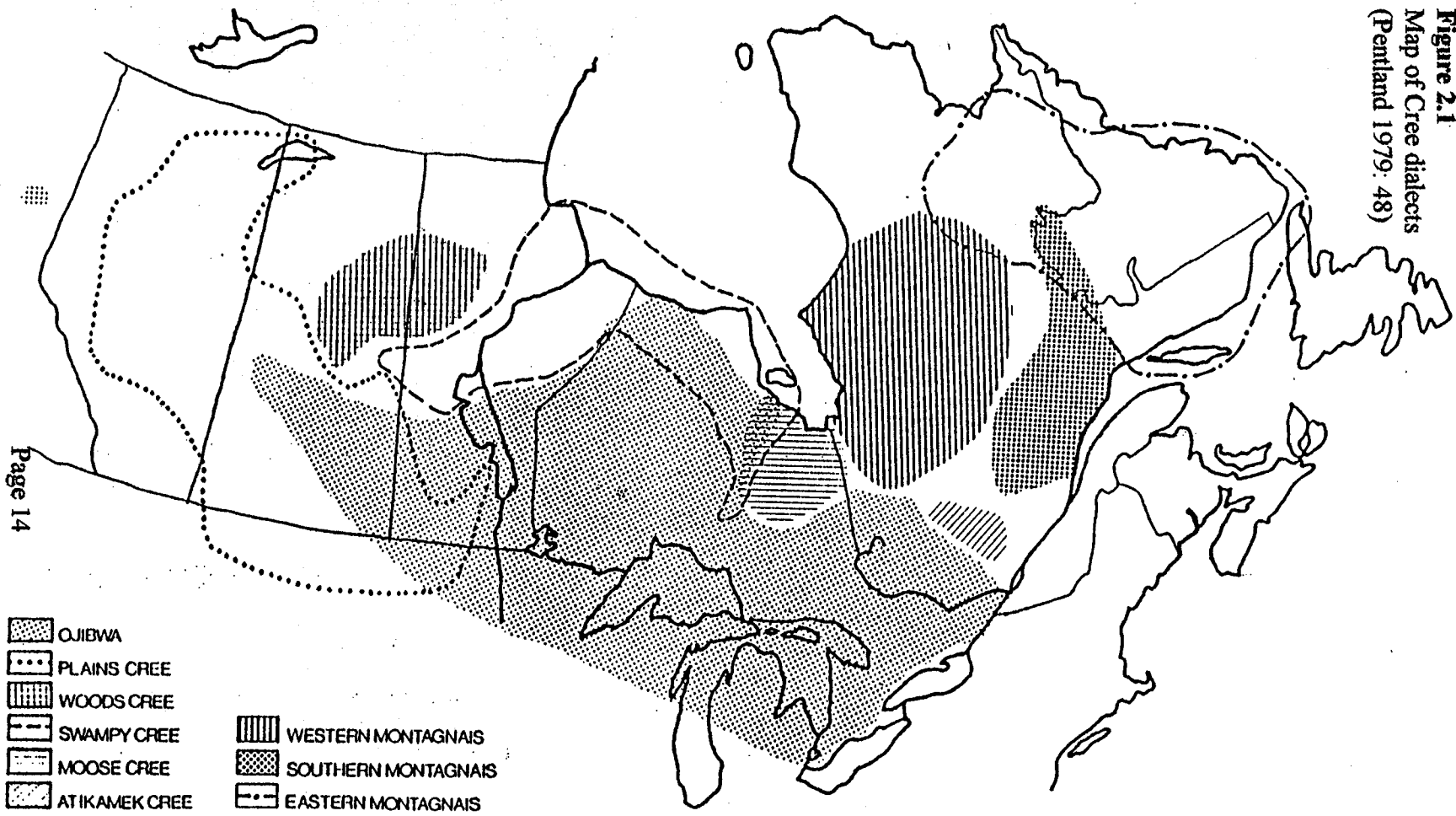
2.1 The Cree Language

The Cree language is a widely spoken member of the Algonquian family. It is spoken across central Canada from Hudson Bay to the Rockies (Ahenakew 1987). While Cree shows dialect differences, it is recognizably the same language as spoken on the western plains, in the northern woodlands or on the shores of James Bay. (Ellis, 1983.).

Five regional dialects of the Cree language are traditionally recognized (Dahlstrom 1986; Ellis, 1983.; Wolfart and Carroll 1973), however four are still productive today. They are Moose Cree, Swampy Cree, Plains Cree, and Woods Cree.⁹ These are illustrated on the map in figure (2.1). The dialects differ in some sounds and vocabulary.

⁹The dialect referred to as "R"-Cree is no longer spoken and has actually been eliminated in the discussion in Wolfart and Carol (1973) revised edition published in 1981.

Figure 2.1
 Map of Cree dialects
 (Pentland 1979: 48)



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MAP 1. Maximum extent of Cree dialects (and some neighbouring languages) in the twentieth century.

One obvious example of the regional variation among the dialects is in the word for 'I' of the Cree speakers:

Swampy Cree ¹⁰	nîna
Plains Cree	nîya
Woods Cree	nîtha ¹¹
Moose Cree	nîla

Observe that the only difference between the words is a single sound: the *n*, *y*, *th* and *l*. These sounds are reflexes of Proto-Algonquian **l* (Dahlstrom 1986). It is largely the representations of **l* that differentiate the various regional dialects of Cree. Except for these small variations, the dialects share many common features and a Cree speaker from one dialect or community can generally understand a speaker from a neighbouring region (Wolfart and Carroll 1973).

The present thesis will mainly focus on the Eastern Swampy and Moose dialects of Cree. These dialects provide more phonologically interesting patterns in the diminutive than those of the Western dialects of Cree because there is palatalization of both /*s*/ and /*t*/. However, I will also be discussing the patterns in the diminutive sound symbolism of the

¹⁰The *n*-dialect is separated into two distinct dialects of Swampy Cree for the purposes of this thesis. While they have the reflex of proto-Algonquian **l* in common, they differ in the presence or absence of the phoneme /*ʃ*/ which is very important in my analysis of Cree diminutives. The western dialect does not contain this phoneme, like the Plains Cree dialect, however Eastern Swampy Cree does contain this phoneme as does Moose Cree.

¹¹The *th* denotes IPA [ð].

Plains and the Western Swampy Cree dialects in comparison to the Eastern dialects. The western dialects only have the palatalization of /t/.

2.2 The Dialects

In this section, I will give a brief overview of the dialects I will be discussing, examining the areas in which they are spoken and explaining the phonological system.

In the following sections, the phonological system is listed in a standard orthography commonly used for the Cree language.¹³ The following symbols are translated into to IPA as follows (Ellis 1995):

2.2) č : palato-alveolar affricate [tʃ]

š : palato-alveolar fricative [ʃ]

c : alveolar affricate [ts]

i : high front unrounded vowel ranging from [ɪ] to [e]

î : high front unrounded long vowel [i]

ê : mid-front unrounded long vowel [e]

o : mid to high back unrounded vowel ranging from [ɔ] to [ʊ]

ô : high back unrounded long vowel [o]

¹³In Ellis' texts (1983; 1995) he signifies the postalveolar affricate, [tʃ], with 'c'. In order to clarify the difference in sound symbolism between the dialects, it is important for this to be denoted by 'č' since the alveolar affricate is symbolized by 'c'. All of the data has been amended to reflect this distinction of alveolar affricates.

a: low to mid, central to front unrounded vowel ranging from [a] to [ʌ]

â: low, front to back unrounded long vowel ranging from [a] to [ɑ]

2.2.1 Moose Cree

This dialect has also been referred to as the l-dialect. It is spoken in the area to the south of James Bay and at Moose Factory. I have listed the phoneme inventory of Moose Cree below.

(2.3) Phoneme inventory of Moose Cree:

consonants:

p t č k
 s š
m n
 l
w y

vowels:

i î
 ê o ô
 a â

The phonemes which take part in the sound symbolism are the coronal consonants /t/, /s/, /č/ and /š/. The data from this dialect mainly represents the community of Moose Factory, Ontario.

2.2.2 Eastern Swampy Cree

Swampy Cree, or the n-dialect, is spoken from Manitoba eastward through northern Ontario to the shores of Hudson and James Bay. Eastern Swampy Cree is spoken in northern Ontario. The data from this dialect primarily represents speakers of Fort Albany, Ontario, which is located at the east end of the Swampy Cree area about 5 miles from James Bay (Ellis, 1983). I have listed the phoneme inventory of Eastern Swampy Cree below.

(2.4) Phoneme inventory of Eastern Swampy Cree:

Consonants:

p t č k
 s š
m n
w y

Vowels:

i î
 ê o ô
 a â

The phonemes which take part in the sound symbolism are the coronal consonants /t/, /s/, /č/ and /š/.

2.2.3 Western Swampy Cree

Western Swampy Cree is spoken in northern Manitoba. The following is the phoneme inventory of Western Swampy Cree:

(2.5) consonants:

p t k
 c
 s h
m n
w y

vowels:

i î
 ê o ô
 a â

The only phoneme which takes part in the sound symbolism is /t/, becoming the alveolar affricate /c/.

2.2.4 Plains Cree

This dialect has also been called the y-dialect. It is spoken in Southern Manitoba, Saskatchewan and much of Alberta. The data from this dialect has been from several written texts of speakers in central Saskatchewan.

The following is the phoneme inventory of Plains Cree:

(2.6) consonants:

p t k
 c
 s h
m n
w y

vowels:

i î
 ê o ô
 a â

The /t/ is the only phoneme taking part in the sound symbolism, becoming the alveolar affricate /c/.

2.3 Cree Diminutive Consonant Symbolism

In Cree, the diminutive forms of words are commonly used to denote things that are a smaller size. However diminutive symbolism may also make a person sound pitiful and effeminate, for example the speech of the Cree cultural hero Wisahkecak (Wolfart 1973: 80), and is also often used when talking to babies. Cree expresses the diminutive sound symbolism through palatalization of the coronal obstruents. While it has been known that Cree is one of several North American languages expressing the diminutive sound symbolism, there has never been an in-depth study of this phenomenon nor a comparison across dialects.

Nichols (1971) discusses the diminutive consonant shifts of many North American languages, but only very briefly mentions the shift in Cree. In a footnote she describes the diminutive symbolism in Cree as shifting “t to č in forms taking the diminutive suffix” (Nichols, 1971: 831).

Pentland (1974) states that diminutive consonant symbolism is traditionally viewed as “a process by which certain consonants may be replaced by other consonants to impart a diminutive meaning” (Pentland 1974: 238). Ferrara (1988) describes Navajo harmony as context sensitive because the harmony is determined by the presence or absence of the diminutive suffix. In Cree however, the presence of the diminutive suffix may, but does not always, trigger the shift. The symbolism is thus an optional rule and I would expect to see

words appearing with the diminutive suffix and without the regressive symbolism. It also is not always necessary for the diminutive suffix to be present for the shift to occur.¹³ In this thesis, I consider only those diminutives where the diminutive suffix is present.

A preliminary study of Cree diminutive sound symbolism (Melnichuk 1996) determined some of the cross-dialect differences in the sound symbolic processes. It is hoped to further develop the phonological process of diminutive consonant harmony in the present thesis.

2.3.1 Description of the diminutive pattern

For all of the Cree dialects, a diminutive suffix is concatenated to a base, and being a derivational suffix, appears inside the inflectional morphology. This is not in itself phonologically interesting, but, the presence of this suffix may cause coronal obstruents in the base to become palatalized while the intervening segments are for the most part irrelevant. The harmony pattern is regressive; that is, it starts at the diminutive suffix and spreads leftward throughout the word. In example (2.7) below, (a) illustrates the harmony present on each /s/ in *sîpiy* to the left of the diminutive suffix after it has been added. The example illustrated in (b) however, has an /s/ to the right of the diminutive suffix which does not palatalize in the diminutive indicating that the harmony is in fact regressive.

¹³Wolfart (1973) cites several examples of this for the Plains dialect: *yôtin* 'it is windy' versus *yôcin* 'it is a little windy'.