INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI®

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

NOTE TO USERS

This reproduction is the best copy available

UMI

UNIVERSITY OF CALIFORNIA

Los Angeles

The Phonology and Morphology of Nez Perce Stress

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Lingistics

by

Harold David Crook

1999

The dissertation of Harold David Crook is approved.

Bruce P. Hayes

Paul V. Kroskrity

Pamela Munro, Committee Co-chair

Donca Steriade, Committee Co-chair

University of California, Los Angeles

1999

This dissertation is dedicated to my wife

Muna Elfar Crook

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGMENTS

In the summer of 1996, I was able to attend the special ceremony honoring the late Mary Hass, during the meeting of the Hokan-Penutian Conference at UC Berkeley. At that ceremony, I learned that there is a chain of teachers and students that begins with Boas and Sapir and extended down through Mary Haas and Margaret Langdon to me. My link to this chain is Margaret's student, my committee co-chair, Pamela Munro.

In the tradition of Boas, Sapir, Haas, and Langdon, Pam is a great Americanist. I am continually amazed to find that there is yet another American Indian language that she has done first hand research on. Usually, it is the case that she has studied more than one or even several languages from the same family. She also has done first hand work on languages from all over the globe (I think she may out-Sapir Sapir, in the comprehensive nature of her fieldwork). Pam made me an Americanist. She welcomed me as her student, trained me to be become a good linguist, and has saved my career on more than one occasion. Pam is the most complete linguist I know, and she is also a dear friend I can count on. Many, many thanks Pam.

My other committee co-chair, Donca Steriade, helped me get into the field of phonology, when I was floundering around in syntax. Her seminars were always fascinating and inspiring. Her excellence in theory and her insistence on precision has had a profound effect on my work. Donca has been a tremendous help to me in particular with the problems of accent and the relationship of the Nez Perce facts to Sanskrit and

with navigating Optimality Theory. She has been very generous with her time. Many, many thanks Donca.

It is said that no one can serve two masters, and serving both co-chairs has at times caused me to believe more fully in that truism. However, in the task of meeting the expectations of both of these good people, I have become a better linguist. For the strengths and efficiencies of this dissertation Donca and Pam, as well as the rest of my committee, are much to be thanked for their help. For the mistakes and inadequacies, there is only the author to take responsibility.

I am grateful for my other committee members, Bruce Hayes, Russell G. Schuh, and Paul V. Kroskrity. When I first considered switching from syntax to phonology, I read Bruce's manuscript on metrical stress theory (which later became his book (1995)), and it convinced me to make the move. His excellent material brought me up to speed on many aspects of metrical theory, but more than that it got me excited about phonology. Russell G. Schuh almost kept me in African linguistics. His excellence as a teacher and interest in the teaching of languages, have been inspiring ("Jerejef, Paap Daal."). I found Paul Kroskrity's classes in linguistic anthropology particularly inspiring. The course I subsequently developed on traditional Nez Perce narratives owes much of its foundation to Paul's instruction.

I am grateful to the faculty of the Department of Linguistics, UCLA, for their excellent teaching and advisement. It has been a true priviledge to be a student of such excellent scholars who are also excellent teachers. Nearly every class that I took was

wonderful and fascinating in its own way, from semantics with Ed Keenan, to syntax with Tim Stowell, to field methods with Paul Schachter and Bruce Hayes.

I have benefitted tremendously from discussions and friendships with my fellow students at UCLA, especially the other attendees of Pamela Munro's weekly seminar on American Indian Linguistics. These included George Aaron Broadwell, Jack Martin, Cynthia Walker, Felicia Lee, Brian Potter, and Matt Gordon. Matt Gordon has been especially helpful with advice on the phonetic aspects of stress, as has Aaron Shryock. Ralph Sonnenschein, another participant in Pam's seminar, has been something of a defacto outside member of my committee.

I have greatly benefited from a number of other linguists. Lynn Gordon, my undergraduate linguistics advisor at Washington State University, first introduced me to the Nez Perce language and to her own teacher, Pamela Munro. Noel Rude has shared his insights on comparative Sahaptian. I am especially grateful to Haruo Aoki. He established the foundation for other Nez Perce linguists by documenting the language in articles, a grammar, and two series of texts. His dictionary has been of tremendous value to me personally in my research, and to the Nez Perce people. Moreover, the Nez Perce people had such a good experience with Haruo, that they were willing to take a chance on another crazy linguist.

It has been my priviledge to serve the Nez Perce Tribe for the last two years as Team Leader of their language program. I wish to thank the Nez Perce Tribal Executive Committee for their support of both the Language Program and me. My staff at Language Program, Ann McCormack, Angel McFarland, and Shirley Shabala, have been a

tremendous aid and a joy to work with. My colleagues in the Cultural Resources Program, Jason Lyon and Josiah Pinkham, have been excellent friends and a great help to me personally. **"Nimíipuu hi'nptóoqsix Nimiputimtnéewit!"**

I could have done nothing without the support and assitance of the Nez Perce elders. It is they who hold the keys to the language, and they are deserving of honor for their generosity to me and to younger generations of Nez Perce, to whom they are teaching their language. The members of the Circle of Elders have been played an instrumental role in this. I especially want to thank my dear friends and teachers Horace Axtell, Cecil Carter, Gordon Fisher, Josephine Hayes, Beatrice Miles, Vera Sonneck, and Bessie Scott. Vera Sonneck has been a wonerful friend and has become an amazing teacher. Horace Axtell was the first elder who opened Nimipuutímt to me, and he has been ever generous after. Cecil Carter has become my co-teacher and my buddy. **Qe'ci'yéw'yew' 'óykaloo!**

I thank my parents, Edward Crook, DMV, Ph.D. and my late mother, Ruth Birch Crook, for instilling in me a love for learning, research, and education. But more than that, for a loving home and continued support. I am thankful for my brother Douglas Crook, and my dear friend Rich Stanley, as well as for my church family at Kendrick United Methodist Church and at Santa Monica First UMC. They have supported me and Muna with their good words and their prayers.

I thank most of all my wife Muna Elfar Crook (sometimes I think she deserves the Ph.D. more than I do!). You have been my eyes and my heart. Few but other graduate

student spouses will know what you have been through. You have given me your love, so good that even a linguist does not have words to say how fine. You have stuck with me through it all. Alf shukran, ya Muna!

The more I study language and culture, the more I look upon this world in its beauty and complexity, the more amazed and humbled I become. I give thanks to God, the Creator, **Hanyaw'áat**, for life and for mind and for love.

Qe'ci'yéw'yew' núunim Hanyaw'áat! 'ikúuyn ta'sníx 'ée haníya la'ám'!

VITA

September 13, 1960	Born, Berkeley, California
1983	B.Th., Prairie Bible Institute Three Hills, Alberta, Canada
1986	B.A., Humanities Washigton State University Pullman, Washington
1987-91	Teaching Assistant Department of Linguistics University of California Los Angeles, California
1990	M.A., Lingistics University of California Los Angeles, California
1993-6	Academic Counselor Letters & Science Counseling University of California Los Angeles, California
1996	Teaching Fellow University of California Los Angeles, California
1996	Team Leader Nez Perce Language Program Nez Perce Indian Tribe Lapwai, Idaho

PUBLICATIONS AND PRESENTATIONS

Crook, Harold (1994). "On Nez Perce Nouns with Irregular Metrical Behavior or 'Why "Grizzly Bear" has Horrible Stress," in *Survey of California and Other Indian Languages: Report 9, Proceedings of the Hokan-Penutian Conference.*

"Phonetic Correlates of Nez Perce Stress", (1996), Linguistic Society of America, San Diego, California.

"Nez Perce Noun Stress", (1996), American Anthropological Association, San Francisco, California.

"Nez Perce Verb Stress", (1996), Western Conference on Linguistics, Santa Cruz, California.

"Making Policy Decisions Affecting the Future Phonology of a Moribund Language", (1999), Linguistic Society of America, Los Angeles, California.

"Development and Progress of the Nez Perce Language Program," (1999), Tamastalikt Cultural Center, Umatilla Indian Reservation, Pendleton, Oregon.

ABSTRACT OF THE DISSERTATION

The Phonology and Morphology of Nez Perce Stress

by

Harold David Crook

Doctor of Philosophy in Linguistics

University of California, Los Angeles, 1999

Professor Pamela Munro, Co-chair

Professor Donca Steriade, Co-Chair

The Nez Perce Language presents a phonology and morphology of considerable complexity. It is not possible to come to an understanding of the phonology, particularly the phonology of stress without understanding the morphology. I begin the dissertation with a grammatical sketch that includes a thorough description of the morphology, both derivational and inflectional. Particular attention is given to the morphology of the noun

and of the verb. This description also includes brief treatment of some phonological issues such as syllable structure and the orthography. The grammatical sketch addresses several areas of syntax including free word order, negation, and the agreement of functional words.

Before turning to the main topic of stress, I present discussions of three topics in segmental phonology: vowel harmony, vocalic hiatus, and fricativization. Nez Perce vowel harmony has been a topic of interest for linguists since the 1960's.

The primary focus of the dissertation is the Nez Perce stress pattern. I approach this problem from the perspectie of Optimality Theory. I account for the regular penultimate form of Nez Perce stress, in terms of the interaction of Non-Finality and Edgemost Right. Weight to Stress requires that underlying long vowels be shortened when do not receive main stress. To this basic pattern must be added a set of words where Non-Finality is outranked by Edgemost Right, and a set where long vowels are blocked from shortening. Nez Perce has a robust accentual system akin to Sanskrit and Salish, where accented stems, prefixes, and suffixes all compete to receive primary stress. I also provide accounts for compound stress, secondary stress, stress driven epenthesis, and syncope.

Table of abbreviations

1	first person
1INCL	first person inclusive
1SG.REFL	first person singular reflexive
1PL.REFL	first person plural reflexive
2	second person
2/3PL.REFL	second or third person plural reflexive
3	third person
3PL	third person plural
3OB	third person non-subject argument
3ON3	third person subject with third person object
3REFL	third person reflexive
ABL	ablative case
ADJ	adjective forming affix[1]
ADJ2	adjective forming affix
AGNT1	agentive deverbal affix
ATRB	attributive suffix
ALL	allative case
BEN	benefactive case
BNF	benefactive verb derivational suffix
CAUS	causative
CAUS.PL	causative plural
CIS	cislocative
CLS	classifier, non-human
CND	conditional
DESID	desiderative suffix
DESID1	desiderative particle
DIST	distributive
DVB.INST	deverbal instrument
EMPH	emphatic
ERG	ergative case
HAB	habitual aspect
HAB.PL	habitual aspect, plural subject
HAB.PL.PST	habitual aspect, plural, past tense
HAB.PST	habitual aspect, past tense
HUM	human classifier
HUM.PL	human plural
IMP	imperative aspect
IMP.PL	imperative aspect, plural subject
INC	incompletive aspect

[1] Nex Perce has at least two different derivational suffixes that are used to form adjectives.

INC.CIS	incompletive aspect, cislocative
INC.PL	incompletive aspect, plural subject
INC.PL.CIS	incompletive aspect, plural, cislocative
INC.PL.RMT	incompletive aspect, plural, remote past tense
INC.PL.TRS	incompletive aspect, plural, translocative
INC.TRS	incompletive aspect, translocative
INS1	instrumental deverbal [2]
INS2	instrumental deverbal
INS3	instrumental deverbal
INS4	instrumental deverbal
INST	instrumental case
IRR	irrealis aspect
JV	junior vocative
LOC	locative case
NM	nominalizer
NOM	nominative case
OBJ	objective case
PL	plural
PLOB	plural object
PLC	place name formative
PRF	perfect aspect
PTV	perfective aspect
QUES	question particle
REC	recent past tense
RECIP	reciprocal
RED	reduplication
REL	relative particle
RMT	remote past tense
SF	stem formative
SV	senior vocative
TRS	translocative
VINST	deverbal instrumental
VOC	vocative case
VRBL	verbalizer

[2] Nez Perce has a set of at least four different deverbal suffixes used for forming the names for instruments.

Chapter 1 Introduction

In this introduction, I will begin with a survey of the dissertation, including its structure, the major topics it covers, and some of its more important results (§1.1). I will briefly discuss the Nez Perce people, or Nimiipuu, and the classification and status of their language (§1.2). I will then provide a survey of previous published research which has been done on Nez Perce (§1.3).

1.1. Survey of the dissertation

In Chapter 2, I begin with a discussion the phonological inventory, and discuss the essential aspects of syllable structure, particularly those that drive epenthesis. I then provide a history of various orthographies used for Nez Perce, before moving on to a presentation of the morphology and the syntax (the latter briefly).

Nez Perce has a system of nine case inflections, a set of bound postpositions, and a system of derivational morphology that includes both CV and whole word reduplication. The morphology of the verb is quite complex. Morphologically, there are two types of aspect, one that marks plurality prefixally and the other that marks it suffixally (there are three aspects of each type). There are two past tenses. Nez Perce agrees with third person subjects, first and second person arguments do not agree. Nez Perce also agrees with plural objects. There is a system of over 100 derivational prefixes and approximately 20 derivational suffixes which are used to expand the vocabulary of

verbs (many of the suffixes change the argument structure). In contrast to the verbs that agree with third person, there is a set of clause initial function words that agrees with first and second person. Nez Perce word order is extremely free. I briefly discuss the different clause types along with negation and interaction of syntax with morphology.

In Chapter 3, I briefly discuss Nez Perce vowel harmony, hiatus, and fricativization. Vowel harmony is interesting in that there is no one feature such as [+Round] or [+Back] that can be observed to harmonize. Hiatus is treated somewhat differently in inflectional morphology versus derivational morphology, and differently also depending on the vowels involved. I describe fricativization of back, unglottalized stops and some aspects of the realization of laryngeals.

In Chapter 4, I discuss the Nez Perce pattern of shifting, penultimate stress that is caused by the interaction of Non-Finality and Edgemost Right. Underlying long vowels are shortened when do not receive main stress due to the interaction of these constraints. To this basic pattern must be added a set of words where Non-Finality is outranked by Edgemost Right, and a set where long vowels are blocked from shortening. Nez Perce has a robust accentual system akin to Sanskrit and Salish, where accented stems, prefixes, and suffixes all compete to receive primary stress. I also discuss compound stress, secondary stress, stress driven epenthesis, and syncope.

1.2. The Nez Perce and their language

Nez Perce is the single known member of its branch of the Sahaptian family, a well established subgroup of the extremely broad and still somewhat controversial Penutian superstock. Silverstein (1979) discusses how Sapir's (1921) organization included a recognizing of Hewitt and Powell's (1894) "Shahapwailutan" grouping of Sahaptian with their subgroups of Klamath-Modoc and Molale-Cayuse. Sapir renamed this larger group Plateau Penutian (1), while noting that his classifications were in general far from established.

(1) Plateau Penutian
- Klamath-Modoc
- Molale-Cayuse
- Sahaptian
  - Sahaptin dialects (including Yakama, Walla Walla, Taidnapam, Klickitat, Tenaino, Tyigh, Wanapam, Walula-Palouse)
  - **Nez Perce**

Since Sapir's classification, considerable skepticism has been expressed by various Penutianists regarding the accuracy of this classification. In his wide ranging survey of the Northwest, Thompson (1973) indicated little confidence in Plateau Penutian subgroup. One of his sources, Rigsby (1966) who extensively reviewed the Molale-Cayuse data, does not place confidence in that subclassification. Silverstein (1979) has likewise indicated that while Molale is probably Penutian, it is as likely Oregon Penutian as Plateau Penutian, and the entire status of the poorly documented Cayuse is up for debate.

Aoki (1963) and Rude (1987) have both produced possible cognates for Klamath-Modoc and Sahaptian, but Silverstein (1979) is of the opinion that Klamath-Modoc may

be closer to the California Penutian group while Sahaptian may belong with Oregon Penutian. Thus, the classification of Penutian north of California is still much in flux. Nevertheless, there are a number of general Penutian features which are relevant to Nez Perce Phonology. Silverstein (1979) describes for Proto-Penutian the prevalence of complex suffixation and derivation of verb stems, glottalization of consonants, and ablaut. Nez Perce has many of these characteristics posited for Proto-Penutian, and Rigsby and Silverstein (1969) have hypothesized that Penutian ablaut led eventually to vowel harmony in Nez Perce.

In 1805, when Lewis and Clark camped at the confluence of the Snake and Clearwater Rivers at what is now Lewiston, Idaho, they were visiting the Nez Perce heartland. The Nez Perce then lived in northeastern Oregon, southeastern Washington, and central Idaho east to the foothills of the Bitterroot Mountains. Presently, Nez Perce tribal members can still be found throughout much of this region, but most live in the environs of Lewiston, ID, Clarkston, WA, and the Nez Perce Reservation, ID. Smaller numbers live on the Colville Reservation in Washington State and some also live on the Pendleton Reservation in Oregon.

In March 1997, I compiled a list of elders who could still speak the language. I revised my list in February 1999, and at that time it contained over 75 individuals that I believed were from fairly fluent to highly fluent. These individuals range in age from approximately 59 to102 years. Beginning in 1997, the Nez Perce Language Program began providing classes which now extend to elementary children, high schoolers, college students, and adults. The Nez Perce Language Program is authorized by resolution of the

Nez Perce Tribal Executive Committee to undertake the task of perpetuating the Nez Perce Language or Nimipuutímt. As of Spring 1999, there were upwards of 150 individuals receiving instruction in the language at least bi-weekly. Although I cannot say at this time that there are many younger Nez Perce who are truly moving towards fluency in their language, I have hopes that this will be the trend over the next few years. At this time, the language remains in an extremely precarious position.

With respect to dialects, Aoki (1970) discusses the existence of two different (probably mutually intelligible) dialects known as Upper River and Lower River. Since the Nez Perce lived in loosely knit bands, which ranged over a very large portion of the Pacific Northwest, there may have once existed several subdialects. Ethnographic texts (Aoki 1979) include descriptions of fairly frequent tribal gatherings that may have prevented a great deal of divergence from emerging. I know of no speakers of the Lower River dialect (the dialect of Phinney's collection of texts (1934)). My fieldwork has been entirely with the Upper River dialect, the same one Aoki has worked with.

1.3. Previous work on Nez Perce

The first linguistic fieldwork on Nez Perce was completed by the Presbyterian missionaries lead by the Rev. Henry H. Spalding. Two of the gospels were translated (1845), as well as a short guide to the language (1840) and a translation of the Westminster Shorter Catechism. Subsequently, the Fr. Anthony Morvillo completed a dictionary that can still be quite useful (1895).

Archie Phinney was a Nez Perce and the first Indian of the Columbia Plateau to earn a Ph.D. His dissertation included the completion of a comprehensive set of traditional stories, translated with interlinear glosses and published in 1934.

Anyone who has worked on Nez Perce since the 1960's has benefited from the foundation which Haruo Aoki has laid. Most of Nez Perce morphology is described in his articles (1962, 1963a, 1963b, 1966a, 1966b, 1968, 1975) and grammar (1970). While Aoki's grammar concentrates primarily on Nez Perce morphology, he provides a thorough listing of consonant clusters, as well as outlines of several consonant and vowel alternations. His descriptions of Nez Perce vowel harmony (1966, 1969) sparked a series of articles and other discussion in the 1960's (Zimmer 1967, Chomsky and Halle 1968, Jacobsen 1968, Kiparsky 1968, Rigsby and Silverstein 1969) and 1970's (Zwicky 1970, Hall and Hall 1977, Silverstein 1979). His contributions to Nez Perce ethnography and linguistics were also greatly enhanced by his publication of two sets of texts (1979, 1984), the second of which was in conjunction with Deward Walker. In his dictionary (1994), Aoki has provided a comprehensive, informative volume, which was an invaluable resource in guiding my own fieldwork. This dictionary acts as a sort of concordance to previous volumes of texts, and it is currently seeing heavy use in the Nez Perce Language Program.

Hoard (1978) provided a transcription of approximately seventy Nez Perce words in an article focusing on the occurrence of syllabic consonants in several Northwest Indian Languages. He brought to greater public attention and debate examples of many

apparently syllabic obstruents from a number of different Northwest languages. His close transcriptions were instrumental in sparking my own interest in Nez Perce.

Noel Rude completed a dissertation (1985) which deals primarily with Nez Perce syntax in a functionalist framework, based upon Aoki's (1979) and Phinney's (1934) texts, as well as his own fieldwork. Rude's grammar provides a very useful discussion of the inflectional morphology described in Aoki (1970), expanding on the earlier treatment in many ways. I found Rude (1985) to be very helpful in writing Chapter 2 of this dissertation, especially as I considered the different aspect and tense markers of the verb. Rude (1985) also considers the way in which topics are tracked morphologically through the discourse. It is unfortunate that this work, perhaps in revised form, has not been made more widely available. Rude has published articles on Nez Perce dealing with the functional analysis of agreement morphology (1986a, 1986b, 1988a), the relationship of Sahaptian to Klamath (1987), and development of the ergative marker (1991). In 1994, he gave a very helpful talk at the Hokan-Penutian Conference in Eugene, Oregon, on the phono-symbolic aspects of Nez Perce vowel harmony.

My own work on Nez Perce includes a published version (1995) of a talk (1994) given at the Hokan-Penutian Conference in Eugene, Oregon, in which I overview the basic principles of stress in Nez Perce, as well as the kinds of nouns which do not conform to the expected pattern. I presented a description of the phonetic cues to stress at the 1996 annual meeting of the Linguistic Society of America, in San Diego, California. I gave preliminary versions of my analysis of Nez Perce accent at the 1995 Hokan-Penutian conference in Berkeley, California, and at the 1996 Western Conference on Linguistics

(WECOL) in Santa Cruz, California (1996). I presented on stress in Nez Perce nouns at the 1996 meeting of the American Anthropological Association in San Fransisco, California. I prepared a course on the traditional narratives of Nez Perce, which I taught at the University of California, Los Angeles, Spring Quarter, 1997. In 1999, I presented a talk at the annual meeting of the Linguistic Society of America on the implications of a language program's choices in teachers for the future phonology an endangered language. In addition to this dissertation, I have developed an unpublished text for instruction of the Nez Perce language, which I am currently using in my courses at Lewis-Clark State College, in Lewiston, Idaho.

Chapter 2: Introductory sketch of Nez Perce

This chapter presents a grammatical sketch of Nez Perce. In §2.1, I discuss the basic principles of phonology. First, I provide a description of the phonemic inventory, and a short descriptions of vowel harmony. I then briefly discuss the syllable inventory, and the principles of primary stress assignment. These topics receive greater treatment in Chapters 3 and 5, but I briefly introduce them here because it is necessary to appeal to certain basic notions of the syllable and stress in the discussions of syntax and morphology. In §2.2, I provide an overview of the syntax, along with the elements of the inflectional morphology. I give an in-depth survey of derivational and inflectional morphology in §2.3. All morphemes encountered in the latter chapters of this dissertation are presented in the discussion of morphology in §2.3. I give a lengthier description of some aspects of syntax in §2.4. §2.5 is an index which lists all of the morphemes along with several of their most relevant properties for the discussion of stress in Chapter 4.

The reader will notice considerable variation between the underlying representations of most morphemes and their surface realizations. The explanation of this variation is a central task of the dissertation as a whole, so it cannot be attempted in Chapter 2. The reader will be referred to the relevant sections of the dissertation where those matters are given more discussion.

My treatment of Nez Perce morphology and syntax in this sketch has drawn heavily upon the previous descriptions done by Haruo Aoki and Noel Rude. Aoki's grammar (1970) provides descriptions of inflectional and derivational morphology, as

well as short sketches of phonology and syntax. For a much more extensive discussion of both syntax and inflection, the reader may consult Rude's unpublished dissertation (1985) and a published article (1986). Aoki's dictionary (1994) contains a wealth of descriptive information and exemplification of morphology. He lists all bound morphemes alphabetically. Throughout this sketch, I will refer the reader to the appropriate page numbers in the works by these two linguists, except in the case of the dictionary, where morphemes can be easily found in the text or through use of the comprehensive English index.

2.1 *Phonology*

In this section, I begin by covering the phonemic inventory and vowel harmony. I then briefly discuss the Nez Perce syllable and the basic principles of stress assignment. This section finishes with a historical overview of the different Nez Perce orthographic conventions.

2.1.1. Phonemic inventory

2.1.1.1. Consonants

Table (1) provides the Nez Perce inventory of consonants (see Aoki 1970:10).

(1)

	Labial	Dental	Alveolar	Velar	Post-Velar	Glottal
Plain						
Stops	p	t		k	q	ʔ
Affricates			c			
Fricatives		ɬ	s	x	χ	h
Nasals	m	n				
Glides	w			y		
Liquids		l				
Glottalized						
Stops	p'	t'		k'	q'	
Affricates			c'			
Nasals	m'	n'				
Glides	w'			y'		
Liquids		l'				

The following set of (near) minimal pairs from Aoki (1970:16-20) illustrates many of the contrasts among the unglottalized phonemes:[1]

(2)	a.	**p, t**	**pǽ:qt**	**tǽqt**
			'bark (of tree)'	'woodpecker'
	b.	**t, c**	**'á:tim**	**'á:cim**
			'come out!'	'come in!'
	c.	**k, q**	**pǽ:kt**	**pǽ:qt**
			'woman's younger bro.'	'bark (of tree)'
	d.	**q, ?**	**qí:wn**	**?í:wn**
			'old man'	'urination'
	e.	**w, ?**	**wú:yce**	**?ú:yise**
			'I run away'	'I begin'
	f.	**y, ?**	**wǽ:yikt**	**wǽ:?ikt**
			'to move across'	'grease'
	g.	**h, ?**	**hǽhǽtǽwìsǽ**	**?ǽhǽtǽwìsǽ**
			'he admires'	'I admire him'

[1]All examples quoted from other sources have been checked with native speakers except where indicated. Examples not cited as being found in a separate source are from my own fieldwork, although almost every noun and adjective and many verb forms are also found in Aoki (1994).

h.	**q, χ**	**qápqap** 'cottonwood tree'	**χápχap** 'skin disease'
i.	**c, s**	**hǽ:cu** 'wood'	**hǽ:su** 'eel'
j.	**t, s**	**hìwtælíiksæ** 'she spreads'	**hìwsælíiksæ** 'she stands'
k.	**k, h**	**kǽhæn** 'biceps'	**hǽhæn** 'plant stem'
l.	**m, n**	**ʔíim** 'you'	**ʔíin** 'me'
m.	**h, χ**	**hàlálàlcìx** 'we ululate'	**χàlálàlcìx** 'we walk the edge'
n.	**x, χ**	**ʔàwyáaxnòʔqa** 'I could see as I went'	**ʔàw'yáaχnòʔqa** 'I could find it'

There are a number of cases of apparent geminates in Nez Perce. In some cases, a series of two identical consonants occurs when the short vowel separating them is syncopated. When secondary stress is assigned to a word initial CVC syllable, the coda consonant of this stressed syllable is regularly lengthened when the syllable's vowel is short (see discussion in Chapter 4.3.2). There is also a derivational process that I call

emphatic gemination. A strong secondary stress is assigned to a word initial CV syllable (where V is short), and the following consonant is lengthened.

(3)	a.	**la'ám'**	b.	**là''ám'**
		'all'		'absolutely all'

The derived word has an intensified or emphatic meaning.

There are, however, a very few cases of double consonants for which I do not have an explanation at this time, perhaps less than ten. Two are given in (4).

(4)	a.	**k'állay**	'dog salmon'
	b.	**tìmmíyuce**	'I am deliberating'

I must conclude for the time being that Nez Perce allows some geminates, although it seems not unlikely that a non-phonemic explanation for the existence of such examples may be forthcoming.

The contrast between the glottalized and plain phonemes is illustrated by the following examples from Aoki (1970:18):

(5)	a.	**p, p'**	**páyn**	**p'áyn**
			'to arrive'	'to be drained'
	b.	**t, t'**	**táwn**	**t'áwn**
			'to make stone tools'	'to guess in game'
	c.	**c, c'**	**cǽ:wcæw**	**c'ǽ:wc'æw**
			'whisper'	'ghost'

d.	**k, k'**	**tùkúx** 'stiff'	**tùk'úx** 'straight'
e.	**q, q'**	**qócqoc** 'meadowlark'	**q'òcq'óc** 'naked'
f.	**n, n'**	**tìnú:n** 'divorcee'	**tìn'ú:n** 'male mountain sheep'
g.	**w, w'**	**wá:wa** 'mosquito'	**wá:w'a** 'fish hook'
h.	**y, y'**	**hǽ:yæy** 'steelhead'	**há:y'am** 'scratch me!'

ɬ and **l'** are the least common phonemes of Nez Perce. While there are no true minimal pairs that demonstrate contrast between them and **l**, there are plenty of examples where contrast can be demonstrated. In (6), for example, all three laterals occur in intervocalic position.

(6) a. **cú:ɬim**
'bull'

b. **wó:lìsa**
'I make an arrowhead'

c. **hàmól'ic**
'cutie'

The phonemes **l** and **ɬ** also occur word initially.

(7)	a.	**láwtiwà:**	b.	**ɬǽ:pɬæp**
		'friend'		'butterfly'

Although the phoneme **l'** is not found initially, this is expected because no glottalized sonorants occur word initially in Nez Perce.

Many instances of surface **x** and **χ** are derived from frication of underlying **k** and **q** (Aoki 1970:39; Rude 1985:20). Frication occurs before sonorant consonants (8), (10) and word finally (9), (11) (for more discussion of frication, see Chapter 3.3.).

(8)	a.	**tìn'úkin** **tin'uk-n** dead-NM 'death'	b.	**tìn'xníin** **tin'uk-n-hiin** dead-NM-ATRB 'dead'
(9)	a.	**tàsíipx** **tasiipk** cow.elk 'cow elk'	b.	**tàsíipkpa** **tasiipk-pe** cow.elk-LOC 'by a cow elk'
(10)	a.	**sàyáq'ic** **sayaq-'ic** be.beautiful-ADJ 'beautiful'	b.	**sàyχníin** **sayaq-n-hiin** be.beautiful-NM-ATRB 'beautified'
(11)	a.	**tásχ** **tasq** 'grease'	b.	**tàsqíin** **tasq-iin** grease-ATRB 'greasy'

However, there are clear cases where **x** and **χ** are not derived by frication or any other process. The phoneme **χ** is one of the most common phonemes of Nez Perce. **χ** contrasts with **q** word initially (12) and intervocalically (13):

(12)	a.	**qápqap** 'cottonwood tree'	b.	**χápχap** 'skin disease' (Aoki 1970:16)
	c.	**qáws** 'Lomatium cous'	d.	**χáw'ic** 'sharp'
	e.	**qéetqet** 'duck'	f.	**χétχet** 'spine'
(13)	a.	**néqe** 'half'	b.	**tè'éχet** 'teenage boy'
	c.	**hìqa'ánca** 'he respects'	d.	**hìχa'áwca** 'there is a hole'

The velar fricative **x** is one of the least common of phonemes and appears marginal in comparison to the uvular fricative **χ**. There are no cases where **x** occurs intervocalically. There are half a dozen examples where **x** occurs word initially.

(14)	a.	**xè'éyce** 'I get up'	b.	**xìcúuynin'** 'dented'
	c.	**xìwíwxiwìw** 'cut, gashed'	d.	**xùyyíi** 'appear'
	e.	**xìc'xíic** 'rubber'	f.	**xìxáwxixàw** 'stretched tight'

There are also examples where **x** contrasts with **k** when it occurs medially before **c** and **s**.

(15)	a.	**tíkc** 'bridge'		b.	**lóxc** 'industrious'
	c.	**hìpúkce** 'it is loosened'		d.	**cáaxcàax** 'wild onion'
(16)	a.	**hìtíyèkse** 'it perches'		b.	**hìk'úuxsce** 'it is mounded'

In addition, word finally, some cases of **x** are underlyingly **k** but others are **x**. In (17)-(18), the stems have a final **x** that does not undergo alternation with **k**.

(17)	a.	**càwíitx** **cawiitx** wild.parsnip 'wild parsnip'		b.	**càwitáxpa** **cawiitx-pe** wild.parsnip-LOC 'on a wild parship'
(18)	a.	**cèmíitx** **cemiitx** huckleberry 'huckleberry'		b.	**cèmitéxpe** **cemiitx-pe** huckleberry -LOC 'on a huckleberry'

This contrasts with the examples in (19)-(20) that do undergo this alternation because they have word final **k** which fricativizes to **x** word finally.

(19)	a.	**tìn'úkin** **tn'uk-n** die-NM 'death'		b.	**tìn'xníin** **tn'uk-niin** die-ATRB 'dead'

(20) a. **tàsíipx**
tasiipk
cow.elk
'cow elk'

b. **tàsíipkpa**
tasiipk-pe
cow.elk-LOC
'by a cow elk'

On the basis of these examples, I conclude that **x** is a phoneme, although a borderline one. It has probably become contrastive only fairly recently in the language's history.

2.1.1.2. Vowels and vowel harmony

The inventory of vowels is shown in (21) (see Aoki 1970:10).

(21) Vowels:

	Short			Long		
	Front	Central	Back	Front	Central	Back
High	**i**		**u**	**i:**		**u:**
Mid			**o**			**o:**
Low	**æ**	**a**		**æ:**	**a:**	

Minimal sets showing contrasts for these vowels are as follows (Aoki 1970:19):

(22)	a.	**æ, a, u**	**sǽhæy** 'worm'	**sáhay** 'sore'	**súhuy** 'fish fat'
	b.	**o, u**	**qòlosqólos** 'esophagus'		**qùlusqú:lus** 'dandruff'
	c.	**i, æ**	**nìkísæ** '(place name)'		**nǽkísæ** 'I think'

The contrastive nature of vowel length in shown in (22) (Aoki 1970:20).

(23)	a.	**sís**	**sí:s**
		'navel'	'soup'
	b.	**mǽqæ'**	**mǽ:qæ'**
		'maternal uncle'	'snow'
	c.	**'ató'sa**	**'à:tó'sa**
		'I go out to see mine'	'I go out to see'

Nez Perce vowel harmony is a topic that attracted considerable discussion in the 1960's and 1970's. Aoki (1966b) provided the first comprehensive study of this phenomenon. Nez Perce morphemes either contain vowels from the "dominant" Set A or the "recessive" Set B (24). If a morpheme with a dominant vowel or vowels is concatenated with a morpheme or stem that has recessive vowels, all vowels in the resulting word will be of the dominant set.[2]

(24) Set A (dominant) a. **i**

o

a

Set B (recessive) b. **i** **u**

æ

It is interesting that both sets contain the high front vowel **i**. There are in fact morphemes that only have the vowel **i** and are dominant (e.g, **ck'iil** 'to destroy'), and others with only

i that are recessive (e.g., **siis** 'soup'). However, there is no acoustic difference between **i** in a recessive word and **i** in a dominant word. This indicates that dominance and recessiveness are attributes of the morpheme, and that the vowel **i** simply does not participate in vowel harmony.

Vowel harmony is both progressive and regressive. First, consider an example of regressive harmony in (25).

(25)	a.	**/wæːyik-sæ/**	**[wǽːyìksæ]**	'I am going across'
	b.	**/wæːyik-sæ-næ/**	**[wǽːyìksæ̀næ]**	'I went across long ago'
	c.	**/wæːyik-sæ-qa/**	**[wáːyìksàqa]**	'I went across recently'

The verb stem **wæːyik** and the tense/aspect markers **-sæ** 'indicative' and **-næ** 'remote past' all have vowels from the recessive set. When **-qa** 'recent past', which contains the dominant vowel **a**, is suffixed, each vowels changes to its corresponding dominant correspondent. The recessive-dominant correspondences are represented in (26).

(26) **æ → a, u → o**

The two compound nouns in (27) illustrate progressive harmony.

(27)	a.	**màc'yóːsàtay**	b.	**háːmàtnon**
		mac'áyoː-sætæy		**háːma-tnúːn**
		ear-hair		man-divorcee
		'ear hair'		'divorced man'

---

[2] There are in fact a few examples when vowel harmony does not obtain, as in the word **cúuɨim'ayn** 'for a bull'. A discussion of exceptions to vowel harmony is given in Chapter 3.2.1.

In the first case, 'ear hair' is composed of the stems in (28).

(28) a. **mac'áyo** 'ear' b. **sǽtæy** 'hair'

When concatenated, the stem with the dominant vowels **mac'áyo** causes the vowels of the following stem **sǽtæy** to change to dominant vowels.

(29) **màc'yóːsàtay**
mac'áyoː - sǽtæy
'ear' 'hair'
'ear hair'

The same process is seen in the case of divorced man.

(30) a. **háːma** 'man' b. **tìnúːn** 'divorcee'

When these nouns are compounded, the noun **háːma** with dominant vowels causes the recessive vowels of **tinúːn** 'divorcee' to become dominant.

(31) **háːmàtnon**
háːma - tnúːn
'man' 'divorcee'
'divorced man'

Harmony in compounds can be either progressive or regressive, depending on which stem has dominant vowels. I provide additional discussion of vowel harmony in Chapter 3.1.

Other changes in the stems just discussed are apparent, including the alternation of the short **i** in the first syllable of **tinúːn** 'divorcee' and shortening of underlying long

vowels in both **sætæy** 'hair' and **tinu:n**. The syllable driven epenthesis of short **i** is discussed in §2.1.3. below. Vowel shortening is discussed in Chapter 4.2.1.4.

Nez Perce has both short and long diphthongs, as exemplified in (32) and (33).

(32)	**aw**	**láwtiwà:**	'friend'
	ay	**máymay**	'intestines'
	æw	**tǽwyæ̀ksæ**	'I feel'
	æy	**mùt'ælǽymæ**	'Downriver People'
	uy	**k'úyc**	'nine'
	oy	**lòqóyloqòy**	'slender'
	iw	**làymíwt**	'younger'
(33)	**a:w**	**há:wn**	'rapids'
	a:y	**pá:yn**	'to arrive'
	æ:w	**tǽ:wtæs**	'rope'
	æ:y	**mǽ:ywi**	'morning'
	u:y	**hìpst'ú:ycæ**	'I am satisfied'
	o:y	**tá:m'lò:yìsa**	'I am piling up rocks for a signal'
	i:w	**qí:wn**	'elderly man'

The quality of a diphthong's nucleus vowel is affected by the following glide, especially in a short diphthong. This is most readily perceived in the diphthong **ǽy**, which is realized as [**é**y]. The diphthong **áy** is also affected in that the low vowel is raised and is realized a bit forward of **a**, but the effect is considerably less than that heard with **ey**. The long diphthongs are also affected but to a lesser extent. The diphthong **æ:y** is realized approximately as [**æey**], such that the vowel begins low and moves upwards through its duration. The diphthong **a:y** is scarcely affected at all. By contrast, the unstressed

allophones of the two short diphthongs **ay** and **æy** are scarcely distinguishable. The low vowels in both are raised and fronted. The low vowel in unstressed **æy** is still realized as **e**, while the low vowel in unstressed **ay** is between **ə** and **e** (for discussion of vowel allophony see Chapter 4.3.4).

2.1.3. Syllable structure

The Nez Perce syllable inventory is given in (34).

(34)	Super-Heavy	CVVC, CVV
	Heavy	CVC
	Light	CV

These syllable weights are distinguished by different stress behaviors depending on context. Syllable weight and stress are discussed in the next section (§2.1.4).

Aoki (1970:21) and Rude (1985:14-5) both agree that the maximum onset is C. Complex onsets are never allowed. There are many CC and CCC initial stems, but in every case epenthesis breaks up the cluster if it is word initial:

(35) a. **'ìníise**
'nii-see
give-INC
'I give'

b. **hì'níise**
hii-'nii-see
3-give-INC
'he gives'

(36) a. **cìklíise**
cklíi-see
return-INC
'I return'

b. **hìckilíise**
hii-cklíi-see
3-return-INC
'he returns'

To show that these are not cases of syncope instead of epenthesis, I provide the examples in (37)-(38), where the presence of the short vowel in the first syllable of the stem does not alternate.

(37)	a.	**cìlúuse** **cilúu-see** boil-INC 'I am boiling' (something)		b.	**hìcilúuse** **hi-cilúu-see** 3-boil-INC 'he is boiling'
(38)	a.	**k'ìlkíce** **k'ilki-cee** be.blocked-INC 'I am blocked'		b.	**hìk'ilkíce** **hi-k'ilki-cee** 3-be.blocked-INC 'he is blocked'

On the status of the Nez Perce coda there is less unanimity. Aoki posits up to four coda positions. Rude suggests there is one. I agree with Rude, with one exception. I find that Nez Perce allows **x̂s/x̂c** codas.

Aoki (1970) lists some very long clusters that must be explained, in order maintain the claim that with one exception Nez Perce lacks complex codas. The longest series of consonants that Aoki presents are all derived from morphological concatenation of -C suffixes, as in (39).

(39)	a.	**wáwt'òkckt** **wawt'okc-k-t** hatch-SF-NM 'hatching'		b.	**wàlápsksa** **waláps-k-see** jerk.away-SF-INC 'I jerk away' (something)

Both of these examples have roots that end in CC. They then add the stem fomative **-k** plus either the nominalizer **-t** (39a) or other morphology (39b). I find that most series of CCC and all series of CCCC are morphologically licensed.

Aoki (1970, 1994) presents one case of CCCC that is morphologically simplex. However, this has glottal stop preceding a sonorant:

(40) **títè'wxc**
'chiselmouth fish'

In Nez Perce, glottalized sonorants are preglottalized, so I believe that 'chiselmouth fish' is really as in (41).

(41) **títèw'xc**
'chiselmouth fish'

This leaves us with a CCC series that must be explained, as well as many stems that end in CC and a very few others that end in CCC.

It is the stress pattern of Nez Perce which best illustrates the nature of the syllable in cases of final clusters. Nez Perce nouns that are unaccented normally have shifting penultimate stress.

(42) a. **pískis**
'door'

b. **múq'uc**
'sucker fish'

b. **pìskísne**
piskis-ne
'door (OBJ)'

b. **mùq'úcpe**
muq'uc-pe
'sucker fish (LOC)'

However, when a word ends in a cluster, stress is assigned to the rightmost vowel. Stress shift in these cases takes place through epenthesis which allows main stress to be located closer to the right edge, without being word final.

(43)	a.	**tùpé'c**	b.	**tùpe'ésne**	
				tupe'c-ne	
		'rib'		'rib (OBJ)'	
(44)	a.	**nàcó'x̂**	b.	**nàco'óx̂na**	
				naco'x̂-ne	
		'salmon'		'chinook salmon (OBJ)'	

If these words ended in a CVCC syllable, we would expect to see them stressed as ***túpe'c** and ***náco'x̂**. There is in fact a small set of six words with this pattern. All of them end in **x̂s** or **x̂c**:

(45)	a.	**píyex̂s**	b.	**piyéx̂sne**
				piyex̂s-ne
		'rawhide rope'		'rawhide rope (OBJ)'
(46)	a.	**sísex̂s**	b.	**sìsté x̂sne**
				sisex̂s-ne
		'crotch'		'crotch (obj)'

These examples show that CC codas are allowed for **x̂s/x̂c**. For the other final CC clusters, I conclude that they are syllabified as follows, with final syllabic consonants.

(47)	a.	**tùpé'.c**	b.	**nàcó'.x̂**
		'rib'		'chinook salmon'

These final consonants cannot receive main stress (unless a vowel is epenthesized, as in the inflected examples (43b), (44b)), but the final syllabic consonant does allow these words and those like the following examples to fall into the Nez Perce penultimate stress pattern:

(48)	a.	**páap.s**	**pàpásna**	'red fir (NOM)/(OBJ)'
	b.	**qìláas.x̂**	**qìlasáx̂na**	'otter (NOM)/(OBJ)'

c.	**tá'.c**	**tà'ásna**	'good (NOM)/(OBJ)'
d.	**màq.s.máq.s**	**màq.s.máq.s.na**	'yellow (NOM)/(OBJ)'

The pronunciation of these words also points to the syllabic nature of the final C's. The first consonant of the cluster is lengthened and held slightly before transitioning to the next syllable. Hoard (1978) observed similar syllabification for some of these words. When a native speakers says these words with clusters it contrasts strikingly with the pronunciation of English speakers learning Nez Perce. Native speakers of Nez Perce lengthen the first consonant of the cluster before transitioning to the following syllabic consonant. English speakers learning Nez Perce do not sound the same. Instead, they transition quickly to the second consonant, which is in some cases lengthened. Presumably the contrast is created because English allows CC codas in contrast to Nez Perce.

There remains a very small set of words that end in tri-consonantal clusters. Four such examples are given in (49).

(49)	a.	**títèw'xc**	'chiselmouth fish'
	b.	**mú'pc**	'yearling fawn'
	c.	**pálx̂c**	'snowshoe rabbit'
	d.	**lílps**	'mushroom species'

In all cases, the CCC cluster has a medial fricative or ends in a fricative. It appears that the fricative allows for the licensing of a CC syllable. At least one of these words allows stress shift:

(50)	a.	**pálx̂c**	**pàlx̂ísna**	'snowshoe rabbit (NOM)/(OBJ)'

Hoard represented examples like these in his transcriptions with the obstruents separately syllabified, as in (51).

(51) **[mu'.p.c]** 'yearling fawn'

I conclude that with one exception, Nez Perce allows only a simplex coda. The excetion is the sequence **x̂s/x̂c**. Other examples of CC and CCC are either licensed morphologically, contain syllabic consonants, or both. For more on syllabic consonants and epenthesis, see Chapter 4.3.1.

2.1.4. Stress assignment

Nez Perce stress assignment is the problem taken up by Chapter 4, where I provide a series of explanations for Nez Perce stress phenomena based upon Optimality Theory. In this section, I give a short introduction to stress, because it affects the realization of morphemes in quite obvious ways. In this chapter, I indicate many accented syllables and long vowels in the underlying representations which do not appear in the surface representations. This brief survey explains the basic principles of stress which account for the relationships between the underlying represenations and the surface forms.

The Nez Perce syllable inventory is repeated from (34).

(34)	Super-Heavy	CVVC, CVV
	Heavy	CVC
	Light	CV

These syllable types have different stress behaviors depending on context. Super-heavy syllables always have at least secondary stress.

(52) a. **c'íiiłèe**
'ermine'

b. **hìtéemènwèes**
'school'

CVC syllables always have secondary stress, unless they are word final. A word final CVC syllable is normally stressless.

(53) a. **pískis**
'door'

b. **wéeptes**
'eagle'

There are two excepetions to this observation. A word final CVC syllable that is underlyingly accented will have secondary stress. In (54), the aspect markers, 'incompletive plural' and irrealis' are both accented. They do not receive primary stress, but they still get secondary stress (for discussion of how Nez Perce chooses which accent to receive primary stress, see Chapter 5.5.3).

(54) a. **wéeyìksìx**
wéeyik-síix
cross-INC.PL
'we are crossing'

b. **wéeyìkù'**
wéeyik-ú'
cross-IRR
'I will cross'

In a reduplicated stem, a word final CVC syllable will have secondary stress when it is in correspondence with a syllable that has main stress.

(55) a. **łìłípłìłip**
'ribbon'

b. **qùyéesquyès**
'Stellar's jay'

The CV syllables receive secondary stress when they are word initial:

(56)	a.	**cìwíitìtit** **ciwíititit** 'killdeer'		b.	**tèqecíckùpt** **tqecíckupt** 'sudden alarm'

CV syllables also receive secondary stress when they are the odd member in a series of two light syllables.

(57)	a.	**tàmatáha** **tamataha** 'Tomitaha Creek, Idaho'		b.	**'àláwyàlacàqa** **'e-láwyala-cee-qa** 3OB-gaff-INC-REC 'I was recently gaffing it'

CV syllables are always stressless word finally unless they are accented:

(58)	a.	**tùy'é** 'blue grouse'		b.	**mèx̂sèm'mé** 'from the mountains'

For more on secondary stress see Chapter 4.3.

Normally, an underlying long vowel has length in a surface form only if it has primary stress. Thus, since there is only one syllable in each word, there is at most one long vowel in each word (although there are a number of morphologically licensed exceptions). On the other hand, main stress does not imply length. A vowel will be long only if it is underlyingly long, and its syllable has main stress in the word's surface form. This is seen in the following examples:

(59)	a.	**pískis** **piskis** door 'door'		b.	**pìskísne** **piskis-ne** door-OBJ 'door (OBJ)'

(60)	a.	**wéeptes**	b.	**wèptéesne**
		weeptees		**weeptees-nc**
		eagle		eagle-OBJ
		'eagle'		'eagle (OBJ)'

pískis 'door' has no underlying long vowels and **wéeptes** 'eagle' has two. When main stress is assigned to either vowel in 'door' neither one has length, but both vowels have length in 'eagle' under main stress, because they are both underlyingly long (for more on vowel shortening, see Chapter 4.2.1.4).

The examples in (59)-(60) also illustrate the pattern of penultimate stress, which I demonstrated in the previous section. In a large proportion of Nez Perce words, regular principles of stress assignment determine that stress will go on the penult. When words are uninflected, as in (59a),(60a), then stress is assigned to the next to last syllable of the stem. When a case suffix is added, stress is assigned on the stem's last syllable (59b),(60b). The pattern of shifting, penultimate stress is seen with words that lack accent (for more on regular stress assignment in Nez Perce, see Chapter 4.2). As explained in the previous section, when words end in a CC or CCC cluster, the final C is syllabified and this allows stress to be assigned to the last vowel in words like **tùpé'.c** 'rib' and **nàcó'.x̂** 'chinook salmon' without violating the pattern of penultimate stress. Stress is penultimate in these examples because it precedes a word final syllabic consonant.

Nez Perce is similar to Sanskrit and Salish in that regular principles assign main stress, but those regular principles take precedence only as long as there are no syllables

with lexical accent in the word. Assigning main stress to an accented syllable is more important than assigning stress by the regular principles. The words in (61)-(62) have lexical accent, so stress does not shift.

(61)	a.	**mímqas**	b.	**mímqàsna**
		mímqas		**mímqas-ne**
		orange		orange-OBJ
		'orange' (the fruit)		'orange (OBJ)'
(62)	a.	**háama**	b.	**háamàna**
		háama		**háama-ne**
		man		man-OBJ
		'man'		'man (OBJ)'

Accent is indicated in the underlying representations with ´. I do not indicate secondary stress or primary stress that is assigned by regular principles in the underlying forms, because in those cases stress is predictable.

2.1.5. Orthographic conventions

Throughout the more than a century and a half that people have been writing Nez Perce, they have used several different orthographies. It would be an understatement to say that the issue of which orthography to use is a thorny one in Native American applied linguistics. In many cases, older speakers are used to and emotionally attached to a system that was introduced many years ago, often in the 1800's. Unfortunately, these older writing systems often neglect to indicate such things as glottalization and the difference between velar and uvular places of articulation. The elders themselves have no problem

using these systems, because they already have a native knowledge of the words, and they can deduce from context what a word's identity is. However, younger members of a community usually approach the language as second language learners, and they find it difficult to make the distinctions in pronunciation expected of them by the elders without the clues provided by a modern orthography. The change from an older system to a newer system for the sake of younger members can involve considerable distress, calling for patience and understanding all around. It is a credit to the elders of the Nez Perce Tribe that they have made the switch to a practical orthography for the sake of younger members of their communities.

At least six different orthographies have seen significant use. The oldest is it the Spalding orthography. Presbyterian missionaries introduced this system in the early 19th Century. This was followed by the Morvillo orthography. The Jesuit mission to the Nez Perce developed this writing system later in the 19th Century. Early in the 20th century, Archie Phinney completed his dissertation in anthropology at Columbia University, and developed an orthography to record the volume of texts that he published. Haruo Aoki has done the most pioneering work in Nez Perce linguistics, beginning in the 1960's. He has used a phonetic orthography typical of Americanists. Noel Rude followed Aoki's work beginning in the 1980's. Rude's orthography and that of the practical orthography now in use by the Nez Perce are nearly identical. I will now present and contrast these different orthographies.

Missionaries from the Presbyterian church, particularly the Spaldings, developed a writing system for hymns and portions of the Bible in the early19th Century, which relies

heavily on English spelling conventions. This orthography and variations of it are still used by many tribal members on the Idaho Reservation, particularly in churches. The six Indian Presbyterian churches on the Nez Perce Reservation recently republished one of their hymnals and the Westminster Catechism using this orthography. (63) and (64) compare the Nez Perce phonemic inventory (63a),(64a) with the Spalding representations (63b),(64b).

(63)

a.	p	t	c	k	q	ʔ	ɬ	s	x	χ	h	m	n	w	y	l	p'	t'	c'	k'	q'	m'	n'	w'	y'	l'
b.	p	t	ts	k	k		l	s	kth	kth	h	m	n	w	y	l	p	t	ts	k	k	m	n	w	y	l

(64)

a.	i	æ	a	u	o	iː	æː	aː	uː	oː	[ə]	[ɛ]	[ay]	[ey]	[aw]	[š]
b.	i	a	a/o	oo/u	o	ee	a	a	oo	o	u	e	ii/ai	e	au	sh

Distinctions missing from this orthography include glottalization, the contrast between velar and uvular places of articulation, glottal stop, vowel length (except for the vowel **i**), and stress. The Spalding orthography indicates the schwa allophone of the two low vowels, the epsilon allophone of **æ**, and three diphthongs. In some cases, there is more than one way of representing a sound. The Spalding orthography has been in continual use for over 150 years, and various conventions have been added during that time.

The Spalding orthography also writes the š allophone of **s** as **sh**. **s** palatalizes to š when it is adjacent to high vowels and **y** in the speech of some individuals. In the speech of current speakers, palatalization is usually only very slight. Spalding and the other

missionaries represented it as occurring in the context of low vowels, something that I have never observed.

The examples in (65) provide illustration of the orthography in use.

(65)	a.	**Neemeepoo** 'Nez Perce'	[nìmí:pù:]	b.	**piineewaas** (place name)	[pá:yniwà:s]
	c.	**kthakthats** 'grizzly bear'	[χáχà:c]	d.	**him** 'mouth'	[hím']

For the fluent native speakers of the 19th Century and the first half of the 20th Century, the Spalding orthography did not present a problem. It provided more than enough clues to a word's identity in the context of a Bible passage or hymn, particularly when many of these texts and songs had become well-known. However, as fluency has waned, this system presents difficulties for less fluent individuals. Both the Methodist and Presbyterian churches have held special classes to learn the words in the hymns, and because even today's elders sometimes have to struggle to make out the correct words to sing.

For those who are trying to learn Nez Perce as a second language, the challenge presented by the Spalding system is even greater. The lack of differentiation between the glottalized and unglottalized consonants is especially problematic. This is a vital difference in the sound system, and it is one which can be difficult for a native speaker of English to learn. If the orthography does not represent glottalization, it makes it very hard for learners, particularly adults, to make the distinctions consistently. The same problem arises with vowel length and with the difference between velar and uvular consonants.

The Spalding system has been adapted for use in public signage both by the Nez Perce Tribe and by non-Indians in the area. Hyphens are used to make syllabification explicit. The modification of Spalding's system is illustrated in (66).

(66)	a.	**Nee-mee-poo** **Nee Mee Poo** 'Nez Perce'	**[nìmí:pù:]**	b.	**pii-nee-waas** **Pii Nee Waas** (place name)	**[pá:yniwà:s]**
	c.	**ktha-kthats** **ktha kthats** 'grizzly bear'	**[χáχà:c]**	d.	**him** **him** 'mouth'	**[hím']**

Hyphenation can be an aid to pronunciation for those who are entirely new to the language, but it is not helpful to someone trying to actually understand a written text. Those using the dashed style tend to be inconsistent in representing word boundaries. Syllabification does not necessarily follow morpheme boundaries either, and this can be an additional source of confusion to the student. Again, for those who already know the language, it is usually possible to figure out the meaning, but this is very difficult for the beginner.

Morvillo, a Jesuit missionary living on the Idaho Reservation, produced the first published dictionary of Nez Perce. It was printed in1895. (67) and (68) compare Morvillo's orthography (67b),(68b) with the Nez Perce phonemic inventory (67a),(68a).

(67)

a.	**p t c k q ʔ**	**ɬ s x χ h**	**m n w y l**	**p' t' c' k' q'**	**m' n' w' y' l'**
b.	**p t z k k**	**l s g g**	**m n u y l**	**p t z k k**	**m n u y l**

(68)

a.	**i æ a u o**	**iː æː aː uː oː**
b.	**i e a u o**	**ee a a oo o**

Like Spalding, Morvillo did not represent glottalization, glottal stop, vowel length, or the distinction between velar and uvular consonants. Morvillo did not represent **h**.

Morvillo's dictionary describes "**S** as in the English word *she*." I interpret this as coming from the influence of the Spalding orthography.

Morvillo represented the five vowels more systematically than they were in the Spalding orthography, introducing the use of **e** for **æ**. He also indicated main stress.

(69)	a.	**Nimípu** 'Nez Perce'	**[nìmíːpùː]**	b.	**páinıuas** (place name)	**[páːyniwàːs]**
	c.	**gagáz** 'grizzly bear'	**[χáχàːc]** [3]	d.	**him** 'mouth'	**[hím']**

Morvillo's system never gained the popularity of use that the Spalding system achieved. Presbyterianism was introduced earlier and was much more widely adopted by the Nez Perce than was Catholicism, and this may explain in part why the Nez Perce make use of the orthography of one set of missionaries more widely than the other.

---

[3] Morvillo indicates stress on the ultima for 'grizzly bear', but every speaker and all texts with which I am familiar have main stress on the first syllable, which has a short vowel, and secondary stress on the following long vowel. It would not be surprizing if Morvillo made a mistake in this instance since 'grizzly bear' has one of the most unusual stress patterns in the language, and long vowels are usually stressed.

In 1934, Archie Phinney, a Nez Perce and the first Plateau Indian to earn a Ph.D., published an important volume of folktales recorded from his mother, Weyíiletpuu (literally 'Cayuse person'), a speaker of Lower River Nez Perce. Phinney's orthography was comparable to those employed by Boas and other anthropologists and philologists at Columbia University at that time. (70) and (71) compare the Nez Perce phonemic inventory (70a), (70a) with Phinney's system (70b),(71b).

(70)

a.	**p t c k q ʔ**	**ɬ s x χ h**	**m n w y l**	**p' t' c' k' q'**	**m' n' w' y' l'**
b.	**p t ts k k**	**ɬ s x x̣ h θ**	**m n w y l**	**p' t' ts' k' q'**	**m' n' w' y' l'**

(71)

a.	**i æ a u o**	**iː æː aː uː oː**
b.	**ɪ å a u o**	**i å a u o**

Phinney's orthography is the first to indicate glottalization and the distinction between velars and uvulars. Like Morvillo he marked main stress. He did not mark glottal stop. Phinney also has the phone θ. Theta is not found at all found among the Idaho dialects. Its presence in Phinney's texts might be attributable to the fact that the dialect he was describing was from the Lower Snake River, quite close to the Umatilla Sahaptins, from whom words were surely borrowed from time to time. In any case, θ occurs very infrequently even in Phinney's narratives.

Phinney did not represent vowel length, but it can in some places be inferred. Phinney stated in the introduction to the texts that vowels with main stress have length

except for the vowel ɩ (he does not state whether vowels without main stress have length, which in fact they do). While there is an important correspondence between main stress and vowel length, it is far from one of implication. There are many, many examples of the other short vowels besides **i** (realized as its allophone ɩ) occurring with main stress (72). There are also long vowels that occur without main stress (73).

(72)	a.	**qúpqup**	'backbone'	b.	**tátx**	'spotted fawn'
	b.	**χǽχus**	'green'	c.	**cóqoy**	'smokehole'
(73)	a.	**χáχà:c**	'grizzly'	b.	**wísì:**	'rat'
	c.	**qà:sí'**	'bumble bee'	c.	**tæ̀:mísquy**	'tree sap'

Although Phinney was describing a Lower Snake River dialect, which is otherwise poorly documented, the language as it appears in his texts is really not very different from Upper River Nez Perce. It is also not the case that main stress implies vowel length in the neighboring Sahaptin language, so Phinney was not describing a borrowed trait.

My conclusion is that there must be vowel length which is not marked in Phinney's texts. There are surely many short stressed vowels in his texts as well a number of long vowels that lack main stress. We can only roughly infer the locations of these vowels from what we know of the Upriver dialects. However, one distinction seems clear. We may assume that wherever Phinney wrote **i** with stress it must have been a long vowel because he explicitly mentions this contrast with ɩ.

The examples in (74) further illustrate Phinney's orthography.

(74)	a.	**nimípu** 'Nez Perce'	**[nìmí:pù:]**		b.	**páyniwas** (place name)	**[pá:yniwà:s]**
	c.	**x̣áx̣ats** 'grizzly bear'	**[χáχà:c]**		d.	**him'** 'mouth'	**[hím']**

The Nez Perce never made popular use of Phinney's writing system, but it still carries significance for the Tribe. Although he died in a car accident as a fairly young man, the work he completed is widely recognized for its very significant contribution to the Tribe's cultural heritage. When questions of orthography are brought up, his system is usually mentioned.

From the 1960's through 1994, Haruo Aoki, the linguist who has done by far the most to document the Nez Perce language, published several articles (1962, 1963, 1966a, 1966b, 1970, 1975), a grammar (1970), two sets of texts (1979 and 1984 with Deward Walker), and a dictionary (1994). A student of UC Berkeley's Mary Haas, he employs an Americanist phonetic orthography. Most linguists since the 1960's have followed his lead. (75) and (76) contrast his orthography (75b), (76b) with the representations of the system of phonemes given previously (75a), (76a).

(75)

a.	**p**	**t**	**c**	**k**	**q**	**ʔ**	**ɬ**	**s**	**x**	**χ**	**h**	**m n w y l**	**p'**	**t'**	**c'**	**k'**	**q'**	**m' n' w' y' l'**
b.	**p**	**t**	**c**	**k**	**q**	**ʔ**	**ɬ**	**s**	**x**	**x̣**	**h**	**m n w y l**	**p'**	**t'**	**c'**	**k'**	**q'**	**m' n' w' y' l'**

(76)

a.	**i**	**æ**	**a**	**u**	**o**	**iː**	**æː**	**aː**	**uː**	**oː**
b.	**ɪ**	**e**	**a**	**u**	**o**	**iˑ**	**eˑ**	**aˑ**	**uˑ**	**o**

Aoki was the first to write **c/c'** for the affricate. He follows Morvillo in using **e** for **æ** and Phinney in using **x̣**. He also marks primary stress.

(77)	a.	**nimí·pu·** 'Nez Perce'	**[nìmíːpùː]**	b.	**pá·yniwa·s** (place name)	**[páːyniwàːs]**
	c.	**x̣áx̣a·c** 'grizzly bear'	**[χáχàːc]**	d.	**hím'** 'mouth'	**[hím']**

Length is indicated with a single raised dot following the vowel or consonant (e.g., **a·** or **s·**). Aoki represents glottalized sounds with the hook directly over the letter (which is not done here for typographic reasons).

Noel Rude, who has produced a dissertation (1985) and published several articles on Nez Perce syntax and morphology (1986, 1987, 1991, 1994), uses Aoki's orthography with two variations.

(78)	a.	**nimíipuu** 'Nez Perce'	**[nìmíːpùː]**	b.	**páayniwaas** (place name)	**[páːyniwàːs]**
	c.	**x̣áx̣aac** 'grizzly bear'	**[χáχàːc]**	d.	**hím'** 'mouth'	**[hím']**

Rude uses a digraph for long vowels (e.g., **aa** for **a·**) and for glottalized sounds. He also uses an apostrophe **'** in the place of **ʔ**.

Many members of Native American communities have found linguistic orthographies to be off-putting, particularly diacritics and special characters. In 1979, the Nez Perce Bilingual Education committee developed a practical orthography (Nez Perce Practical Orthography, hereafter NPPO) for use in several publications it produced for the Tribe's education program. This committee consisted of several Nez Perce elders, Professor Aoki, and Dr. Tupou L. Pulu of the National Bilingual Materials Development Center in Anchorage, Alaska.

(79)

a.	**p t c k q ʔ**	**ɬ s x χ h**	**m n w y l**	**p' t' c' k' q'**	**m' n' w' y' l'**
b.	**p t c k q '**	**ɬ s x x̂ h**	**m n w y l**	**p' t' c' k' q'**	**m' n' w' y' l'**

(80)

a.	**i æ a u o**	**iː**	**æː**	**aː**	**uː**	**oː**
b.	**i e a u o**	**ii**	**ee**	**aa**	**uu**	**oo**

The apostrophe is used in place of **ʔ** and **x̂** in place of **χ**. Glottalized sounds are marked with an apostrophe following the letter, and main stress is indicated.

(81)	a.	**nimíipuu** 'Nez Perce'	**[nìmíːpùː]**	b.	**páayniwaas** (place name)	**[páːyniwàːs]**
	c.	**x̂áx̂aac** 'grizzly bear'	**[χáχàːc]**	d.	**hím'** 'mouth'	**[hím']**

The NPPO has been adopted by the Lapwai schools and is currently employed in Nez Perce classes at Lewis-Clark State College. In March 1997, the Circle of Elders, a language advisory board for the Nez Perce Tribe, officially adopted this writing system for use in tribally sponsored language programs.

In my transcriptions, I will make use of the NPPO. This will provide no difficulty for professional linguists, and it will help to make the portions of this work more accessible to members of the community. Within square brackets, I will use Americanist phonetic orthography (APO). The two systems are compared in (82).

(82)	Transcriptions:	**ptckq '**	**łsxx̂h**	**mnwyl**	**p't'c'k'q'**	**m'n'w'y'l'**
		ieauo	**ii ee aa uu oo**			
	Within brackets:	**ptckqʔ**	**łsxχh**	**mnwyl**	**p't'c'k'q'**	**m'n'w'y'l'**
		iæauo	**iː æː aː uː oː**			

Rarely, a sequence of a consonant followed by a glottal stop occurs. In these cases, I will then use the symbol / in the transcription instead of an apostrophe (e.g., **hìpʔímse** 'it is growing).[4] An apostrophe preceding a consonant does not create confusion because it is never used to indicate a glottalized consonant (e.g., **ta'c** = **[taʔc]** 'good'). It can only indicate a series of glottal stop followed by a consonant. Additional IPA symbols such as ə, ɛ, and diacritics are used in phonetic transcriptions as needed. When discussing languages other than Nez Perce, I use the orthography of the sources cited.

The following chart provides a parallel comparison of the different systems alongside the phonetic orthography often employed by Americanists.

---

[4] Usually, when a sequence of **Cʔ** occurs, merger takes place to produce **C'**, although there are exceptions, particularly in the speech of older speakers.

(83) Table of orthographies

APO	Spalding	Morvillo	Phinney	Aoki	Rude	NPPO
p	p	p	p	p	p	p
t	t	t	t	t	t	t
k	k	k	k	k	k	k
q	k	k	q	q	q	q
ʔ	…	…	…	ʔ	’	’
c	ts	z	ts	c	c	c
ɬ	l	l	ɬ	ɬ	ɬ	ɬ
s	s	s	s	s	s	s
x	kth	g	x	x	x	x
χ	kth	g	x̣	x̣	x̣	x̂
h	h	h	h	h	h	h
m	m	m	m	m	m	m
n	n	m	n	n	n	n
w	u	w	w	w	w	w
y	y	y	y	y	y	y
l	l	l	l	l	l	l
p’	p	p	p’	p’	p’	p’
t’	t	t	t’	t’	t’	t’
k’	k	k	k’	k’	k’	k’
q’	k	k	q’	q’	q’	q’
c’	ts	z	ts’	c’	c’	c’
m’	m	m	m’	m’	m’	m’
n’	n	n	n’	n’	n’	n’
w’	w	w	w	w	w	w
y’	y	y	y	y	y	y
l’	l	l	l	l	l	l
i	ee/i	i	i	i	i	i
æ	a	e	å	e	e	e
a	a, o	a	a	a	a	a
o	o	o	o	o	o	o
u	oo	u	u	u	u	u
aˑ	…	…	aˑ	aˑ	aa	aa

2.2. *Overview of syntax and morphology*

Nez Perce has quite complex morphology, and it allows considerable freedom of word order. In the discussion of morphology in §2.3, issues of syntax will arise from time to time, and so for this reason, I begin with a thumbnail sketch of the most salient points of interaction between syntax and inflectional morphology. Discussion of derivational affixes is reserved for §2.3.

2.2.1. Word order and case marking

Nez Perce syntax is characterized by extremely free word order. The sentences in (84) illustrate some of the range of word order that one could find in a simple clause. They all mean 'The boy is frying the fish with the frying pan on the fire.' The sentence could also mean 'A boy is frying a fish with a frying pan on a fire' since Nez Perce does not have an article (Nez Perce does have a system of demonstratives). Case marking is the primary determiner of the thematic roles of the different noun phrases.

(84) a. **háacwàlnim péek'ùsmìse cùy'éemne k'úsmit'èski 'àláapa**
boy fry fish frying.pan fire

b. **péek'ùsmìse háacwàlnim cùy'éemne k'úsmit'èski 'àláapa**
c. **cùy'éemne háacwàlnim péek'ùsmìse k'úsmit'èski 'àláapa**
d. **k'úsmit'èski háacwàlnim péek'ùsmìse cùy'éemne 'àláapa**
e. **'àláapa háacwàlnim péek'ùsmìse cùy'éemne k'úsmit'èski**
f. **k'úsmit'èski péek'ùsmìse cùy'éemne 'àláapa háacwàlnim**
g. **cùy'éemne háacwàlnim k'úsmit'èski 'àláapa péek'ùsmìse**

Although any order of these constituents we have here is allowable, and all of these examples have the same basic meaning, a speaker may emphasize a nominal by placing it at the beginning of the clause. Some of today's remaining speakers are moving more towards SVO word order.

The full set of Nez Perce cases is provided in (85).

(85) Nez Perce case markers

a.	nominative	(NOM)	(zero case marking)
b.	ergative	(ERG)	**-m/-nm/-nim/-um**
c.	objective	(OBJ)	**-ne**
d.	instrumental	(INST)	**-ki**
e.	benefactive	(BEN)	**-'ayn**
f.	allative	(ALL)	**-k/-pk/-kek**
g.	locative	(LOC)	**-pe**
h.	ablative	(ABL)	**-kin'ik/-pkin'ik/-me**
i.	vocative	(VOC)	**-e/-e'**

The cases are discussed below in §2.3.1.4.2.

In Nez Perce, case marking generally disambiguates the role of nominal constituents. As we can see in (86), case indicates which noun phrase has which grammatical relationship in the sentence.

(86) **háacwàlnim péek'ùsmìse cùy'éemne k'úsmit'èski 'àláapa.**
háacwal-nim pée-k'úsmi-see cuy'éemne k'úsmit'es-ki 'aalaa-pa
boy-ERG 3ON3-fry- INC fish-OBJ frying.pan-INST fire-LOC
'The boy is frying the fish with the frying pan on the fire.'

Here are examples of the ergative (ERG), objective (OBJ), instrumental (INST), and locative (LOC) cases. We see the noun **háacwal** 'boy' in the objective case in (87):

(87) **háacwàlna péekce háamànm.**
háacwal-na pée-hek-cee háama-nm
boy-OBJ 3ON3-see- INC man-ERG
'The man sees the boy.'

There are unmarked nouns, which are used for intransitive subjects (88a) and predicate nominals (88b). Where it is necessary to contrast nouns in the marked cases with unmarked nouns, the unmarked will be termed the nominative (NOM).

(88) a. **háacwal hikúuse hìtéemènwèesx.**
háacwal hii-kuu-see hitéemenwees-x
boy 3-go- INC school-ALL
'The boy is going to school.'

b. **yóx̂ wàpàyataw'áat háacwal hîiwes.**
hii-wee-s
that helper boy 3-be-INC
'That helper is a boy.'

Example (89) compares three case forms for 'boy' – ergative, objective, and nominative.

(89) a. **háacwàlnim** b. **háacwàlna** c. **háacwal**
háacwal-nim **háacwal-ne** **háacwal**
boy-ERG boy-OBJ boy (NOM)

Nez Perce falls within Dixon's (1994) characterization of tripartite ergative languages. Dixon describes these tripartite systems as being uncommon; however, Nez Perce is typical for an ergative language in that its nominative is the unmarked case and that its ergative also indicates the genitive relation (90).

(90) a. **háacwàlnim pícpic** b. **'íinim kícuy**
háacwal-nm **'iin-nm**
boy-ERG cat I-ERG money
'the boy's cat' 'my money'

I provide additional discussion of noun phrases in §2.4.1.1.

In addition to the case suffixes, there are a number of bound postpositions that indicate more specific locations. For a more complete discussion of case markers and bound postpositions, see §2.3.1.4.2. below.

2.2.2. Verb agreement

The Nez Perce verb has partial subject/object agreement. In transitive clauses such as (91) with two third person arguments, person agreement is marked with a portmanteau prefix that indicates that a third person subject acts upon a third person object (hence "3ON3" for third person acting on third person).

(91) Third person subject with third person object: **pée-** ('3ON3')

háacwàlnim cùy'éemne péek'ùsmìse.
háacwal-nm cuu'yeem-ne pée-k'úsmi-see
boy-ERG fish-OBJ 3ON3-fry-INC
'The boy is frying the fish.'

Other verbal agreement morphemes code for the person and number of subjects and objects.

(92) Third person subject, intransitive verb: **hii-** ('3')

'áayat hìwéeyìkse.
'áayat hii-weeyik-see
woman 3-cross-INC 'The woman is crossing.'

(93) Third person object with first or second person subject: **'e-** ('3OB')

'áayàtna 'èekíce
'áayat-ne 'e-heki-cee
woman-OBJ 3OB-see- ASP 'I/you see the woman.'

There is generally no person agreement for arguments other than third person. One exception is the reflexives.

(94) Third person reflexive subject: **'ipnée-** ('3REFL-')

'áayat 'ìpnéekìce
'áayat 'ipnée-hek-cee
woman 3REFL-see-ASP 'The woman sees herself.'

Separate agreement prefixes exist for reflexives of first, second, and third person both singular and plural (94). These forms are given in §2.3.4.2.3.2. below. In addition, the cislocative can act as a first person object agreement marker. This is discussed in §2.4.2.4.

Number agreement is indicated separately from person agreement. The plurality of both subject and object are indicated even when person is not.

(95) **néesk'ùsmisìx**
nées-k'úsmi-síix
PLOBJ-fry-INC.PL
'We (PL) are frying you (PL.OBJ).' or 'You (PL) are frying us (PL.OBJ).'

Sentences like (95) are ambiguous, although in context surely the meaning is clear to both the speaker and the audience. All we know is that there are no third person or reflexive arguments, and both the subject and object are plural.[5]

In most intransitive clauses, in which the verb lacks the third person **hii-**, the subject is either first or second person.

---

[5] In some clauses, the cislocative suffix can be used to indicate that the activity is directed towards first person. The cislocative is discussed in §2.3.4.1.3.

(96) **kúuse 'ìtàmyáanwàasx.**
kuu-see 'itanyáanwaas-x
go-INC store-ALL
'I am going to the store.'/ 'You are going to the store.'

Out of context, clauses like (96) are usually translated with a first person English gloss, but unless they are disambiguated with a pronoun as in (97), they can be interpreted either way.

(97) **'ée kúuse 'ìtàmyáanwàasx.**
kuu-see 'itanyáanwaas-x
you go-INC store-ALL
'You are going to the store.'

When Nez Perce speakers are asked to produce a clause with a second person argument, they will usually include a second person pronoun. In casual conversation, when the reference of arguments is understood, pronouns are usually dropped.

Plurality is indicated on only a subset of nouns. Almost all of them are human nouns.

(98) **hàháacwàlnim hìnéesk'ùsmisìx cùy'éemne.**
ha-háacwal-nim hii-nées-k'úsmi-síix cuuy'eem-ne
PL-boy-ERG 3-PLOB-fry-INC.PL fish-OBJ
'The boys are frying the fish.'

Thus only the agreement marking on the verb indicates the plurality of **cuy'éemne** 'fish'. It is not even the case that all human nouns have plural forms.

2.3. *Morphology*

Although the traditional dichotomy between inflection and derivation is often difficult to maintain when describing a language's morphology, I will exploit these terms as a useful convention to give structure to the discussion in the following section.

I will at least mention here every morpheme that appears in the other chapters of this dissertation. I will provide a description of each class of morpheme. Nevertheless, this section is not an exhaustive catalogue of Nez Perce morphology. That task is beyond the scope of this sketch. The goals here are to provide an overview of how the morphological system functions, with comments on the typical sound changes associated with that system.

2.3.1. Noun morphology

In this overview, I begin with prefixation and then move to reduplication. There are three kinds of reduplication, two of which are clearly prefixal. The third kind is essentially a form of compounding, which itself is somewhat prefixal in nature. After discussing reduplication and compounding, I will continue to suffixation.

2.3.1.1. Prefixation of nouns

Nez Perce derives new nouns with several different prefixes, but except for reduplication, most noun prefixes are not very productive (see Aoki 1970:57-8 for discussion). I provide examples of two of the more productive derivational prefixes in

(99): **péh-** 'each' and **pii-** 'reciprocal' (**pii-** is also a productive verbal prefix (see §2.3.4.2.3.2.)).

(99)	a.	**pé'ìnwim**	b.	**piipe'èks**
		péh-'inwim		**pii-pe'eks**
		each-year		RECIP–co-wife
		'every year'		'rivals'[6]

Both of these prefixes are accented, but not all prefixes have this characteristic. Recall from §2.1.4 that an accented morpheme attracts stress but does not necessarily receive stress. A rival accented morpheme may receive stress instead (for additional discussion of multiple accents in the same word, see Chapter 4.3.3).

An example of an unaccented prefix is the possessive **ne'-** 'my'. This inflectional prefix which is used only on kinship terms.

(100)	a.	**nà'tóot**	b.	**nè'íic**
		ne'-toot		**ne'-'iic**
		my-father		my-mother
		'my father'		'my mother'

Like **ne'-**, most of the other noun prefixes have a quite restricted distribution. **ne'-** is part of an archaic system of possessive forms which exists only with kinship terms (see Aoki 1970:50 for further discussion of the kinship system of possessive prefixes).

---

[6] This word can be used for any kind of rivals regardless of gender or marital status.

2.3.1.2. Reduplication in nouns

At least two of the three kinds of Nez Perce reduplication can be clearly classified as prefixal: CV- reduplication and Ci- reduplication. CV- reduplication is used mostly with nouns and Ci- mostly with adjectives (see §2.3.2). Nez Perce uses prefixal reduplication is to express plurality and confines its use almost exclusively to nouns and adjectives referring to humans. Aoki discusses reduplication in his grammar (1970:42) as well as in an earlier article (1963a).

Examples of CV- reduplication are provided in (101)-(103).

(101)	a.	**háacwal**	b.	**hàhácwal**
				CV-**háacwal**
		'boy'		'boys'
(102)	a.	**mìyá'c**	b.	**màmáy'ac**
				CV-**myá'c**
		'child'		'children'[7]
(103)	a.	**hètè'ew**	b.	**hèhète'ew**
				CV-**hete'ew**
		'dear (SG)'		'dear (PL)'

When the initial C of the word is glottal stop, it is reduplicated as **h**.

(104)	a.	**'áayat**	b.	**hà'áyat**
				CV-**'áayat**
		'woman'		'women'

[7] The underlying form of 'child' is **mya'c**, with an initial consonant cluster. The vowel that is reduplicated is the stem vowel **a**. In the singular, the surface form of 'child' **miya'c**, includes the epenthesized high front vowel **i**, but as we can see in this example, it is not the epenthetic vowel that is reduplicated.

In Ci- prefixation, the initial consonant reduplicates and the vowel **i** takes the place of the vowel of the initial syllable. This kind of reduplication also indicates plurality.

(105)	a.	**ta'c**	b.	**tìtá'c**
				Ci-ta'c
		'good (SG)'		'good (PL)'
(106)	a.	**sòoyáapoo**	b.	**sìsóoyàapòo**
				Ci-sooyaapoo
		'non-Indian'		'non-Indians'

As with CV- reduplication, in Ci- reduplication, **ʔ** reduplicates as **h**. In the available examples, when the initial sequence is /**ʔi**/, it is reduplicated as **he-**.

(107)	a.	**'ískit**	b.	**hè'ískit**
				he-'iskit
		'trail		'trails'

There is no difference in meaning between the two different kinds of prefixal reduplication.

Prefixal reduplication can have interesting effects on word prosody. An initial stressed long vowel becomes short when its syllable is reduplicated:

(108)	a.	**háacwal**	b.	**hàhácwal**
		'boy'		'boys'
(109)	a.	**'áayat**	b.	**hà'áyat**
		'woman'		'women'

When the stem begins with a consonant cluster, the initial consonant is reduplicated, and short **i** is epenthesized following the first consonant:

(110)	a.	**tìm'áay'** **tm'áay** 'maiden'		b.	**tìtm'áay'** **ttm'áay'** 'maidens'

Nez Perce does not allow CC onsets, so epenthesis is required in both the singular and plural forms of 'maiden'.

The third type of reduplication involves the whole word. This kind of reduplication behaves like a subclass of compounding, which is discussed in §2.3.1.3. In many cases, Nez Perce uses whole word reduplication to create diminutives (111).

(111)	a.	**qíy'ex̂** 'sqawfish'		b.	**qìy'ax̂qíy'ax̂** 'little squawfish'

Diminutive reduplication is usually accompanied by transformation of recessive vowels to dominant vowels (see Rude 1985:20-1 and Rude 1994). Dominant vowels are associated with other diminutive morphology such as the suffix **-qan** 'young one' discussed below (§2.3.1.4.1.).

Many color terms involve whole word reduplication (112)-(113).

(112)	a.	**máqs** 'gall'		b.	**màqsmáqs** 'yellow'
(113)	a.	**cimux** 'to blacken'		b.	**cimúuxcimùx** 'black'

Finally, there are many words consisting of a clearly reduplicated stem, but for which there exists no corresponding unreduplicated base word.

(114)	a.	**k'ùyímk'uyìm** 'blue racer (snake)'	There exists no ***k'uyim**

b.	**qùyéesquyès** 'stellar's jay'	There exists no ***quyes**
c.	**qócqoc** 'meadowlark'	There exists no ***qoc**

Whole reduplication is analogous to compounding with respect to stress assignment, as described in §2.3.1.3.

In contrast to CV-/Ci- reduplication, ' is not reduplicted as **h** in whole word reduplication.

(115)	a.	**'ílp** 'pimple'	b.	**'ìlp'ílp** **'ilp-'ilp** 'red'
(116)	a.	**'àláwa** 'bison yearling'	b.	**'àlwa'álwa** **'alawa-'alawa** 'bison calf robe'

2.3.1.3. Compounding of nouns

Compounding plays an important role in the augmentation of the Nez Perce lexicon. Nez Perce compounds are head final (see Aoki 1970:49).

(117)	a.	**càwitáxsis** **cawíitx-siis** carrot-soup 'carrot soup'	b.	**yèhétk'òomàyn** **yehet-k'óomayn** neck-hurt 'neck ache'

Approximately three quarters of the corpus of 123 compounds that I have gathered have main stress just preceding the head of the compound (117). While most of the other

compounds have stress on the penultimate syllable of the head (118a), stress can fall on any syllable, including the initial syllable of the derived word (118b).

(118)	a.	**'ìpsùstáalam**	b.	**qáamsìtsìis**
		'ipsuus-taalaam		**qáamsit-siis**
		finger-peak		biscuit.root-soup
		'fingertip'		'biscuit root soup'

Whole word reduplication normally follows the prosodic patterns of compounds, with main stress going on the last syllable of the first stem.

(119)	a.	**kìyéwkiyèw**	b.	**cìmúuxcimùx**
		kiyew-kiyew		**cimuux-cimuux**
		'lacewing'		'black'

However, as with the non-reduplicated compounds, exceptions to this stress pattern exist.

(120) **qòlosqóolos**
qoolos-qoolos
'esophagus'

Further discussion of prosody in compounds will be reserved for Chapter 4.3.2.

2.3.1.4. Suffixation of nouns

The breadth of noun suffixation is considerably wider than that of prefixation and much more productive. A regular system of derivational suffixes exists in addition to comprehensive systems of case and bound post-positions.

2.3.1.4.1. Derivation

I provide a selection of Nez Perce derivational suffixes organized in terms of their productivity and their prosodic properties. Highly productive suffixes come before less productive suffixes. Accented suffixes are listed prior to ones that are unaccented. There is also a considerable inventory of nominalizing suffixes that create nouns from verb stems. Most of this morphology is discussed in the section on deverbalization (§2.3.4.7), since the phonological forms of nouns that result from the application of these suffixes depend on properties of the verb stem. Aoki (1970:58-65) also discusses noun derivation.

Some derivational suffixes, such as **-nîme**, which is used to form place names, and **-wéeku's**, which is used to coin a name for an item that is new to the culture "resembling" something that is already known, are highly productive.

(121)	a.	**'àysnîme**	b.	**mìt'ìpwéekù's**
		'ayc-nîme		**mit'ip-weeku's**
		wild.parsnip-place		elderberry-resembles
		'Mission Creek, ID'		'shotgun shell'[8]
		(Lit. 'Wild Parsnip Place')		

These suffixes affix to almost any semantically appropriate stem in the lexicon. Both are accented.

There are a few accented suffixes and noun formatives that have the additional property of being phonologically light. In Nez Perce, CV is a light syllable, and CVC is light in word final position. Word final CV and CVC are usually entirely stressless (see

[8] Elderberry fruit is composed of many, tightly clustered berries that are reminiscent of shotgun shell BB's.

discussion in §2.1.4 and Chapter 4.2.1.2). However, any syllable that has accent can have main stress even when word final, regardless of its weight. The most common accented light suffix is the intensifier **-nix** (for more about this suffix see discussion in §2.3.2 on the adjective).

Another accented light suffix is the deverbal **-e'ii**, which can be used to denote an object for performing the activity of the verb stem to which the suffix attaches (see §2.3.4.6 for additional discussion of deverbalizing morphology). This suffix has an accented long vowel, which shortens when it is word final. There are several examples of this suffix where the semantics and morphology are quite transparent. It will be glossed as a 'deverbal instrument' (DVB.INST).

(122)	a.	**tùkéepìlpt** **tukeepilp-t** carry.over.arm-NM 'carrying over arm'	b.	**tùkepìlpe'í** **tukéepilp-e'ii** carry.over.arm-DVB.INST 'vest', 'waistcoat'
(123)	a.	**wèeke'éykt** **wee-ke'eyk-t** fly-move-NM 'flying'	b.	**wèekè'yke'í** **wee-ke'eyk-e'ii** fly-move-DVB.INST 'airplane'

There are also examples where there is no identifiable stem from which the noun has been derived.

(124) **tèmèwne'í**
temewn-e'ii
?-DVB.INST
'saddle bag'

This suffix is also used with the question word **manáma** 'why', in which case it has the denotation 'in such a manner' (125).

(125)	a.	**mànáma**	b.	**mànma'í**
				manama-e'íi
				why-DVB.INST
		'why'		'in what manner'

Word final long vowels that have secondary stress do not shorten. Shortening of a final accented long vowel is not expected, but this pattern is well-established for Nez Perce.

Finally, there is an archaic noun formative -'é, found in several nouns, most of which are names for animals. This formative is no longer at all productive, but it is easily characterized phonologically. It is accented, it has a low vowel whose identity is determined by vowel harmony, and it glottalizes the last consonant of the noun. The vowel is realized as short when it is word final and long when is not word final.[9]

(126)	a.	**tùy'é**	b.	**tùy'éene**
		tuyée		**tuyée-ne**
		'grouse'		'grouse-OBJ'
(127)	a.	**k'òy'am'á**	b.	**k'òy'am'áana**
		k'oy'am'áa		**k'oy'am'áa-ne**
		'cougar'		'cougar-OBJ'

Stems which include this formative do not exist independently of it.

In contrast to light accented suffixes, there exist a number of derivational suffixes that have long vowels or diphthongs but lack accent. In some cases they receive main

---

[9] I have re-tested these data with several native speakers. Their responses consistently affirm these observations regarding the shortening of the word final accented vowel.

stress and in others they do not. Examples are given here for the suffixes **-núut** 'without', **-hii̇n** 'attributive ('ATRB'), and **-'áyn** 'benefactive' ('BEN'). All three of these suffixes are productive, and all three are underlyingly accented. When an accented suffix attaches to a word that is unaccented, then the accented suffix generally receives main stress. However, in many of cases, the derived word takes the pattern of compound stress, where primary stress is assigned to the last syllable of the stem, and the suffix is realized without main stress. This pattern is seen with the suffix **-núut** 'without'. In (128), the suffix **-núut** combines with the word **táalo** 'testes', and main stress is assigned to **-núut**. This also applies for the word **kuus** 'water' (129).

(128)	a.	**táalo**	b.	**tàlonóot** **taaloo-núut** testes-without
		'testes'		'castrated'
(129)	a.	**kúus**	b.	**kùusnúut** **kuus-nuut** water-without
		'water'		'desert'

With the word **'ìwéepne** 'wife', the derived word has the form of compound stress. Stress is placed on the last syllable of **'ìwéepne**, and the long vowel of **-núut** is shortened.

(130)	a.	**'ìwéepne**	b.	**'ìwèpnéenut** **'iwéepne-nuut** wife-without
		'wife'		'bachelor

There is a tendency for accented stems to have the compound stress pattern, but there is essentially no way to predict which stems will allow main stress to be assigned to the accented suffix and which will not. Compound stress is presented in Chapter 4.5.2.

The same pattern holds for the suffix **-hiin**, which receives additional discussion under adjective derivation (§2.3.2) and deverbalizing morphology (§2.3.4.6).

(131)	a.	**'áala**	b.	**'àlahíin**
				'aalaa-híin
				fire-ATRB
		'fire'		'steam engine'
(132)	a.	**háama**	b.	**háamìin**
				háama-híin
				man-ATRB
		'man'		'married woman'

The loss of the initial **h** following a consonant in (132b) is a regular sound change. The attributive is classed as a case marker by Rude (1985:101-3). However, although it is found in combination with a number of nouns, it does not appear to be productively useable as a case marker at this point in the language's development. I believe it is better classified as a derivational suffix.

The suffix **-'ayn** 'BEN' can have both inflectional and derivational functions. Its inflectional use is as a benefactive case marker (133)-(134). Derivationally, it creates nouns that are usually instruments (135)-(136).

(133)	a.	**táamsas**	b.	**tàmsàsʔáyn**
				taamsaas-'áyn
		'wild rose'		'for a wild rose'

(134)	a.	**háama**	b.	**háama'àyn** **háama-'áyn**
		'man'		'for the man'
(135)	a.	**tù'úynu**	b.	**tò'ynó'àyn** **tu'unuu-'áyn**
		'tail'		'crupper'[10]
(136)	a.	**cìq'áamqal**	b.	**cìq'áamqàlʔàyn** **ciq'áamqal-'áyn**
		'dog'		'dog sled'

Although this suffix lacks a long vowel, it is a heavy syllable by virtue of its diphthong followed by a consonant (see discussion above §2.1.4). Like the examples of suffixes with long vowels just discussed, **-'áyn** may or may not receive main stress. In Nez Perce compounds, although it is possible to predict where stress is likely to be assigned, stress assignment is never entirely determinable. A full account of compound stress, including its inherent unpredictability, is given in Chapter 4.3.2.

The suffix **-'eew** primarily derives adjectives from verbs, but in several cases it derives nouns.[11]

(137)	a.	**híp'ew** **hip-'eew** eat-ADJ2 'edible mushroom' (Pleurotus ostreatus)	b.	**tàmtáay'aw** **tamtáay-'eew** tell.news-ADJ2 'gossiper'

---

[10] The crupper is the portion of a horse's harness that fits around the tail.
[11] This suffix is glossed 'ADJ2' since there is a more important suffix for deriving adjectives from verbs. For more discussion of **-'eew**, see adjective derivation in §2.3.2.

Two unproductive derivational suffixes that never receive stress are **-qan** and **-pel'uu** (138)-(139).

(138)	a.	**cìq'áamqàlqan** **ciq'áamqal-qan** dog-young 'puppy'	b.	**'ìcayáayàqan** **'iceyéeye-qan** coyote-young 'coyote pup'
(139)	a.	**páapspal'òo** **paaps-pel'uu** red.fir-people 'Red Fir People'/'Colville tribe'	b.	**cúupn'ìtpel'ùu** **cúupn'it-pe'luu** emerging-people 'Nez Perce people'

The suffix **-qan** forms the name for the offspring of some kinds of animals. For other animals there is either an underived word for the young (e.g., **tátx** 'spotted fawn', **mú'pc** 'year old fawn', **qè'éyix** 'elk calf') or the word **miyá'c** 'offspring, child' is used, with the kind of animal in the genitive (e.g., **pìcpícnim miyá'c** 'cat's offspring' or 'kitten').

At the lowest end of morphological productivity, there is an unaccented, archaic noun formative **nuu** (**noo** in a word with dominant vowels). It appears in quite a few words, many the names for birds or other animals. However, other objects are included, so no semantic definition applies at this point in the evolution of the language. This formative cannot be segmented from the stem to reveal a productive noun. There is no noun **wáswas** to go with **nuu** and make **waswásno** in (140).

(140)	a.	**wàswásno** **waswasnoo** 'chicken'	b.	**wàswàsnóona** **waswasnoo-ne** chicken-OBJ 'chicken (OBJ)'

(141)	a.	**tàamámno**	b.	**tàamàmnóonm**
		taamamnoo		**taamamnoo-nm**
				hummingbird-ERG
		'hummingbird'		'hummingbird (ERG)'

This formative has well defined phonological properties. In the uninflected forms of these nouns, **nuu** has a short vowel, but when the stem is affixed and stress moves to **nuu** the vowel is realized as long. It is unlikely that by chance all these words ended in **nuu/noo**.

2.3.1.4.2. Noun inflection

I place these suffixes into three categories – case markers, qualifying suffixes, and bound postpositions. It is not always entirely straightforward which category a suffix belongs to, and alternative arguments could be presented for reclassifying one or another of them. The alternative would be to have over twenty different case markers. For additional information on the case suffixes, including their allomorphic variation, one should consult Aoki (1970:72-7) and Rude (1985:82-119), who makes inflection and syntax the focus of his work. Aoki (1994) lists each morpheme alphabetically and provides additional examples.

The case markers are mostly phonologically light suffixes – C, CC, CV, or CVC (which is light word finally), with the exception of **-'ayn** 'benefactive' and **-kin'ik**

'ablative'. None contains a long vowel, and only the benefactive ever receives main stress.

(85)	a.	nominative	(NOM)	(unmarked)
	b.	ergative	(ERG)	**-m/-nm/-nim/-um**
	c.	objective	(OBJ)	**-ne**
	d.	instrumental	(INST)	**-ki**
	e.	benefactive	(BEN)	**-'ayn**
	f.	allative	(ALL)	**-k/-pk/-kek**
	g.	locative	(LOC)	**-pe**
	h.	ablative	(ABL)	**-kin'ik/-pkin'ik/-me**
	i.	vocative	(VOC)	**-e/-e'**

The case marker is almost always the last suffix in a word with two exceptions. Case markers may be followed by the emphasis marker, which appears to be a clitic (see §2.4.1.1), and by the suffix **-k'*e*/-k'ey'** 'additionally', discussed later in this section.

Case suffixes indicate traditionally recognized grammatical relations, and have a primarily syntactic function. In addition, Rude (1985, 1986) argues that nominals with cases (85a-h) interact with verb morphology through antipassive, possessor raising, and raising to object of obliques. (142) provides examples of the full set of case markers, except for the vocatives, with the noun **séhey** 'worm'.

(142)	a.	**séhey**		'worm (NOM)'
	b.	**sèhéynim**	**-nim**	'worm (ERG)'
	c.	**sèhéyne**	**-ne**	'worm (OBJ)'
	d.	**sèhéyki**	**-ki**	'with a worm (INST)'
	e.	**sèhéy'àyn**	**-'ayn**	'for a worm (BEN)'
	f.	**sèhéyx**	**-k**	'towards a worm (ALL)'
	g.	**sèhéype**	**-pe**	'on/at/in a worm (LOC)'

h. **sèhéykìn'ix -kin'ik** 'from a worm (ABL)'

The senior vocative (SV) **-e'** (143a) and junior vocative (JV) **-e** (143b) only occur with kinship terms.

(143) a. **tóotà'**
toot-e'
father-SV 'Dad!'

b. **'íicè'**
'íic-e'
mother-SV 'Mom!'

Nez Perce has reciprocal terms for the grandparent-grandchild relationships,[12] so the two different vocatives minimally determine which referent a reciprocal kinship term has.

(144) a. **qàláca**
qalac-e
paternal.male.grand.relation-JV 'Grandson!'/'Granddaughter!'

b. **qàláca'**
qalac-e'
paternal.male.grand.relation-SV 'Grandpa!'

The case markers **-ne**, **-ki**, **-'ayn**, **-pe** and the vocatives undergo practically no allomorphic variation other than that caused by vowel harmony. The ergative, allative, and ablative on the other hand, exhibit considerable variation.

When the ergative follows a vowel, the form is **-nm** (145), following most consonant final nouns the form is **-nim** (146).

---

[12] An example of a reciprocal relationship in English is *cousin*, which is used by both members of the relationship. For more discussion of Plateau Indian kinship terminology see Hunn 1990.

(145)	a.	**sìlúunm**	b.	**hèsúunm**
		siluu-nm		**heesuu-nm**
		eye-ERG		eel-ERG
		'eye (ERG)'		'eel (ERG)'
(146)	a.	**qètqéetnim**	b.	**sìk'éemnim**
		qeetqeet-nm		**sik'eem-nm**
		duck-ERG		horse-ERG
		'duck (ERG)'		'horse (ERG)'

I assume that the underlying form is simply **-nm**, and the completely predictable vowel **i** is epenthesized when a series of word final <u>**Cnm**</u> is created by affixation.

Nez Perce commonly allows a single syllabic consonant at the end of a word. Many stems end in CC, but very few end in CCC. When a word ends in a syllabic consonant, the syllabic allows stress to be assigned to the last vowel in the word without violating the pattern of penultimate stress. The word **sìlúunm** 'eye (ERG)' is syllabified as **sìlúun.m**, with a final syllabic **m**, and thus the penultimate stress pattern is preserved. In the cases where a word final cluster longer than CC occurs, the cluster never contains a sonorant unless it is the first consonant in the cluster. The cluster **nm** is acceptable word finally but not <u>**Cnm**</u>. Another piece of evidence that the vowel in **-nim** is epenthesized and not syncopated to derive **-nm**, is that Nez Perce does not allow syncopation of final short vowels. If syncopation took place in this morpheme, it would be the only such case of syncope in a word final syllable. There is a syncope process, but it only affects medial syllables (see Chapter 4.4.2).

In a few cases, the noun to which the ergative is affixed determines the form of the ergative. With a small set of nouns, the ergative is **-um**, **-im**, **-em** (147), or simply **-m** (148).

(147)	a.	**wàw'áamam** **waaw'aam-em** head.of.stream-ERG 'head of stream (ERG)'	b.	**'áayàtom** **'áayat-um** woman-ERG 'woman (ERG)'
(148)	a.	**nìmíipùum** **nimíipuu-m** Nez.Perce-ERG 'Nez Perce (ERG)'	b.	**cìq'áamqàlm** **ciq'áamqal-m** dog-ERG 'dog (ERG)'

These nouns most often have human referents, but not always (147a), (148b). Some of this variation is being leveled among today's speakers, with the **-nm** replacing the irregular allomorphs.

The allative has three forms **-k**, **-pk**, and **-kek**. In all three cases, word final **k** spirantizes to **x** following the general pattern, with the result that these suffixes are realized as **-x**, **-px**, and **-kex** respectively (frication is discussed in Chapter 3.3). The allative is usually **-x** after a consonant and **-px** after **x**.

(149)	a.	**cóqoy** 'smokehole (of tipi)'	b.	**còqóyx** **coqoy-x** smokehole-ALL 'toward the smokehole'

(150)	a.	**qémyex**	b.	**qémyèxpx** **qémyex-px** Kamiah-ALL
		'Kamiah, Idaho'		'to Kamiah'

As I explained with respect to the ergative above, a word final CC is syllabified as C.C#, allowing main stress to be assigned to the final vowel without violating the prohibition against stress on the ultima (for more on words with this pattern of stress, see Chapter 4.4.1).

The form **-pk** is also used following **s**, **c**, **m** and vowels, depending on the speaker.

(151)	a.	**sílu**	b.	**sìlúupx** **siluu-px** eye-ALL
		'eye'		'toward the eye'

The variant form **-kex** is found with a few lexical items.

(152)	a.	**'ìníit**	b.	**'ìníitkex** **'iníit-kex** house-ALL
		'house'		'toward the house'
(153)	a.	**'éemti**	b.	**'éemtìkex** **'éemti-kex** outside-ALL
		'outside'		'towards the outside'

Allomorphic variation shows that the form that the ablative case takes for most nouns is built on the allative **-k** and **-pk**. The ablative is **-kin'ik** after consonants and **-pkin'ik** after vowels and **x**.

(154) a. **yèhétkìn'ix**
yehet-kin'ik
neck-ABL
'from the neck'

b. **pìk'úunkìn'ix**
piik'uun-kin'ik
river-ABL
'from the river'

c. **'átamòskìn'ix**
'átamos-kin'ik
automobile-ABL
'from the automobile'

(155) a. **'àmáapkìn'ix**
'amaa-pkin'ix
island-ABL
'from the island'

b. **'èysnimèepkìn'ix**
'eysnimee-pkin'ik
Mission.Creek-ABL
'from Mission Creek, Idaho'

c. **yèqéepkìn'ix**
yeqee-pkin'ik
Kendrick-ABL
'from Kendrick, Idaho'

For some nouns, the suppletive form **-me** occurs, which usually combines with the locative **-pe**. The example in (156b) is an irregularly accented and glottalized form found in a very few instances.[13]

(156) a. **wàqíima**
waqii-me
long.ago-ABL
'from long ago'

b. **mèx̂sem'é**
meex̂seem-m'é
mountain-ABL
'from the mountains'

(157) a. **mìyàpkáawìtpàma**
miyapkáawit-pe-me
infant-LOC-ABL
'from infanthood'

b. **háatyapàma**
háatya-pe-me
wind-LOC-ABL
'from wind'

---

[13] It appears to contain the noun formative -'e discussed above in 2.3.1.4.1.

The case suffix **-me** appears to be related to the human plural suffix **-me**, discussed in the next paragraph.

Qualifying suffixes include **-me** 'human plural', **-k'e/-k'ey'** 'also', **-cim** 'only', and **-híinex** 'even'. Nouns inflected with these suffixes can usually take a case suffix in addition.

Nez Perce derives the plurals of many nouns with human referents with the suffix **-me**. The nouns which form a plural with **-me** do not form plurals with initial reduplication (§2.3.1.2.).

(158)	a.	**'ìwéepne**	b.	**'ìwéepnème**
				'wéepne-me
				wife-PL
		'wife'		'wives'

This suffix can also be uesd with certain nominal adjectives to refer to humans.

(159)	a.	**yu'c**	b.	**yú'cme**
				yu'c-me
				pitiful-PL
		'a pitiful one'		'pitiful ones'
	c.	**yú'cmènm**		
		yu'c-me-nm		
		pitiful-PL-ERG		
		'pitiful ones (ERG)'		

Case suffixes follow this plural (159c).

The suffixes **-k'e** and **-k'ey'** mean 'additionally' or 'also'. Only pronouns take the suffix **-k'e**, which is one of the only suffixes that can follow a case marker (160b). The

suffix **-k'ey'** combines almost exclusively with **-cim** 'only', discussed in the next paragraph (161).

(160)	a.	**'íink'e**	b.	**'ìpnímk'e**
		'iin-k'e		**'ipí-nim-k'e**
		1-also		3-ERG-also
		'me too'		'it's also'

Neither suffix is accented. They are used just with a certain narrow set of morphemes.

The suffix **-cim** means 'only'. It is unaccented and causes stress shift.

(161)	a.	**héqs**	b.	**hèqésne**
				heqs-ne
				pus-OBJ
		'pus'		'pus (OBJ)'
	c.	**hèqéscim**		
		heqs-cim		
		pus-only		
		'only pus'		

(162)	a.	**pícpic**	b.	**pìcpícne**
				picpic-ne
				cat-OBJ
		'cat'		'cat (OBJ)'
	c.	**pìcpíccim**		
		picpic-cim		
		cat-only		
		'only a cat'		

This suffix **-cim** may be used in conjunction with **-k'ey'**.

(163) a. **míiw'ac**

'a little while'

b. **míiw'àscim**
míiw'as-cim
little.while-only
'only a little while'

c. **míiw'àscìmk'ay'**
miiw'as-cim-k'ey'
little.while-only-also
'only a little while more'

The suffix **-híinex** 'even' (164) is accented and receives main stress in all of the examples that I have found. This suffix selects a plural form of the noun if that noun has one.

(164) a. **wàswàsnohíinax**
waswasnoo-híinex
chicken-even
'even the chickens'

b. **hà'àtwàyhíinax**
ha-'áatway-híinex
RED-old.woman-even
'even the old women'

Nez Perce has a set of bound postpositions, all of which indicate locations or directions. The suffix **-kin'ikaay** 'in the area of' never receives main stress in spite of the fact that it is trisyllabic and has a long vowel. It is clearly based on the ablative **-kin'ik**, discussed above, which in turn is based on the allative. All three of these suffixes, the allative, ablative, and the locative 'area of' begin with **-k** following most consonants. Following vowels and consonants like **m** they begin with **-pk**, with the possible addition of an epenthetic vowel (166b).

(165)	a.	**wèx̂wéqt**	b.	**wèx̂wéqtkìn'ikàay** **wex̂wéqt-kin'ikaay** frog-area
		'frog '		'in the area of frogs'
(166)	a.	**sèx̂ním'**	b.	**sèx̂ním'ipkìn'ikàayx** **sex̂nim'-pkin'ikaay-x** autumn-area-ALL
		'autumn'		'late in the autumn'

Although this suffix has a dominant vowel, it does not cause regressive harmonization of the recessive vowels of the noun stems. Exceptions like this are discussed in Chapter 3.1.

Case can be assigned to a noun that has one of these locatives, as is shown in (166b) above. This follows from the fact that the locative **-kin'ikaay** can also act derivationally to create new lexical entries.

(167)	a.	**'áaqam**	b.	**'àqáamkìn'ikàay** **'aaqaam-kin'ikaay** above-area
		'above'		'area above', 'heaven'
	c.	**'àqámkìn'ikàaykìn'ix** **'aaqaamkin'ikaay-kin'ik** heaven-ABL 'from heaven'		

Once the lexical item 'heaven' has been created (167b), it can undergo inflectional suffixation to create the further derived form 'from heaven'. The following example was given in a text about fry bread making.

(168)	a.	**k'úsmìt'es**	b.	**k'úsmit'èskìn'ikàay** **k'úsmit'es-kin'ikaay** frying.pan-side
		'frying pan'		'the frying pan side'

c. **Kè káa tàsqíin 'ipéex̂ k'úsmit'èskìn'ikàay hì'étìse**
hii-'eti-see
REL and grease bread frying.pan.side 3-get.done-INC

kàwó' hìteméeckilìikse.
hii-temeeckiliik-see
then 3-turn-INC

'When the fry bread is done on the frying pan side, then she turns it over.'

Other locative suffixes include **-pípam** 'among' (169)-(170), and the unaccented **-laykin** 'near' and **-paay** 'nearby'. Additional case markers are not added following these suffixes. The suffix **-pípam** is accented and has main stress in every example.

(169) a. **sáaslàqs** 'moose'

b. **sàslàqspípam**
sáaslaqs-pípam
moose-among
'among moose'

(170) a. **wèx̂wéqt** 'frog'

b. **wèx̂wèqtpípam**
wex̂weqt-pípam
'among frogs'

The suffix **-laykin** 'near' does not attract main stress:

(171) a. **sík'em** 'horse'

b. **sik'áamlàykin**
sik'eem-laykin
horse-near
'near a horse'

(172) a. **láaqa** 'pine'

b. **láaqalàykin**
láaqa-laykin
pine-near
'near a pine'

The bound postposition **-paay** 'near' is never stressed:

(173)	a.	**núkt**	b.	**nùkútna**	c.	**nùkútpàay**
				nukt-ne		**nukt-paay**
				meat-OBJ		meat-OBJ
		'meat'		'meat (OBJ)'		'near meat'
(174)	a.	**x̂áx̂àac**	b.	**x̂áx̂àasna**	c.	**x̂áx̂àacpàay**
				x̂áx̂aac-ne		**x̂áx̂aac-paay**
				grizzly-OBJ		grizzly-near
		'grizzly'		'grizzly (OBJ)'		'near a grizzly'

Stress assignment to this heavy suffix and the others above can be handled under the same analysis that is used for compound stress given in Chapter 4.3.2. The discussion in that section will address stress assignment and heavy affixes alongside the discussion of stress assignment with compounded noun stems.

A set of locative adverbials such as **qàttát** 'near' and **'àlláay** 'below' supplement these locative suffixes. These adverbs are discussed in §2.3.3.

2.3.2. Morphology of the adjective

Some of the morphology of the adjective is the same as that of the noun. Adjectives undergo plural reduplication, and they also receive case marking in concord with the nouns that they modify, but for the most part, adjectives do not take the derivational affixes that nouns do.

In a number of American Indian languages, as well as many other languages of the world, no separate category of adjectives exists. In those languages, words expressing

adjectival meanings are all verbs, taking inflection and tense like other members of that category. In Nez Perce, there are a number of verbs that have adjectival meanings, as will be shown below (§2.4.2.2), but there is also a separate category of adjectives, which is truly nonverbal in nature.

There are three evidences of the nonverbal nature of the Nez Perce adjectives. First, these adjectives are not inflected for agreement, tense, or aspect. Second, predicate adjectives must appear with a copula. In this way, they are identical to predicate nouns.

(175) a. **Kíi háama híiwes hìméeq'is.**
hii-wee-s
this man 3-be-INC big
'This man is big.'

b. **Kíi háama híiwes sèpehitèmenew'éet.**
hii-wee-s
this man 3-be-INC teacher
'This man is a teacher.'

In examples like these, the copula takes the agreement and the tense-aspect morphology.

The third indication that adjectives are not verbs is that attributive adjectives agree in case with the nouns they modify.

(176) **Háamànm kùckúsnim páakcàqa wèwúkyène hìmeq'íisne.**
Háama-nim kuckuc-nim pee-hek-cee-qa wewúkye-ne himeeq'iis-ne
man-ERG small- ERG 3ON3-see-INC-REC bull.elk-OBJ big-OBJ
'The little man saw the big bull elk.'

Adjectives may either precede or follow the noun. In the noun phrase, only the order of numbers is restricted. Numbers must precede the head noun (syntax of the noun phrase is further discussed in §2.4.1.1).

The three examples in (177) are monomorphemic adjectives.

(177) a. **kùhét** 'tall, long' b. **néx̂sep** 'foreign' c. **'ii̇qin** 'generous'

Although there are a number of other monomorphemic examples, the majority of adjectives are morphologically complex.

The suffix **-'iis/-'iic** ('ADJ') combines with verb stems and derives the largest set of adjectives. A second suffix, which is used less often for deriving adjectives from verbs, is **-'eew** ('ADJ2'). This suffix can also be used to derive nouns (§2.3.1.4.1). I have no examples where it is attached to a bound stem.

Underlyingly, both adjectival suffixes have a long vowel. The long vowels are realized as such when main stress is assigned to the suffix.

(178) a. **sàyáq'ic**
sayaq-'iic
value-ADJ
'beautiful (NOM)'[14]

b. **sàyaq'i̇icki**
sayaq-'iic-ki
value-ADJ-INST
'beautiful (INST)'

(179) a. **hìl'áay'aw**
hil'áay-'eew
be.lazy-ADJ2
'lazy (NOM)'

b. **hìl'ay'áawna**
hil'áay-'eew-ne
be.lazy-ADJ2-OBJ
'lazy (OBJ)'

[14] An explanation for the unexpected glosses in this example is provided later in this same section under the discussion of the semantic effects of **-'iis/-'iic**.

When an unaccented adjective is case marked, stress shifts to the suffix, following the general pattern of penultimate stress discussed above (§2.1.4.).

Whether the suffix **-'iis/-'iic** includes **s** or **c**, is an idiosyncratic property of the stem. Verbs fall into either an S-class or C-class as illustrated in (180).

(180)	a.	**hìpíse**	b.	**hèkíce**
		hip-see		**hek-cee**
		eat-INC		see-INC
		'I eat'		'I see'

The class a verb belongs to is generally unpredictable (verb classes are discussed in §2.3.4.1.1), and whether an adjective derived from a verb will contain an **s** or a **c**, is even independent of the verb class.

(181)	a.	**sìséexpìtce**	b.	**sìsèxpíit'ic**
		siseexpiit-cee		**siseexpiit-'iic**
		be.horrified-INC		be.horrified-ADJ
		'I am horrified'		'horrifying'
(182)	a.	**ciiw'àtca**	b.	**cìw'áat'is**
		ciiw'aat-cee		**ciiw'aat-'iis**
		disagree-INC		disagree-ADJ
		'I disagree'		'not right'

The examples in (181) and (182) are both C-verbs, but the adjectives derived from them end in both **s** and **c**.

The suffix **-'iis/-'iic** is realized as **-'s/-'c** following **y**.

(183) **pèeléy'c**
peeley-'iic
be.lost-ADJ 'hidden'

This allomorph is also found following other vowels (184) and (185).

(184) **tá'c**
ta-'iic
good-ADJ 'good' (there is no verb root **ta**)

(185) **yú'c**
yu-'iic
poor-ADJ 'poor, pitiful' (there is no verb root **yu**)

The suffix **-'eew** does not undergo this change following a vowel (186).

(186) **hètè'ew**
heete-'eew
love-ADJ2 'lovely'

The two suffixes **-'iis/-iic** and **-'eew** can have different semantic effects when combined with a verb stem. In (187) with the stem **cikáaw** 'fear', the two suffixes are directly contrasted.

(187) a.	**cìkáawca**	b.	**cìkáaw'is**	c.	**cìkáaw'aw**
	cikáaw-cee		**cikáaw-'iis**		**cikáaw-'eew**
	fear-INC		fear-ADJ		fear-ADJ2
	'I fear'		'fearsome'		'fearful'

Nez Perce verb roots often have very general meanings. A verb root like **cikáaw** has the basic meaning 'to feel fear'. Adjectives formed with **-'iis/-'iic** tend to imply an agentive role on the part of the referent (188a). Adjectives formed with **-'eew** tend to imply that the referent is the theme of the verb (188b).

(188) a. **'àckáawca** **cìq'áamqàlna** **cìkaw'íisna**
'a-ckáaw-cee **ciq'áamqal-ne** **cikaaw'iis-ne**
3OB-fear-INC dog-OBJ fearsome-OBJ
'I am afraid of the fearsome dog.'

b. **Hìckáawca** **cìq'áamqàlnim** **cìkaw'áawnim**
hii-ckáaw-cee **ciq'áamqal-nm** **cikaaw'aaw-nm**
3-fear-INC dog-ERG fearsome-ERG
'The fearful dog is afraid of me.'

I know of no other examples where there are both kinds of derived adjectives from a single verb stem, but the examples in (189) and (190) illustrate the generalization that adjectives formed with **-'iis/-'iic** can imply an agentive or perhaps unergative thematic role.

(189) a. **sìséexpìtce**
siseexpiit-cee
be.horrified- INC
'I am horrified'

b. **sìsèxpíit'ic**
siseexpiit-'iic
be.horrified-ADJ
'horrifying'

(190) a. **sàyqíca**
sayaq-cee
value-INC
'I like, value'

b. **sàyáq'ic**
sayaq-'iic
value-ADJ
'beautiful'

That which is **sisexpíit'ic** inspires horror. That which is **sayáq'ic** inspires one to value it because it is beautiful. For some adjectives, this generalization is either not useful or simply wrong.

(191) a. **'ìcwéeyse**
'icwéey-see
be.cold- INC
'I am cold'

b. **'ìcwéey'c**
'icwéey-'iic
be.cold-ADJ
'cold'

(192) a. **qà'ánsa**
qa'an-see
respect- INC
'I respect'

b. **qà'án'is**
qa'an-'iis
respect-ADJ
'respectable'

We might argue that that which is **qa'án'is** inspires respect, but to do so begins to stretch the assertion on semantics beyond the point of usefulness. Moreover, the adjective **'icwéey'c** cold simply describes something that is cold and likewise **ciw'áat'is** something that is in error. This suffix is also combines with bound roots that do not occur independently.

(193) **hìméeq'is**
himeeq-'iis
big-ADJ 'big' There is no verb **himeeq**

(194) **'éelèw'ic**
'éelew-'iic
easy-ADJ 'easy' There is no verb **'éelew**

The observation regarding the semantic nature of the adjective forming suffix **-'eew** also expresses only a tendency. The example in (195) supports the generalization.

(195) a. **héetewìse**
heetewi-see
love-INC
'I love'

b. **heté'ew**
hete-'eew
love-ADJ2
'lovely'

In many cases, however, this suffix's semantics are indistinguishable from those of **-'iis/-'iic**.

(196)	a.	**'ìkúuytìmse** **'kúuy-tim-see** true-speak-INC 'I tell the truth'	b.	**'ìkúuytìm'ew** **'kúuy-tim-'eew** true-speak-ADJ2 'honest'
(197)	a.	**hènímce** **henim-cee** not.go-INC 'I'm reluctant to go'	b.	**hèním'ew** **henim-'eew** not.go-ADJ2 'lazy, unwilling'
(198)	a.	**sìy'áawca** **siy'áaw-cee** be.scared-INC 'I am scared'	b.	**sìy'áaw'aw** **siy'áaw-'eew** be.scared-ADJ2 'scared'

Perhaps at an earlier stage in the development of Nez Perce, the semantic effects of the two suffixes were more well-defined. If there were more minimal semantic pairs like **cikaaw'is** and **cikáaw'aw** perhaps the semantics of the two adjective forming suffixes would have remained separate.

The attributive suffix **-hiin** (discussed in §2.3.1.4.1), derives adjectives as well as nouns from already existing noun stems.

(199)	a.	**tàlohíin** **taaloo-híin** testes-ATRB 'bull' or 'stallion'	b.	**c'àynìin** **c'aayn-híin** excrement-ATRB 'soiled'

Another important means of adjective derivation is reduplication. The basic stem may be one that only appears in the reduplicated form as we see in (200),(201).

(200) **kúckuc** (There is no independent stem **kuc**)
'little'

(201) **qèesqées** (There is no independent stem **qees**)
'spotted'

Alternatively, a verb stem (202) or an adverb (203) may be reduplicated to form an adjective with no additional affixation.

(202) a. **hìtuk'ukíce**
hii-tuk'uki-cee
3-be.straight-INC
'It is right'

b. **tùk'uxtúk'ux**
'straight'

(203) a. **pat'óx hikúuse**
hii-kuu-see
smoothly 3-do-INC
'It is becoming smooth'

b. **pàt'xpát'x**
'smooth'

In general, reduplicated adjectives refer to shapes, sizes, and colors.

The intensifier **-nix** ('very') has the effect of creating intensive forms of adjectives (204), and in some cases adjectives from nouns (205).

(204) a. **sàyáq'ic**
sayaq-'iic
value -ADJ
'beautiful'

b. **sàyq'ìsníx**
sayaq'ic-níx
beautiful-ADJ-very
'very beautiful'

(205) a. **háama**
'man'

b. **hàmaníx**
haama-níx
man-very
'very manly', 'brave'

This suffix is accented and always receives main stress.

Pluralization through CV-/Ci- reduplication takes place with both non-derived and derived adjectives.

(206)	a.	**kùhét** 'long'	b.	**kìkúhet** **Ci-kuhet** 'long (PL)'
(207)	a.	**cìkáaw'is** 'fearsome'	b.	**cìckáw'is** **Ci-cikaaw'is** 'fearsome (PL)'
(208)	a.	**hète'ew** 'lovely'	b.	**hèhéte'ew** **CV-hete'ew** 'lovely (PL)'

Reduplicated pluralization of an adjective can apply either to both stems (the reduplicant and the reduplicand) (209a) or just to the entire reduplicated stem (209b).

(209)	a.	**kùkúckuc** **CV-kuckuc** 'little (PL)'	b.	**lìlkóylìlkòy** **Ci-lokoy-Ci-lokoy** 'slender'

This same pattern was seen with the nouns above (§2.3.1.2).

2.3.3. Morphology of the adverb

Adverbs are a minor part of the Nez Perce lexicon. A very productive system of derivational prefixes supplies much of the semantic input that might otherwise have been provided by independent adverbs. Adverbs have three significant morphological patterns. First, there is reduplication.

(210) **làmlamát**
'quickly'

Second, there is affixation with the instrumental **-ki**.

(211) a. **tìmmìyun'éey'**
'senseless'

b. **tìmmìyun'éey'ki**
'senselessly'

(212) **'ì'yéwki**
'slowly'

(there is no stem **'i'yew**)

Affixation with **-ki** makes the difference between the adjective and the adverb in (211), but the adverb 'slowly' has this suffix affixed to a bound root, which does not otherwise occur.

The third pattern is gemination of the consonant preceding the vowel with primary stress. The (a) examples in (213), (214). are adjectives. What I call "emphatic gemination" derives the adverbs in the (b) examples.

(213) a. **hìp'úux**
'soft'

b. **hìpp'úx**
'softly'

(214) a. **x̂àláp**
'open'

b. **x̂àlláp**
'quickly open'

Both of the unemphatic stems are accented on the ultima. In emphatic gemination, the initial syllable receives an extra strong secondary stress, and the following consonant is doubled.

Aoki (1994) lists a class of particles with adverbial meanings. Rude (1985:59-60) calls them punctual verbs. These words must be realized with an inflected verb. Usually the verb is **kuu** 'do'. Many of the particles are historically related to verb stems but, it is

not in general the case that bare verbs can function adverbially. These particles are part of a restricted class. Two examples are provided with 'do' and one with **wíhne** 'leave'.

(215) **Yóx̂ háamanm wéeyux̂ k'ùpíp hìkúuye.**
háama-nm wéeyux̂ k'upíp hii-kuu-ye
that man-ERG leg break 3-do-PTV
'That man broke his leg.'

(216) a. **Kíi 'áayat lìk'íp péekùse.**
pee-kuu-see
this woman quick/touch 3ON3-do-INC
This woman briefly touches it.'

b. **Kíi 'áayat lìk'íp hìwíhnàqa.**
hii-wíhne-qa.
this woman quickly 3-leave-REC
'This woman left quickly.'

In (215), **k'upíp** plus the verb 'do' indicates a point action event of breaking. In (216a), **lik'íp** is combined with transitive 'do' (transitivity is indicated by **pee-** '3ON3' see §2.3.4.2.3.1). The resultant meaning is 'touch quickly'. (216b) has an intransitive verb combined with **lik'íp**, and the resultant meaning is 'leave quickly'. I believe these particles are essentially adverbs based upon their semantics, their lack of inflection, and the fact that they are a restricted class.

2.3.4. Morphology of the verb

The potential complexity of the verb's morphology is roughly represented in (217). However, no word includes quite all of these morphemes. For example, subject plural agreement occurs in position b. or l. but not both, for example.

(217) The verbal complex:

a. b. c. d. e. f. g. h. i. j. k. l. m. n.
[SUB/OBJ[SUBJ# [OBJ# [DIST [CAUS [ADV **[root]** DIR] BEN] only] ASP] SUBJ#] ORT] TNS]

a. Subject/Object person agreement (including reflexive and reciprocal)
b. Subject number agreement (in the perfect, perfective, and irrealis aspects)
c. Object number agreement
d. Distributive
e. Causative
f. Derivational prefixes (zero to several may co-occur), indicating manner, place, or instrument
g. Verb root
h. Directional suffixes
i. Benefactive suffix
j. The suffix **-ciimi** 'only'
k. Aspect
l. Subject number agreement (in the incompletive, habitual, and imperative aspects)
m. Orientation (cislocative or translocative)
n. Tense

I assume that each combination of [derivational prefix + root] exists as a separate lexical item. Roots combine with zero to several derivational prefixes creating the basic meaning of the verb stem (in boldface above). A complex verb's meaning is unpredictable the same way that the meaning of an English compound noun is (e.g., "basketball press" potentially could mean either a defense used in playing the game of basketball or a machine for flattening basketballs). In addition, new verbs created by derivational prefixation in Nez Perce may have unpredictable prosodic and morphological

properties. I discuss the unpredictability of meanings below (§2.3.4.3), and the unpredictability of prosody in Chapter 4.3.2 and 5.3.3.

For a verb to occur in Nez Perce syntax, it must have at minimum an aspect suffix. At maximum, it can have a combination of nearly all of the kinds of morphemes listed in (217). To explicate the Nez Perce verb, I will begin with the morphologically simplest forms. These will be roots which are unmodified by derivational affixes and which bear the minimum necessary inflectional morphology. Aspect, number, and tense, positions (k-n) in (217), together form a suffixal complex. Subject person agreement is marked with a prefix and is discussed separately under prefixation.

Nez Perce has some systematic distinctions between human and non-human nouns. For example, it is almost exclusively human nouns that have plurals and there are separate human and non-human classifier suffixes for quantifiers and numbers. However, for verb inflection there is no distinction between human/non-human or animate/inanimate.

2.3.4.1. The inflectional suffix complex

To function independently in syntax, almost all verb stems must have at minimum an aspect suffix (a complete inventory of aspects is provided in (220) below in §2.3.4.1.1.). There are fewer than five exceptional verbs that can appear as bare stems. The regular Nez Perce verb may carry only an aspect suffix, as simple as a single

consonant or vowel, or the verb, in addition to aspect, may mark number, orientation (cislocative or translocative), and tense. Aoki (1970:105-25) and Rude (1985:30-7, 47-62) can be consulted for discussions of aspect and tense.

While the forms of the constituents may change, their basic order almost never does.

(218) (Verb Stem)-[Aspect] + [Subject number] + [Orientation] + [Tense]

The only exception is with the plural imperative, in which case, number follows the directional (see §2.3.4.1.6).

Aspect, number, orientation, and tense markers can often be straightforwardly segmented from each other. However, there is considerable interdependency of forms such that the realization of the set of suffixes is dependent on each member of the group. For example, changes in number marking are dependent upon whether it is followed by an orientation suffix or not. It is also not the case that all logically possible combinations of aspect, tense, and orientation morphemes exist in Nez Perce. For example, while some tenses have both a cislocative and a translocative, others have only a cislocative (see §2.3.4.1.3). For these reasons it is necessary to consider the amalgamation of these inflectional categories as a complex whole. I will refer to this complex as "aspect-tense" rather than the more usual tense-aspect because in Nez Perce aspect is the more important category and because aspect suffixes precede tense suffixes.

Although investigation of the phonological forms of the inflectional complex is my main goal, I provide some description of the functions and meanings of the different parts of the complex.

2.3.4.1.1. Aspect and verb stem class

Nez Perce verbs belong to one of two different morphological classes. Class determines the form of the aspect marker in all but one of the different kinds of aspect. Verb classes determine the initial consonant of the aspect suffix – whether there will be one and if there is one what it will be. Aoki (1970:81) calls the two classes the S-class and the C-class after the form of the incompletive ('INC') aspect suffix: **-see** for S-class stems and **-cee** for C-class stems. The examples in (219) illustrate this contrast:

(219)	a.	**hìpíse**		b.	**cìkáawca**
		hipi-see			**ckaaw-cee**
		eat-INC			fear-INC
		'I eat'			'I fear'

There are two situations in which a verb's stem class can be predicted. First, Rude (1994) has observed that when a verb has a diphthong in the final syllable of the stem, then in almost all instances it will belong to the C-stems. The second time when a verb's class can be predicted is when it ends in a derivational suffix. If a verb has one or more such suffixes, the last one determines the verb's morphological class. However, the class of a derivational suffix must itself be learned (see §2.3.4.2.3). Otherwise, a verb's stem class must be learned as part of its idiosyncratic information.

The list in (220) gives the class identifying consonant for the complete set of Nez Perce aspects. The symbol Ø indicates that there is no class consonant for that aspect.

(220)

	S-Class	C-Class
Incompletive	**-s**	**-c**
Perfect	**-s**	**-n**
Past Habitual	Ø	**-n**
Perfective	Ø	**-n**
Irrealis	Ø	**-n**
Conditional	Ø	**-n**
Imperative	Ø	**-n**
Present Habitual	Ø	Ø

I include also the active participle.

(221)

	S-Class	C-Class
Active participle	**-t**	**-n**

The incompletive aspect (INC) marker **-see/-cee** is used by itself to express a present, ongoing action or one that is about to take place (Rude 1985:54 calls this aspect the progressive).

(222) a. **cìklíice 'ìníitx**
cklíi-cee 'níit-x
return-INC house-ALL
'I'm returning to the house'

b. **hìpíse**
hip-see
eat-INC
'I'm eating'

It is less often used to express a generic activity, but as a generic, it has the same meaning as the present habitual. In combination with the recent past tense marker **-qa** (REC), the incompletive supplies an ongoing or just completed recent past tense.

(223) a. **hìpsáaqa**
hip-see-qa
eat-INC-REC
'I was eating'
or 'I eat'

b. **cìkáawcàqa**
ckaaw-cee-qa
fear-INC-REC
'I was afraid'
or 'I did fear'

The aspect marker has an underlying long vowel that is realized with length when it has main stress. The marker receives stress when it is in the penultimate position and there is no accented syllable in the verb. There is no accented vowel in (223a) and so the vowel of the aspect marker receives main stress. In (224b), the verb stem has an accented vowel **áa**, and so stress is not assigned to the aspect marker, even though it is penultimate, and so the vowel is realized as short. (See discussion of vowel shortening in Chapter 4.2.1.4).

The habitual present (HAB) has the form **-teetu** in both C-stems and S-stems. This aspect expresses what someone or something typically does.

(224)	a.	**hìptéetu**	b.	**cìkáawtàto**
		hip-teetu		**ckáaw-teetu**
		eat-HAB		fear-HAB
		'I always eat'		'I always get afraid'

The habitual past (HAB.PST) has a form **-qaaqa**, which differs depending on whether it is attached to a S-stem (**-qaaqa**) or C-Stem (**-nqaaqa** or **-niqaaqa** following a consonant).

(225)	a.	**hìpqáaqa**	b.	**cìkáawniqàqa**
		hip-qaaqa		**ckáaw-nqaaqa**
		eat-HAB.PST		fear-HAB.PST
		'I always ate'		'I always got afraid'

As with the incompletive aspect, the long vowels are realized only when they are assigned main stress.

The perfect (PRF) aspect gives the sense of a recently completed act. Rude (1985:57) describes it as an act that has "present relevance". The perfect is realized as **-s** following S-stems and **-n** following C-stems.

(226) a. **hípsˇ**
hip-s
eat-PRF
'I've just eaten'

b. **pèeléeyn**
peeléey-n
get.lost-PRF
'I've gotten lost'

The perfect can also be used with a desiderative particle (DESID1) to provide a hortatory or a desiderative meaning.

(227) a. **kée pèhípsˇ**
pe-hip-s
DESID1 PL-eat-PRF
'Let's eat!'

The perfective (PTV) has a past, completive denotation, but one which does not imply that the completion of the event is still relevant. Following S-stems it is **-e** (**-ye** following vowels), and following C-stems it is **-ne**.

(228) a. **hípe**
hip-e
eat-PTV
'I ate'

b. **cìkáawna**
ckaaw-ne
fear- PTV
'I became afraid'

Rude (1985:58) states that the meaning lacks the sense of recent occurrence or present relevance. I have found that native speakers use it as a neutral past. In my experience, it is the most common way of referring to past occurrences and states in daily conversation. It does not specify whether the time was recent or remote, nor does it indicate whether the occurrence is relevant to the present situation. This is in contrast to the recent past and the remote past. The recent past indicates a recent event and implies ongoing action at that time. The remote past indicates events and states that happened a long time ago.

Speakers use the irrealis (IRR) almost exclusively as a future. It is realized as **-u'** following an S-stem and **-nu'** following a C-stem.

(229)	a.	**hìpú'**	b.	**cìkáawnò'**
		hip-ú'		**ckaaw-nú'**
		eat-IRR		fear-IRR
		'I will eat'		'I will be afraid'

Evidence that this is not a future tense but rather an aspectual marker is that it combines with tense to create a past conditional (see §2.3.4.1.5). Rude (1985:60) discusses this aspect and provides examples of irrealis readings in complement clauses.

The irrealis, perfect, and perfective aspects share the characteristic that they have prefixal subject number agreement instead of suffixal number agreement (see §2.3.4.1.2). This may be seen as further evidence that it is a kind of aspect rather than a tense.

Finally, the imperative (IMP) also changes its realization according to the stem to which it is attached (see Rude 1985:63). Following an S-stem, the imperative is **-x**, **-y** or zero (230). Following a C-stem, it is realized as **-n** (**-in** after a consonant) or zero (231).

(230)	a.	**hípx**	b.	**tí'yey**	c.	**'áalix**
		hip-x		**ti'ye-y**		**'aalik**[15]
		eat-IMP		laugh-IMP		light.fire
		'Eat!'		'Laugh!'		'Light a fire!'
(231)	a.	**wáaqin**	b.	**tìmmíyu**		
		waaq-n		**timmíyu**		
		wake-IMP		consider		

[15] If the final **x** in this example came from the imperative, the form would be **'áalikx**.

'Wake up!' 'Consider it!'

The most common forms for verbs of these two morphological classes are those like the (a) exampies.

As stated above, aspect must always be part of the inflectional complex. The categories number, orientation, and tense must be considered in combination with aspect. In the next section, we consider aspect in combination with number agreement.

2.3.4.1.2. Aspect plus subject number agreement

In Nez Perce, plural subject number agreement is indicated with either a suffix or a prefix, depending on the kind of aspect. Incompletive, habitual, and imperative aspect have suffixal number agreement. Perfect, perfective, and irrealis aspect have prefixal number agreement. Only subject number agreement is encoded by a suffix. Plural objects are indicated by the prefix **nées-** (see §2.3.4.2.2). Verbs that are not marked for plural subject are neutral with respect to number. They can be used with either singular or plural subjects, although plural subject number agreement is more common with plural subjects and native speakers will give utterances with plural subject number agreement in response to elicitation with English sentences that have plural subjects.

2.3.4.1.1.1. Suffixal subject number agreement

The two sets of examples (232) and (233) contrast the incompletive **-see/-cee** with plural **-síix/-cíix**.

(232) a. **hìpíse**
hip-see
eat-INC
'I eat'

b. **cìkáawca**
ckaaw-cee
fear-INC
'I fear'

(233) a. **hìpsíix**
hip-síix
eat-INC.PL
'We eat'

b. **cikáawcìx**
ckáaw-cíix
fear-INC.PL
'We fear'

It is clear from these examples and from many others that **-iix** indicates plural. At first glance, it would also appear that **ee** indicates singular. However, it is really the case that these verbs are neutral with respect to number, and that neutral verbs tend to imply singular subjects in contexts where they are contrasted with plural verbs. Rude (1985:36) has observed that Nez Perce allows plural nouns with singular verbs somewhat freely (234).

(234) **tìtm'áayim** **péexcène**
ti-tim'áay-im **pee-hek-cee-ne**
RED-girl-ERG 3on3-see-INC-RMT
'The girls saw him' (Phinney 1934 147:17)

While the subject **titm'áayim** 'girls' is clearly plural in this example, the verb takes neutral marking with **-cee**.[16]

Plural subject marking only occurs with a plural subject. Compare the habitual **-teetu** with the habitual plural **-tee'nix**.

(235)	a.	**hìptéetu**	b.	**cìkáawtàto**
		hip-teetu		**ckáaw-teetu**
		eat-HAB		fear-HAB
		'I typically eat'		'I typically get afraid'
(236)	a.	**hìptée'nix**	b.	**cìkáawtà'nix**
		hip-tee'nix		**ckáaw-te'nix**
		eat-HAB.PL		fear-HAB.PL
		'We typically eat'		'We typically get afraid'

The morphological classes are not reflected in the habitual aspect.

The morphological classes are reflected in the habitual past. The neutral has the form **-qaaqa** with S-stems and **-n(a)qaaqa** with C-stems. The plural is **-a'niiqa** (**-ya'niiqa** after vowels) with S-stems and **-na'niiqa** with C-stems.

(237)	a.	**hìpqáaqa**	b.	**cìkáawnaqàqa**
		hip-qaaqa		**ckáaw-naqaqa**
		eat-HAB.PST		fear- HAB.PST
		'I typically ate'		'I typically got afraid'

---

[16] In conversation with today's speakers, I have observed that this is much more likely to happen with the remote past than it is with an incompletive verb used to express a present tense, ongoing activity. At present, I have no explanation for this difference between tenses.

(238)	a.	**hìpà'nǐiqa**	b.	**cìkáawnà'niqa**
		hip-a'niiqa		**ckáaw- na'niiqa**
		eat-HAB.PL.PST		fear- HAB.PL.PST
		'We typically ate'		'We typically got afraid'

Other tenses and directional suffixes occur with the habitual, as we will see below.

The imperative is the third aspectual class that has suffixal number marking. The plural is marked with **-tx** with S-stems and for C-stems either **-tx** or **-ntx**, when the C-stem ends in a vowel. The neutral imperative with S-stems is shown for comparison marked with **-x**, **-y**, and zero in (239).

(239)	a.	**hǐpx**	b.	**tǐ'yey**	c.	**'áalix**
		hip-x		**ti'ye-y**		**'aalik**
		eat-IMP		laugh-IMP		light.fire
		'Eat!'		'Laugh!'		'Light a fire!'

The following examples are the same S-stem verbs marked with the plural imperative **-tx**.

(240)	a.	**hìpǐtx**	b.	**tǐ'yètx**	c.	**'áalikìtx**
		hip-tx		**ti'ye-tx**		**'aalik-tx**
		eat-IMP		laugh-IMP		light.fire-IMP
		'Eat!'		'Laugh!'		'Light a fire!'

The C-stems in the following two examples show the neutral imperative marked with either **-n** (with epenthesis in the first example) or zero.

(241)	a.	**wáaqin**	b.	**tìmmǐyu**
		waaq-n		**timmǐyu**
		wake-IMP		figure.out
		'Wake up!'		'Figure it out!'

The same C-stems are shown in (242), the first with **-tx** and the second with **-ntx**, where the stem ends in a vowel.

(242)	a.	**wáaqìtx**	b.	**tìmmíyùntx**
		waaq-n		**timmíyu**
		wake-IMP		figure.out
		'Wake up!'		'Figure it out!'

2.3.4.1.1.2. Prefixal subject number agreement

The perfect, perfective, and irrealis all prefix **pe-** to indicate plural subject agreement. I contrast the incompletive's suffixal plural subject agreement in (243) with the perfect's prefixal subject number agreement in (244).

(243)	a.	**hìpsíix**	b.	**cìkáawcìx**
		hip-síix		**ckáaw-cíix**
		eat-INC.PL		fear-INC.PL
		'We are eating.'		'We are afraid.'
(244)	a.	**pehípes**	b.	**pàckáawn**
		pe-hip-s		**pe-ckáaw-n**
		PL-eat-PRF		PL-fear-PRF
		'We just ate'		'We have become afraid.'

The perfective and irrealis aspect also have prefixal plural subject marking. The perfective is illustrated in (245) and the irrealis in (246).

(245)	a.	**pèhípe**	b.	**pàckáawna**
		pe-hip-e		**pe-ckaaw-ne**
		PL-eat-PTV		PL-fear-PTV
		'We ate'		'We became afraid'

(246)	a.	**pèepú'**	b.	**pàckáawnò'**
		pe-hip-ú' [17]		**pe-ckaaw-nú'**
		PL-eat-IRR		PL-fear-IRR
		'We will eat'		'We will be afraid'

2.3.4.1.3. Aspect plus orientation

Nez Perce includes a cislocative and translocative in many of its inflectional complex forms. Rude (1985:48) calls them "directionals", but I will use the term "orientation." Orientation appeals to the notion of a compass, and the cislocative and translocative express opposite poles with respect to the verb's action in relation to the speaker. In addition, there is a set of derivational suffixes (§2.3.4.3) which in many cases provide directional notions.

The cislocative generally indicates motion or action oriented towards the speaker and the translocative motion or action oriented away. The essential semantics of the cislocative and translocative are easily compared in the verb **kuu** 'go'. Here the incompletive plural cislocative (INC.PL.CIS) is constrasted with the incompletive plural translocative (INC.PL.TRS). With the cislocative, the meaning is 'go toward the speaker' or 'come' and with the translocative the meaning is 'go away from the speaker' or 'leave'.

---

[17] The deletion of intervocalic **h** takes place when the syllable for which it is the onset lacks main stress. This deletion rule, with the accompanying changes in vowels, will be discussed in Chapter 3.2.

(247)	a.	**hìkusíinm** **hii-kuu-siinm** 3-go-INC.PL.CIS 'They are coming.'	b.	**hìkusíinki** **hii-kuu-siinki** 3-go-INC.PL.TRN 'They are leaving.'

In addition to the basic meanings which relate to movement, there are also more abstract notions that these orientation markers can imply. I will return to the issue of semantics after first considering phonological nature of these markers.

In all aspectual classes but the irrealis, and for both morphological classes of verbs, the cislocative (CIS) is **-m** following a vowel and **-im** following a consonant. The verb in (248) is an S-stem in the incompletive and the one in (249) is a C-stem in the imperative. They are both derived from the same root **ke'ey** 'move', but **'iyéekey'k** includes the stem formative (SF) **-k**, and all verb stems ending in this stem formative belong to the S-class (see §2.3.4.3) Both the S-stem verb and the C-stem verb have identical cislocatives.

(248)	a.	**'ìyéekèy'kse** **'iyée-ke'ey-k-see** float-move-SF-INC 'I am floating'	b.	**'ìyéekèy'ksem** **'iyée-ke'ey-k-see-m** float-move-SF-INC-CIS 'I come floating'
(249)	a.	**wìske'éyn** **ws-ke'ey-n** travel-move-IMP 'Take a trip!'	b.	**wìske'éynim** **ws-ke'ey-n-im** travel-move-IMP-CIS 'Take a trip over this way!'

The irrealis aspect is the only aspectual class in which the form of the cislocative differs. With the irrealis the cislocative is **-kum**.

(250)	a.	**'iyéekèy'ku'** **'iyée-ke'ey-k-u'** float-move-SF-IRR 'I wili float'	b.	**'iyéekèy'kù'kum** **'iyée-ke'ey-k-u'-kum** float-move-SF-INC-CIS 'I will come floating'
(251)	a.	**pèwske'éynù'** **pe-ws-ke'ey-nu'** PL-travel-move-IRR 'You will move you home'	b.	**pèwske'éynù'kum** **pe-ws-ke'ey-nu'-kum** PL-travel-move-IRR-CIS 'You move your home over this way'

The cislocative always follows the aspect marker. With respect to plural subject marking, the irrealis, the perfect, and the perfective have prefixal subject plural marking, so in these three aspects, orientation marking and number cannot interact. On the other hand, the incompletive, habitual, and imperative mark plural subjects in the inflectional suffix. Orientation marking interacts with plural marking in the incompletive and imperative. There is no habitual plural cislocative.

For the incompletive, the elements of the suffix occur in the order <u>aspect-number-cislocative</u>. However, the form of the plural marking is changed to **-iin** with the cislocative instead of **-iix**.

(252)	a.	**'iyéekèy'ksìx** **'iyée-ke'ey-k-s-iix** float-move-SF-INC-PL 'We are floating'	b.	**'iyéekèy'ksìnm** **'iyée-ke'ey-k-s-iin-m** float-move-SF-INC-PL-CIS 'We come floating'

In the imperative aspect, the order of plural number and cislocative is reversed. This is the only time that plural number marking follows orientation marking.

(253)	a.	**wìske'éytx**	b.	**wìske'éynìmtx**
		ws-ke'ey-tx		**ws-ke'ey-n-im-tx**
		travel-move-IMP.PL		travel-move-IMP-CIS-PL
		'Take a trip! (PL)'		'Take a trip over this way! (PL)'

Plural marking is different in the imperative from the incompletive and habitual. The imperative plural is **-tx** rather than **-iin** or **-iix**.

There is a cislocative neutral habitual, but no cislocative plural habitual.

(254)	a.	**wìske'éytètu**	b.	**wìske'éytètum**
		ws-ke'ey-teetu		**ws-ke'ey-teetu-m**
		travel-move-HAB		travel-move-HAB-CIS
		'I always take a trip'		'I always take a trip over this way'

As already noted, Nez Perce neutral verbs can be used for plurals, so neutral habitual cislocatives can be used for plural subjects. There are periphrastic means of expressing orientation of the action toward the speaker.

The translocative has the form **-ki** (**-kik** when followed by a vowel). It appears that this marker is related to the directional case marker **-k/-pk**. The translocative only occurs with the incompletive, the perfect, and the perfective (not in the habitual and irrealis aspect, nor with the remote past or the conditional discussed in §§2.3.4.1.4-5). When the translocative (TRN) is formed with the incompletive, the realization of number in the incompletive is **-seen/-ceen** for neutral and **-siin/-ciin** for plural. Examples with S-stems are provided.

(255)	a.	**wìléekèy'kse** **wilee-ke'ey-k-see** run-move-SF-INC 'I am running'	b.	**wìléekèy'ksènki** **wilee-ke'ey-k-seen-ki** run-move-SF-INC-TRN 'I am running away'
(256)	a.	**wìléekèy'ksìx** **wilee-ke'ey-k-síix** run-move-SF-INC.PL 'We are running'	b.	**wìléekèy'ksìnki** **wilee-ke'ey-k-siin-ki** run-move-SF-INC.PL-TRN 'We are running away'

In the incompletive recent past tense, the marker **-qa** is added after the translocative, while the translocative has the form **-qa** or **-qi** (PL). Rude (1985:51) attributes this to a form of consonant harmony. Consonant harmony is not a productive process in Nez Perce at this time. The resulting forms are then **-saanqaqa/-caanqaqa** for the incompletive singular translocative past (INC.TRN.PST) and **-siinqiqa/-ciinqiqa** for the incompletive plural translocative past (INC.PL.TRN.PST). Examples with an S-stem verb are provided.

(257)	a.	**wìléekèy'ksànqàqa** **wilee-ke'ey-k-saanqaqa** run-move-SF-INC.TRN.PST 'I was running away'	b.	**wìléekèy'ksìnqìqa** **wilee-ke'ey-k-siinqiqa** run-move-SF-INC.PL.TRN.PST 'We were running away'

With the perfect and perfective, plurality is marked with a prefix. The basic form of the aspect marker itself is affected for S-stem verbs when the translocative is present. The perfect, without the translocative, is **-s** with S-stems and **-(i)n** with C-stems. With the translocative, the forms are **-ki** and **-n(i)ki** (PRF.TRN) for S-stems and C-stems respectively.

(258) a. **qùqúkèy'xki**
** ququ-ke'ey-k-ki**
gallop-move-SF-PRF.TRS
'I just galloped away'

b. **wéhyènki**
wéhye-nki
go-PRF.TRS
'I just went away'

The regular perfect is **-(y)e** with S-stems and **-ne** with C-stems, and the perfective translocative (PTV.TRN) is **-kike** (259a) and **-n(i)kike** respectively (259b).

(259) a. **qùqúkèy'xkìke**
ququ-ke'ey-k-kike
gallop-move-SF-PTV.TRS
'I galloped away'

b. **wìyéenkìke**
wiyee-hi-nkike
as.one.goes-speak-PTV.TRS
'I spoke as I moved away'

The basic semantics of the cislocative and translocative were compared above with the verb **kuu** 'go' (247). These orientation markers can have an impact at a more abstract level, however. In addition to the purely directional reading, Rude (1985: pp.49-50) observes that the cislocative seems to have an evidential reading in some narratives. In my own fieldwork I have found the cislocative to serve as a kind of object agreement for first person objects.

(260) a. **hèekíce**
hii-hek-cée
3-see-INC
'It sees.'

b. **hèekcéem**
hii-hek-cée-m
3-see-INC-CIS
'It sees me.'

(261) a. **'ée náascikáawca**
'ee nees-ckáaw-cee
you PLOB-fear-INC
'You are afraid of them.'

b. **'ée náascikàwcam**
'ee nees-ckáaw-cee-m
you PLOB-fear-INC-CIS
'You are afraid of us.'

Obviously, no movement is involved in the act of seeing or the condition of fearing, but seeing and fearing are usually oriented towards something. Rude asserts that when the

verb to which the cislocative is attached has an inherent sense of leaving, "the cislocative refers to the source of the motion rather than the goal" (1985:49) (emphasis his).

(270) **nìwíhnam**
niwihna-m
leave-CIS
'Leave!'

(270) can be translated more completely as 'Leave me!'. If the cislocative can act as object agreement for first person objects, that would subsume Rude's observations about "source of the motion". I do not have evidence of the translocative acting in the capacity of an object agreement marker.

2.3.4.1.4. Aspect plus tense

Different time readings are obtained with Nez Perce verbs which are marked only with aspect. The irrealis for example implies the future in main clauses and the conditional in dependent clauses. Likewise, present tense readings normally follow from the unmarked incompletive, habitual, and imperative aspects. Context can change these time readings, however. Coyote stories take place in myth time which is definitely the remote past. Sometimes a narrator will tell them almost entirely in the remote past. Alternatively, a narrator can start out with a statement or two in the remote past, and then shift into the incompletive.

(271) **'iceyéeye kona hikiyéeyiksene**
Coyote there going.around (Remote Past)

kál'o' kíimet ku'skin'ix hinéesexne
just then at.that.time he.saw.them (perfective)

neqéeykex 'isíimet neqéey hitq'elúusix titm'áay'.
across there other.side they.are.swimming (incompletive) girls

'Coyote was going around (remote past) there. Just then he saw (perfective) them across on the other side. The girls were swimming (incompletive).'
(translation adapted from Aoki and Walker 1989:224)

The first verb, **hikiyéeyiksene** 'he was going around', is in the remote past, and it sets the stage as being myth time. The second verb, **hinéesexne** 'he saw them', is in the perfective and is indefinite about its location in the past. The third verb, **hitq'elúusix** 'they are swimming' introduces something of a historical present. Throughout the rest of the text in question, verbs in the incompletive are interspersed with verbs in the remote past tense and the perfective aspect. The verbs that are only aspectually marked take their time frames from the context created by the verbs marked with remote past.

There are two distinct past tenses in Nez Perce – the recent past with **-qa** (REC) and the remote past with **-ne** (RMT). Whenever a Nez Perce verb contains one of these markers, it will be the last element in the word. The recent past suffix **-qa** occurs with the incompletive and habitual aspects to provide time readings, and it combines with the irrealis to form a conditional (§2.3.4.1.5). The realization of this tense marker is unaffected by the presence of any other morphology. Examples are provided with the

incompletive and the habitual, with the singular and plural incompletive (272), and with the cislocative and translocative (273).

(272) a. **hìpsáaqa**
hip-see-qa
see-INC-REC
'I was seeing'
or 'I saw'

b. **hìpqáaqa**
hip-qaa-qa
see-HAB- REC
'I used to see'

c. **hìpsíiqa**
hip-sii-qa
see-INC.PL- REC
'We were seeing'
or 'We saw'

(273) a. **hìkosíinmqa**
hii-kuu-siinm-qa
3-go-INC.PL.CIS-REC
'They were coming'

b. **hìkusíinqiqa**
hii-kuu-siinqi-qa
3-go-INC.PL.TRN- REC
'They were going away'

The form of the translocative is **-qi** instead of **-ki** when it precedes the recent past **-qa**.

The other past tense is indicated by the suffix **-ne**. It is a 'remote past' (RMT). As already shown, both the remote past and recent past are used in myth narratives, and it is not surprising to learn that the remote past is more common in those texts. It might seem at first surprising that when they are contrasted in the following example, the event indicated by the recent past has taken place farther into the past than the event indicated by the remote past.

(274) **yox̂ ke** **hináac'nisaqa** **péesepèexcène**
hii-nées-'nii-see-qa **pée-sepée-hek-cee-ne**
that which 3-PLOB-give-INC- REC 3ON3-CAUS-see-INC-RMT
'that which she gave them they showed her' (Phinney 1934 45:6-7)

However, if the recent past of the verb **hináac'nisaqa** 'she gave them (REC)' in the dependent clause takes its time index from the frame of the main clause **péesepeexcene** 'they showed her (RMT)', then the interaction of the tenses makes sense. The line (274) could be retranslated as, 'Long ago, they were showing her that which she had just given them.' The woman's act of giving had taken place just a short time before the act of their showing her the gift.

The remote past tense marker **-ne** occurs with the incompletive and the habitual **-qaa**, and with plural as well as number neutral verbs (275).

(275) a. **hìpséene**
hip-see-ne
see-INC-RMT
'I was seeing'
or 'I saw'

b. **hìpqáana**
hip-qaa-na
see-HAB-RMT
'I used to see'

c. **hìpsíine**
hipi-siin-ne
see-INC.PL-RMT
'We were seeing'
or 'We saw'

The remote past also occurs with the cislocative.

(276) **hìkusíinme**
hii-kuu-siin-m-ne
3-go-INC.PL-CIS-RMT
'They were coming'

The deletion of a nasal following another nasal, as in (275c) (**n-n> n**) and (276) (**m-n> m**) is a regular sound change in Nez Perce.

Care should be taken not to confuse the perfective with the remote past. The form of the C-stem perfective aspect is **-ne** also. However, the tense marker **-ne** occurs with both kind of stems, and it follows other aspect markers. The perfective aspect **-ne** affixes directly to the verb stem, has prefixal subject agreement, and can be followed only by an orientation marker. The perfective and remote past do not combine.

While there is a habitual cislocative remote past (277), there is no translocative remote past with either the incompletive or the habitual.

(277) **hìkoqáama**
hii-kuu-qaam-ne
3-go-HAB.CIS-RMT
'They used to come'

This stands in contrast to the situation with the recent past **-qa**, which occurs with both the translocative incompletive and the habitual (see (272) above). We will also see in the next section that the past **-qa** occurs in the conditional, but the remote past **-ne** does not.

2.3.4.1.5. The conditional mood

The conditional is used to express potential occurrences and events contrary to fact. One of my consultants says, "They are kind of 'iffy' words." There are two ways of creating conditionals in Nez Perce. In the one case, the conditional mood marker **-'aax̂** is affixed to either a nominalized verb or a verb that has the incompletive aspect. In the

other case, the irrealis **-u'** is combined with the recent past **-qa**. Both conditionals are illustrated in (278) with the verb **paay** 'come, arrive'.

(278) a. **pàkkáa kìwal'á hìpáaycàn'ax̂.**
hii-páay-ceen-'aax̂
sometimes at.this.time 3-arrive-INC-CND
'Sometimes at this time he could come.'

b. **pàkkáa kìwal'á hìpáaynò'qa.**
hii-páay-nu'-qa
sometimes at.this.time 3-arrive-IRR-REC
'Sometimes at this time he could come.'

Speakers with whom I am working are much less comfortable with the conditional in **-'aax̂**. They understand forms with **-'aax̂**, but they prefer to produce examples like the one in (278b) and (279):

(279) **hìpàapó'qa mét'u hìnéesepewìtnène**
hii-pe-hip-u'-qa hii-nées-sepée-witne-ne
3-PL-eat-IRR-REC but 3-PLOB-CAUS-leave-PTV
'They could have eaten but she made them leave.'

This example gives one context within which a conditional can be used; a potential event that did not occur is given along with the reason for its non-occurrence. The question-answer pair in (280) represents another situation in which the conditional is used.

(280) a. **míne 'àwyáax̂nò'qa tàx̂cpólna?**
'e-wiyéex̂-nu'-qa tax̂cpol-ne
where 3OB-find-IRR-REC beaver-OBJ
'Where might you find beaver?'

b. **kúuslàykin**
kúus-laykin
water-near.by
'Nearby the water.'

Beavers are potentially found in or around the water, but you cannot be certain you will find one if you go looking there.

The conditional suffix **-'aax̂** (CND) affixes to two kinds of stems – a verb in the incompletive aspect or a verb nominalized with the active participle (NM) (**-t** with S-stems and **-n** with C-stems).

(281) a. **hìipít'ax̂**
hii-hip-t-'aax̂
3-eat-NM-CND
'he could eat'

b. **hìpáayn'ax̂**
hii-páay-n-'aax̂
3- arrive-NM-CND
'he could have arrived'

In Nez Perce, bare nominalizations lack person agreement (see §2.3.4.6), but the conditional **-'aax̂** reverbalizes the construction and in these examples the verbs have third person agreement.

Alternatively, the conditional **-'aax̂** takes a verb stem in the incompletive aspect to form an incompletive or progressive conditional.

(282) a. **hìipsáan'ax̂**
hii-hip-seen-'aax̂
3-eat-INC-CND
'he could have been eating'

hìpáaycàn'ax̂
hii-páay-ceen-'aax̂
3- arrive-INC-CND
'he could have been arriving'

Plurals forms are possible for conditionals formed with **-'aax̂**. The conditional which is based on the nominative has prefixal plural agreement (only S-stem examples are provided) (283a).

(283)	a.	**hipàapít'ax̂** **hii-pe-hip-t-aax̂** 3-PL-eat-NM-CND 'they could eat'	b.	**hìipsíin'ax̂** **hii-hipi-siin-'aax̂** 3-eat-INC.PL-CND 'they could have been eating'

The **-'aax̂** conditional formed with the incompletive has the suffixal plural expected of that aspect (b).

The other conditional combines the irrealis aspect **-u'** with the recent past **-qa**.

(284)	a.	**hìipó'qa** **hii-hip-u'-qa** 3-eat-IRR-REC 'he could eat'	b.	**hipáaynò'qa** **hii-páay-nu'-qa** 3-arrive-IRR-REC 'he could arrive'

These examples illustrate the forms with both S-stems and C-stems. The plural of this kind of conditional has prefixal plural agreement, which follows from the fact that the irrealis aspect takes prefixal plural subject agreement (285).

(285)	a.	**hìpàapó'qa** **hii-pe-hipi-u'-qa** 3-PL-eat-IRR-REC 'they could eat'	b.	**hìpapáaynò'qa** **hii-pa-páay-nu'-qa** 3-PL-arrive-IRR-REC 'they could arrive'

The conditional cislocative occurs only with the past and not with the suffix **-aax̂**.

(286) **hìpacolá̓hnanò'kòmqa**
hii-pe-cu-lé̓hne-nu'-kum-qa
3-PL-single.file-move.down-IRR-CIS-REC
'they could have come downward single file'

Because the past conditional is based upon irrealis aspect, plural subject agreement is prefixal.

2.3.4.1.6. The complete inflectional complex

I have described each aspect of the inflectional suffix complex – aspect, number, orientation, tense, and the conditional. I will now place them in parallel.

First, there are the three aspects that have prefixal number agreement – the perfect, the perfective, and the irrealis. The perfect and perfective aspect do not combine with tense markers. The irrealis combines with the past to create the conditional, which also has prefixal number agreement, and is included here. In addition, I list the nominalizer. For C-stems, the nominalizer is **-n**, which follows the pattern of most of the other aspect markers, and the nominalizer also selects prefixal agreement when the conditional is formed with **-'aax̂**.

(287)

	S-stem	C-stem
Perfect	**-s**	**-(i)n**
Perfective	**-(e)y**	**-ne**
Irrealis	**-(y)u'**	**-nu'**
Past conditional	**-(y)o'qa**	**-no'qa**
Nominative	**-t**	**-(i)n**

The forms of the aspects with the cislocative are in (288).

(288)

	S-stem	C-stem
Perfect	**-(i)m**	**-nim**
Perfective	**-(i)me**	**-nime**
Irrealis	**-(y)u'kum**	**-nu'kum**
Past Conditional	**-(y)o'komqa**	**-no'komqa**

Only the perfect and perfective have translocative forms.

(289)

	S-stem	C-stem
Perfect	**-ki**	**-n(i)ki**
Perfective	**-kike**	**-n(i)kike**

The forms of the directional paradigms suggest that the perfect and perfective are related historically.

The neutral forms of the imperative, incompletive, and habitual present are in (290).

(290)

	S-stem	C-stem
Imperative	**-Ø, -y, -x**	**-Ø, -(i)n**
Incompletive	**-see**	**-cee**
Habitual Present	**-teetu**	**-teetu**

Both the incompletive and habitual aspects combine with tense markers. The basic form of the incompletive does not change, but there are several different forms for the habitual.

(291)

	S-stem	C-stem
Incompletive Present	**-see**	**-cee**
Incompletive Past	**-saaqa**	**-caaqa**
Incompletive Remote	**-seene**	**-ceene**
Habitual Present	**-teetu**	**-teetu**
Habitual Past	**-qaaqa**	**-n(a)qaaqa**
Habitual Remote	**-qaana**	**-n(a)qaana**
Habitual Perfect	**-x̂**	**-nx̂**

Plural forms are in (291). Although the plural imperative does not have the vowel **i**, which is included in all of the other plurals, the **x** is found in several other plurals.

(292)

	S-stem	C-stem
Incompletive Present	**-siix**	**-ciix**
Incompletive Past	**-siiqa**	**-ciiqa**
Incompletive Remote	**-siine**	**-ciine**
Habitual Present	**-te'niix**	**-te'niix**
Habitual Past	**-(y)a'niiqa**	**-na'niiqa**
Habitual Remote	**-(y)e'niixne**	**-ne'niixne**
Habitual Perfect	**-(y)e'niix**	**-ne'niix**
Imperative	**-(i)tx**	**-n(i)tx**

Cislocative forms are in (293). The incompletive has plural cislocatives and for the present and past tenses. The habitual past and perfect lack a cislocative.

(293)

	S-stem	C-stem
Incmp. Present	**-seem**	**-ceem**
Incmp. Present plural	**-siinm**	**-ciinm**
Incmp. Past	**-saamqa**	**-caamqa**
Incmp. Past plural	**-siinmqa**	**-ciinmqa**
Incmp. Remote	**-seeme**	**-ceeme**
Habitual Present	**-teetum**	**-teetum**
Habitual Remote	**-qaama**	**-qaama**
Imperative	**-(i)m**	**-nim**
Imperative plural	**-(i)mtx**	**-nimtx**

Translocative forms are in (294), where again we see that the incompletive has a plural in the present and past, and no plural translocative in the remote.

(294)

	S-stem	C-stem
Incompletive Present	**-seenki**	**-ceenki**
Incompletive Present plural	**-siinki**	**-ciinki**
Incompletive Past	**-saanqaqa**	**-caanqaqa**
Incompletive Past plural	**-siinqiqa**	**-ciinqiqa**
Incompletive Remote	**-seeme**	**-ceeme**

The habitual lacks a translocative. These forms have long vowels underlyingly, and follow the general pattern described in §2.1.4 in which length is realized just in case the vowel has main stress.

Although there is differentiation in the morphemic "slots" of aspect, number, directional, and tense, the presence of one category can affect the realization of the rest of the complex in ways that cannot be attributed to any regular sound change. Hence, they must be seen together as a complex whole. From this point on, I will no longer segment the suffixal aspect-number-orientation-tense morphology.

2.3.4.1.7. An irregular verb

The verb **wéhye** is irregular in that it does not require inflection in the incompletive neutral present. It has regular inflection in other aspectual forms.

(295) a. **hìwéhye**
hii-wéhye
3-go
'he is going'

b. **hìwéhyenù'**
hii-wéhye-nú'
3-go-IRR
'he will go'

It also inflects regularly in the plural incompletive. **wéhye** is the only such verb that I know of.

(296) **hìwéhyecìx**
hii-wéhye-cíix
3-go-INC.PL
'they are going'

2.3.4.2. Prefixal inflection

Prefixal inflection involves much less suppletion than is found in suffixal inflection. With one exception, we can treat the different categories of prefixal inflection separately without considering them as part of a morphologically interdependent complex.

The basic scheme of inflectional prefixes is in (297), although, depending on the number and person of the arguments, there may not be any inflectional prefix at all.

(297) **[SUB/OBJ.PERS.- [PLURAL SUBJ.- [PLURAL OBJ.- [DISTRIB.-** [CAUSATIVE- [...]
-- stem --

All inflectional prefixes are outside of the causative, which is the derivational prefix closest to the stem (I present derivation of verb stems in §2.3.4.3). I will begin by addressing plural subject and plural object agreement. They are both quite simple, and they provide background for understanding of person agreement.

2.3.4.2.1. Subject number agreement

Prefixal subject number agreement, realized with perfect, perfective, and irrealis aspect, has already been discussed above in § 2.3.4.1.1.2, so a brief summary here will suffice. Suffixal agreement with incompletive aspect in (298) contrasts with prefixal agreement, seen in (299) with the perfective.

(298)	a.	**kúuse**	b.	**kùsíix**
		kuu-see		**kuu-síix**
		go-INC		go-INC.PL
		'I am going'		'We are going'
(299)	a.	**kúye**	b.	**pèkúye**
		kuu-ye		**pe-kuu-ye**
		go-PTV		PL-go-PTV
		'I went'		'We went'

Instead of the plural suffixal morpheme **-iix/-iin**, the plural subject is indicated with the prefix **pe-**.

2.3.4.2.2. Object number agreement

Verbs indicate the number of neither a singular subject nor a singular object, but they do indicate the plurality of a direct object with the prefix **nees-**. This holds across all the different kinds of aspect. In (300) we have an example of the plural object prefix with incompletive aspect that takes suffixal subject number agreement. In (301), we have the perfective with prefixal number agreement, illustrating the fact that object plural agreement comes inside of subject plural agreement.

(300) **néeshèkcìx** **'ìmené**
nées-hek-cíix **'imé-ne**
PLOB-see-INC.PL you-OBJ
'We see you (pl).'

(301) **pènéeshèxne 'ìmené**
pe-nées-hek-ne **'imé-ne**
PL-PLOB-see-PTV you-OBJ
'We saw you (pl).'

Although the different kinds of aspect split with respect to marking plural subjects with a prefix or a suffix, all kinds of aspect have the same kind of plural object agreement. Descriptions in Aoki (1994) (1970:108) and Rude (1985:38-9) may also be consulted.

The examples in (302)-(303) show that **nees-** is purely number agreement and not person agreement. The verbs remain unchanged, and the pronouns indicate the personhood of the object.

(302) **néeshèkcìx** **núune**
nées-hek-cíix **nuun-ne**
PLOB-see-INC.PL we-OBJ
'You (pl) see us.'

(303) **néeshèkcìx** **'ìmené**
nées-hek-cíix **'imé-ne**
PLOB-see-INC.PL they-OBJ
'You (pl) see them.'

When the plural object agreement marker affixes to a stem beginning with a glottal stop, the glottal merges with the prefix final **s** to form a glottalized affricate **c'**.

(304) **néec'ìnpse**
nées-'np-see
PLOB-take-INC
'I take you (pl)'

2.3.4.2.3. Person agreement

When it occurs, person agreement, including reciprocal and reflexive marking, is always the leftmost prefix in the word. With reflexives, agreement encodes number and first, second, and third person. Otherwise, there is no inflection for first and second person, although verbs agree with the plural number of such arguments. I briefly re-illustrate this here:

(305) a. **pèkúuye** **'éetx**
pe-kuu-ye **'ee-tx**
PL-go-PF you-PL
'You went.'

b. **pàtàlx̂nó'**
pe-talq-nú'
PL-stop-IRR
'We will stop you.'

For third person arguments, there is person agreement as well as plural agreement, both for subjects and other arguments.

2.3.4.2.3.1. Agreement with third person arguments

For third person, there are two prefixes: **hii-** indicates third person subject argument, and **'e-** indicates a third person non-subject argument, often a direct object. The prefix **hii-** (glossed simply as "3") is illustrated here for singular and plural subjects.

(306) a. **híiwes ciq'áamqal**
hii-wee-s ciq'áamqal
3-be-INC dog
'He/she/it is a dog.'

b. **hìkusíix**
hii-kuu-síix
3-go-INC.PL
'They are going.'

c. **hìpekúuye**
hii-pe-kuu-ye
3-PL-go-PTV
'They went.'

d. **hìtàlx̂nó'**
hii-talq-nu'
3-warn-IRR
'she/he will warn me.'

The non-third person object argument in (d) is unmarked and inferred from the context.

In only the third neutral perfect form of 'be', seen in (a), does the third person subject agreement prefix have a long vowel.[18] This is also the only form in the language in which the prefix has main stress. This pattern is entirely consistent with other

[18] There are other examples where **hi-** appears to have a long vowel in the surface form, but these examples are formed when **hi-** precedes a verb stem beginning with **h**. In cases like this, if the initial syllable of the verb stem lacks main stress, then the intervocalic **h** is lost, and the vowels coalesce to form a long **hii** that lacks main stress.

morphemes that have underlying long vowels that are long only when realized with main stress. I conclude that **hi-** is underlyingly **hii-**.

The prefix **'e-** (3OB) marks not only objects but other non-subject arguments as well. Aoki (1994) and Rude (1985:32-3) have taken differing approaches to this prefix. Rude claims that this prefix marks a first or second person transitive subject with a third person object. Aoki's position is that **'e-** indicates agreement with non-subject third person arguments. This first set of examples is consistent with both Aoki's position and Rude's.

(307)	a.	**'èekíce**	**sìk'éemne**	b.	**'èpèexnú'**	**sìk'éemne**
		'e-hek-cee	**sik'eem-ne**		**'e-pe-hek-nú'**	**sik'eem-ne**
		3OB-see-INC	horse-OBJ		3OB-PL-see-IRR	horse-OBJ
		'I see the horse.'			'We will see the horse.'	

Another kind of example involves third person possession and presents a challenge for Rude's analysis.

Possession in Nez Perce is indicated with a noun or an optional pronoun in the ergative case and the copula **wee** 'be'. For first and second person possession, the verb has no agreement marking and it agrees with the possessor in number (308a).

(308)	a.	**núunim**	**wìsíix**	**píepic**	b.	**'ìmím**	**wées**	**háama**
		nuun-nm	**wee-síix**	**picpic**		**'iim-nm**	**wee-s**	**háama**
		we-ERG	be-INC.PL	cat		you-ERG	be-INC[19]	man
		'We have a cat.'				'You have a man/husband.'		

[19] In the incompletive neutral the verb **wee** has an irregular aspect marker **-s** instead of **-se**. The incompletive plural is regular: **-siix**.

In differentiating between equational and possessive constructions, the possessive pronouns can play a determining role, as the contrasting examples in (309) illustrate. Using the wrong pronouns could lead to confusion.

(309)	a.	**'íin wées pícpic**	b.	**'íim wées háama**
		'íin wee-s picpic		**'iim wee-s háama**
		I be-INC cat		you be-INC man
		'I am a cat.'		'You are a man/husband.'

If the speaker wished to indicate possession of a cat or a husband, he would need to use the ergative form of the pronoun:

(310)	a.	**'íinim wées pícpic**	b.	**'ìmím wées háama**
		'íin-nm wee-s picpic		**'iim-nm wee-s háama**
		I-ERG be-INC cat		you-ERG be-INC man
		'I have a cat.'		'You have a man/husband.'

As already stated, the pronouns are optional. In most cases, context and common sense will make it clear that the intended reading of (311) is the first one.

(311) **wées pícpic**
wee-s picpic
be-INC cat
'I have a cat.'/ 'I am a cat.'

If the speaker were a cast member of a certain Broadway musical, he or she could use a pronoun **'iin** 'I' to make clear that the second reading was intended, as in (310a).

In contrast with first and second person constructions, third person possessives have person marking. For equationals, the copula has the standard third person prefix **hii-**. However for possessives, the copula has the prefix **'e-**. The examples in (312) contrast these two constructions.

(312) a. **'ìpí híiwes háama**
hii-wee-s
3 3-be-INC man
'He is a man.'

b. **'ìpním 'úus háama**
'ipí-nm 'e-wee-s
3-ERG 3OB-be-INC man
'She has a man/husband.'

In addition to the copula in possessive clauses, regular verbs in other types of clauses will have **'e-** instead of **hii-** when the subject of the clause is a noun that has a possessor.

(313) a. **'áatim 'iláatwìsa**
'láatwi-see
arm tired-INC
'(My) arm is tired.'

b. **cáanim 'áatim 'àw'láatwìsa**
caan-nm 'e-'láatwi-see
John-ERG arm 3OB-tired-INC
'John's arm is tired.'

(314) a. **hìwíhnène 'ìwéepne**
hii-wíhne-ne
3-leave-PTV wife
'The wife left.'

b. **'èwíhnène 'ìwéepne**
'e-wíhne-ne
3OB-leave-PTV wife
'His wife left'

Even if no third person possessor is overt in the clause (314b), the presence of **'e-** implies possession. There is no first or second person argument in these examples and these sentences are not transitive. These facts argue against Rude's position that **'e-** is a marker for first and second person transitives.

I will assume that intransitive clauses with **'e-** have undergone possessor raising, making the genitive the subject of the sentence. This analysis correctly predicts that copulas agree in number with the possessor rather than the object of possession.

(315) a. **núunim wìsíix náaqc píicpic**
nuun-nm wee-síix
we-ERG be-INC.PL one cat
'We have one cat.'

b. **'íinim wées páaxat pícpic**
'iinn-nm wee-s
I-ERG be-INC five cat
'I have five cats.'

I suggest that the possessed third person noun is still in some sense an argument of the verb. The prefix **'e-** then indicates the presence of a third person non-subject argument.

The prefix **'e-** is realized as **'ew-** when it precedes a glottal stop in many verbs.

(316) **'ìtúuwècet 'èw'níise kòná**
'itúu-wecet 'ew-'nii-see
what-reason 3OB-put-INC there
'Why are you putting it there?'

This is an irregular sound change. Whether it obtains can be affected even by the aspect of the verb as seen in (317).

(317) a. **'èw'nípe**
'e-'np-e
3OB-take-PTV
'I took it'

b. **'è'npíse**
'e-'np-see
3OB-take-INC
'I am taking it'

The cases of possessor raising which have been discussed are intransitive. If they had involved both a third person subject and a third person object, the verbs would have been inflected with the marker **pée-** (third person acting on third person or '3ON3'). The portmanteau prefix **pée-** occurs only with transitive verbs.

(318) a. **páatàlxnò'**
pée-talq-nú'
3ON3-stop-IRR
'He will stop him.'

b. **páatàlqcìx**
pée-talq-cíix
3ON3-stop-INC.PL
'They are stopping him.'

pée- is not to be confused with plural subject **pe-**, which has a short vowel and almost never occurs with main stress. Rude (1985:37) reports that these two morphemes may occur together, and provides the example in (319). Rude's example shows that when they do occur together, person agreement **pée-** precedes subject number agreement **pe-**.

(319) **péepè'wìye**
pée-pe-'wii-e
3ON3-PL-shoot-PTV
'They shot him.'

However, the speakers with whom I am working are not comfortable with these two prefixes in series. (320a) is unacceptable to them. Instead, they produce the example in (320b).

(320) a. ?* **páapatàlx̂no'**
pée-pe-talq-nú'
3ON3-PL-stop-IRR
'They will stop him.'

b. **páatàlx̂nò'**
pée-talq-nú'
3ON3-stop-IRR
'He/they will stop him.'

They prefer to have the verb neutral with respect to number rather than have both **pée-** and **pe-** together in the verb.

While the prefix **pée-** co-occurs with both kinds of subject plural agreement affixes (the suffix **-ii** and the prefix **pe-**), it does not co-occur with the plural object agreement marker **nees-** (***peenees...**). When the subject and object are both third person and the object is plural, **hii-** is realized with **nées-** instead of **pée-**.

(321) **hìnáastàlx̂nò'**
hii-nées-telq-nú'
3-PLOB-stop-IRR
'He will stop them.'

In contrast to **pée-**, the prefix **'e-** does co-occur with **nees-**.

(322) **'ènéeshèkce**
'e-nées-hek-cee
3OB-PLOB-see-INC
'I see them'

2.3.4.2.3.2. Reflexive and reciprocal agreement

In addition to the agreement prefixes indicating regular arguments, there are several verbal agreement prefixes that mark reflexives and reciprocals (see Aoki (1970:90) (1994) and Rude (1985:39-41) for previous treatments). The reflexive agreement prefixes are given in (323).

(323)	**'inée-**	'myself'	**nemée-**	'ourselves'
	'imée-	'yourself'	**'imemée-**	'yourselves'
	'ipnée-	'himself'	**'imemée-**	'themselves'

The plural reflexive prefixes occur with plural number agreement.

(324) a. **'ìnéehèkce**
'inée-hek-cee
1SG.REFL-see-INC
'I see myself.'

b. **nèméehèkcìx**
nemée-hek-cíix
1PL.REFL-see-INC.PL
'we see ourselves.'

c. **'ìmeméhìnewisìx**
'imemée-hínewii-síix
2/3PL.REFL-try-INC.PL
'You/they are trying.'

The plural subject prefix **pe-** does not co-occur with the reflexive prefixes.

(325) **nèméehèxnù'** (***neméepehexnu'**)
nemée-hek-nú'
1PL.REFL-see-IRR
'We will see ourselves.'

The same pattern is seen with the reciprocal **pii-**. It takes suffixal plural subject agreement, but like the reflexives, it does not co-occur with the plural subject agreement prefix **pe-**.

(326) a. **piihèksìx**
pii-hek-siix
RECIP-see-INC.PL
'We see each other.'

b. **piihèxne**
pii-hek-ne
RECIP-see-PTV
'We saw each other.'

2.3.4.2.4. Distributive

The distributive **wii-** is found with other agreement morphology, including prefixal subject number agreement, and is found inside of them, closest to the stem (see also Aoki (1970:90) (1994) and Rude (1985:42) for previous treatments). In (327), it provides a distributive reading for the object of the transitive verb **hek** 'see'.

(327) a. **hìwiihèksìx**
hii-wii-hek-siix
3-DIST-see-INC.PL
'They see each one.'

b. **hìpewiihèxne**
hii-pe-wii-hek-ne
3-PL-DIST-see-PTV
'They saw each one.'

The examples in (328) show that this prefix provides a distributive reading for intransitive subjects.

(328) a. **hìwíipàycìx**
hii-wíi-páay-cíix
3-DIST-arrive-INC.PL
'They arrived one by one.'

b. **wíipàycìx**
wíi-páay-cíix
DIST-arrive-INC.PL
'We arrived one by one'

The distributive does not apply to the subjects of transitive verbs. In the following example, the meaning is that each child has matches that are being taken away. It does not imply that each of us takes his turn removing matches from the children.

(329) **'ènéeswìiwètkùyksìx** **túhuc** **màmáy'àsna**
'e-nées-wíi-wetkúyk-síix **mamáy'ac-ne**
3OB-PLOB-DIST-take.away-INC.PL matches children-OBJ
'We are taking away matches from each of the children.'

Without **wii-**, the sentence could mean that there was a group of children with matches that we take away from them. A generalization can be made about the Nez Perce distributive by saying that it refers to whichever argument of the verb is the theme.

2.3.4.3. Verb stem derivation

Aoki (1970:84) provided the first description and classification of Nez Perce verb derivation (Rude 1985 concentrates on inflection and syntax). Derivation of verb stems is an important area of Nez Perce lexical expansion. The greatest source of complexity is produced by a large set of derivational prefixes and derivational suffixes. One such prefix and two suffixes are included in the following example, a single verb which communicates a rather complex meaning.

(330) **hìqqukèy'kt'ipéecwitètu**
hii-qqu-key'k-t-'ipéec-wii-teetu
3-gallop-move-NOM-DESID-VRBL-HAB
'He always wants to gallop.'

The root **key'k** 'move' is very neutral in meaning. The derivational prefix **qqu-** indicates the verb's activity involves galloping. This creates the stem **qqukey'k** 'to move by galloping'. The desiderative suffix **-'ipéec** indicates that the action is something that is desired. The verb has been nominalized with the active participle **-t** because the desiderative is actually a noun suffix. The suffix **-wii** verbalizes the stem **qqukey'kt'ipeec**. The resulting verb takes aspect-tense inflection and person agreement morphology. We have the complete meaning 'He always wants to gallop' (what one might say of a horse that has a lot of spirit).

I will now describe in detail the derivational aspects of the verb, beginning with verb roots. The roots tend to have neutral meanings, which are given further specification with the addition of derivational prefixes. The vast majority of verb stems contain at least one derivational prefix in addition to the root. Together they provide the verb's basic meaning. (331) illustrates these components of the stem. The derivational prefix position can contain more than one such affix.

(331)
Inflec...–[Caus. [[Adv. Pref. [Root] Adv. Directional]] ONLY] Deverbal] – ...*Inflec.*

The discussion will continue with the derivational directional suffixes, the causative, and deverbal morphology.

2.3.4.1. Verb roots

There is a rough correspondence between the simplicity of a verb root's phonological nature and its semantic denotation, in that simpler roots tend to have simpler meanings. Phonological characteristics of verb roots include stem type (C-stem or S-stem), the potential for insertion of epenthetic vowels, the inclusion of a stem formative, and accent.

A verb root in Nez Perce can have a very general meaning. When such a root occurs without the addition of derivational morphology, context determines which meaning is intended. A classic example of this kind of root is the verb **kuu** 'do, go'. In (332), it is purely the syntax that determines which meaning is appropriate (**kuu** will be glossed as 'do').

(332) a. **mànáa kúuse**
kuu-se
what do-INC
'What are you doing?'

b. **mípx kúuse**
mi-px kuu-se
where-to do-INC
'Where are you going?'

Here, **kuu** appears with only aspect/tense morphology. The syntax determines which meaning of the verb is intended.

The root **kuu** also occurs with derivational prefixes and suffixes that give the resulting stem a more specific meaning.

(333) a. **hìwyéekusìx**
hii-wyée-kuu-síix
3-successively-go-INC.PL
'they move a little at a time'

b. **kùtet'esíix**
kuu-tet'ee-síix
go-about.to-INC.PL
'we are about to go'

Derivational prefixes provide information about manner, location, direction, and instrumentality. The prefix **wyee-** 'successively' (333a) and the inceptive reading **-tet'ee** (333b) are examples. I will return below to the discussion of derivation with prefixes (§2.3.4.2) and suffixes (§2.3.4.3).

The examples in (334) show that there exist nearly all the potential forms of one and two syllable roots, factoring in vowel length contrasts, plus many trisyllabic roots. Some of these roots may have at one time been the products of compounding or some other process of derivation, but none of those shown here are presently analyzable in this way.

(334)

Pattern	Example	
CV	**hi**	'to say'
CVV	**kuu**	'to do, go'
CCC	**'np**	'to take'
CVC	**'ac**	'to enter'
CVVC	**huup**	'to fall'
CVCC	**qick**	'to grab, catch'
CVVCC	**ciilp**	'to encircle'
CVCVV	**hanii**	'to make'
CVVCV	**tiim'e**	'to write'
CVVCVV	**suulii**	'to bend'

CVCVC	**pa'am**	'to lose flavor'
CVCVVC	**teqiik**	'to descend'
CVVCVC	**saal'ay**	'to be fat, soft'
CVVCVVC	**ceepeew'**	'to pick lice'
CVCVCC	**ceyeyp**	'to itch'
CVCCV	**lahsa**	'to go up'
CVCCVV	**c'illii**	'to fall down dead'
CVVCCV	**cuukwe**	'to know'
CVCCVC	**cickup**	'to be alarmed'
CVCCVVC	**cicwaay**	'to be surprised'
CVCVCVV	**suk'ulii**	'to starve'
CVCVVCV	**luquuke**	'to be freezing'
CVCVVCVV	**capiitii**	'to make insulting gesture'
CVCVCCVC	**hayaytam**	'to make a war cry'

Additional trisyllabic root types exist, but I am unaware of non-compound roots with four or more syllables.

In addition to the examples in (334) which are fully syllabified, there are many roots which include unsyllabified consonants (335).

(335)

Pattern	Example	
CCVV	**'nii**	'to give'
CCVVC	**ckáaw**	'to fear'
CCC	**'np**	'to take'
CCCVV	**cklii**	'to return'
CCVVCVV	**tmaanii**	'to pick berries'
CCVCV	**cceqe**	'to be fascinated by'

When these roots are inflected, the vowels of the attached morphology may syllabify the consonants in the root. This is seen in (336a) for the CCC example 'to take'. The root is

realized without vowels because the prefix's vowel and the suffix's vowel sufficiently syllabify the root's consonants.

(336) a. **pée'npù'**
pée-'np-ú'
3ON3-give-IRR
'He will take it.'

b. **'ìníp̓x**
'np-x
take-IMP
'Take!'

In (336b), the vowel **i** is epenthesized in two places. The epenthesis of **i** in this word is entirely predictable.

The monosyllabic verb roots tend to have the most abstract definitions. The more phonologically complex a root is, the more likely it will have a more specific sense, although there are trisyllabic roots with quite general denotations. In some languages, a root's phonological form is highly restricted. For example, it is well known that Arabic roots are typically tri-consonantal. If Nez Perce has restrictions on verb root form it extends only to the level of a restriction against roots of more than three syllables and a near proscription against light roots. **hi** 'to speak' and **'i** 'to lie down' are the only **CV** (short vowel) roots. By contrast, there are many roots that consist of a single heavy syllable: CVVC, CVV, or CVC (CVC is heavy unless it is word final (§2.1.3). There is a wide variety of roots with greater weights and complexities.

Reduplicated roots are not particularly plentiful. All the examples that I have found are represented in (337). Some of them involve only initial CV reduplication. While it is perhaps not surprising that many of the reduplicated roots denote sounds, it is by no means the case that all verbs for sounds involve reduplication.

(337)

Pattern	Example	
CV.CV	**qeqeewi**	'to be drunk'
	qoqoop	'to eat dreaming'
	teet'e	'to stretch'
	wiwi	'to fall'
CVC.CVC	**cilcil**	'to trot'
	cewcew	'to whisper'
	kiwkiw	'to tap, pound'
	paspas	'to make riffles'
	paspasii	'to be rancid'
	q'ulq'ul	'to become dark'
	tex̂teqet	'to worry'
	wix̂wiq	'to argue, dissent'
CVVC.CVC	**muułmuł**	'to bubble, sizzle'
CVCV.CVCV	**wiy'uwiy'u**	'to be puzzled'
	'ox̂o'ox̂a	'to cough'

In some languages, reduplicated roots indicate repeated or distributive actions. Except for a few examples such as **cilcil** 'trot', there is no such correlation in Nez Perce.

Stem class is an important phonological trait that must be learned with each root. As described above in the discussion of aspectual inflection (§2.3.4.1.1), stems belong either to the S-class (338) or C-class (339).

(338)

	S-class stem		Incompletive	Perfective
a.	**hip**	'to eat'	**hìpíse**	**hípe**
b.	**hanii**	'to make'	**hàníisa**	**haníiya**
c.	**wéece**	'to dance'	**wéecèse**	**wéecèye**

(339)	C-class stem		Incompletive	Perfective
a.	**hek**	'to see'	**hèkíce**	**héxne**
b.	**páay**	'to arrive'	**páayce**	**páayne**
c.	**tíim'e**	'to write'	**tíim'ècе**	**tíim'ène**

There are a few bound roots which Aoki (1994) lists as being without a basic stem class. These roots are never found without derivational prefixes. Since stem class can change under prefixal derivation, it is impossible to tell reliably which stem class these bound roots belong to. Aside from such cases, stem class is readily identifiable and learnable, since all aspects except the habitual reflect stem class.

Rude (1994), in a partial list of verb root patterns, observes that roots which end in a diphthong all belong to the C-class. He describes the C- and S- classes as roots that "end in **n** and those that do not".[20] This hypothesis successfully captures the observation that a large set of the aspect-tense markers begin with **n** for the C-class stems (see §2.3.4.1.1). Instead of the underlying forms of the C-stems represented in (339) for **hek** 'to see', **paay** 'to arrive', and **tím'e** 'to write', following Rude's suggestion we would have "**n**-final stems": **hekn, paayn, tim'en**. In support of this view, there are a few roots that clearly do end in **n** (e.g., **qa'an** 'to respect' and **qa'ánce** 'I respect'), and these roots are C-stems. However, there are difficult challenges for the view that says that all C-class stems end in **n**.

First of all, this approach implies the existence of a rule that converts a series of **ns** to **c**. One of the primary advantages of proposing that the C-stems end underlyingly in **n** is that it would obviate the need for the two sets of imperfective suffixes. There would be just the one set beginning with **s**. In the case of the C-stems, the **c** of this suffix series would be produced from a combination of **ns**, as represented in this hypothetical example: **hekin-se → hekice**. Although the change of **s** to **c** following **n** does not seem unnatural cross-linguistically, and while the sequence **ns** is extremely rare in Nez Perce, I have found no actual examples where an alternation of **s → c / n __** is observable. There are, in fact, at lease two counter-examples (340).

(340)	a.	**qìnsqíns**	b.	**qà'ànsímay**
				qa'an-simay
				respect-one.without
		'wirey'		'ingrate'

Neither the form ***qicqíc** or ***qa'acímay** is produced, and these forms would be expected if there were a productive **ns/c** alternation.

A second problem with Rude's suggestion is that **n** would have to delete upon the suffixation of the present habitual **-teetu** to the C-class stems. C-stems are identical to S-stems in the present habitual.

---

[20] Rude's unpublished list was never meant to be a definitive description of Nez Perce verb roots. I mention it here because it illustrates an interesting hypothesis about the nature of these verb roots.

(341) C-Stem

a.	**'èekíce**	b.	**'èektéetu**
	'e-hek-cee		**'e-hek-teetu**
	3OB-see-INC		3OB-see-HAB
	'I see it'		'I always look at it'

(342) S-Stem

a.	**'èepíse**	b.	**'èeptéetu**
	'e-hip-cee		**'e-hip-teetu**
	3OB-eat-INC		3OB-eat-HAB
	'I eat it'		'I always eat it'

If there were an **n** that did not delete, we would expect ***'eexntéetu** for (341b).

However, deletion of **n** before **t** is another unestablished alternation for Nez Perce.

While there does seem to be some inter-speaker variation allowing the deletion of **n** before a stop or **l**, as we see in (343), this deletion is not regular at all across speakers, whereas the C-class/ S-class morphology is completely regular.

(343)	a.	**pàtápa**	or	**pàtánpa**	
		patan-pe		**patan-pe**	
		brush-LOC		brush-LOC	'in the brush'
	b.	**pàtálaykin**	or	**pàtánlàykin**	
		patan-laykin		**patan-laykin**	
		brush-near		brush-near	'near the brush'

There following examples of an **nt** sequence do not involve loss of the **n** at all (344).

(344)	a.	**sàq'àntáayx̂**	b.	**'ìmntásx̂**
		saq'an-táayx̂		**'imn-tasx̂**
		crown.of.head-white.mark		knee-fat
		'bald eagle'		'knee fat'

Thus the evidence for deletion of **n** before **t** is quite poor.

A third problem for Rude's suggestion arises from the few C-Stems that unequivocally do end in **n**. These stems retain this consonant under affixation with both the incompletive and habitual aspect markers.

(345)	a.	**qà'ánce**	b.	**qà'ántàto**
		qa'án-cee		**qa'án-teetu**
		respect-INC		respect-HAB
		'I respect'		'I always respect'

This is in contrast to other C-class stems.

	a.	**'èekíce**	b.	**'èektéetu**
		'e-hek-cee		**'e-hek-teetu**
		3OB-see-INC		3OB-see-HAB
		'I see it'		'I always look at it'

If we suppose that roots such as **qa'an** end in **nn**, this creates the problem of arguing for the existence of root final geminate **n**'s. Non-derived geminates appear otherwise not to exist, and there are certainly no other examples of stem final geminates other than this example of proposed **nn**.

Evidence that diachronically the C-stems developed from verb roots that ended in **n** is seen in the fact that all stems that actually end in **n** belong to the C-stem class. Another fact in favor of this diachronic analysis of C-stems is the fact that **n** is the characteristic consonant of so many of the types of aspect for C-stems. However, at this point in the language's development, Nez Perce verb stem's are better analyzed as

belonging to two essentially arbitrary classes. The C-stem class happens to take a set of aspectual markers that begin either in **c**, in **n**, or in Ø.

This analysis is reminiscent of Maori verbs, which end in vowels in their uninflected forms and take passive suffixes that begin in different consonants. When considered by themselves, examples such as **awhi / awhitia** 'embrace' and **hopu / hopukia** 'catch' motivate a rule of word final consonant deletion along with affixation of passive **-ia**. However, Hale (1973) argues that while a Proto-Polynesian rule of final consonant deletion did exist, Maori has reanalyzed the situation by placing the verbs in different classes that take different suffixes beginning with the different consonants.

In addition to the C/S stem contrast, there are other characteristics of roots which have their origins in fossilized morphology. One such example is the set of roots that begin with what appears to have been a prefix **'i-** or simply **'-** with epenthesis of the **i**.

(346)	**'pew'i**	'to look for'
	'nii	'to give'
	'nik	'to put back, putting down'
	'sep	'to pack on back'
	'yaq	'to find'
	'np	'to take'

This may have once been a derivational prefix, perhaps in some way related to movement or to transitivity. Evidence that the vowel **i** is epenthetic is seen when a prefix is added to these roots.

(347)	a.	**'ìnikíse**	b.	**hì'nikíse**
		'nik-see		**hii-'nik-see**
		3-put.back-INC		3-put.back-INC
		'I am putting down'		'he is putting down'
(348)	a.	**'ìnpíse**	b.	**pée'npse**
		'np-see		**pée-'np-see**
		take-INC		3ON3-take-INC
		'I am taking '		'She's taking it'

Initial consonant clusters are never allowed in Nez Perce; epenthesis always breaks them up.

An additional kind of epenthesis exists which regularly affects verb roots, but in this case it is not primarily motivated by the need to break up a consonant cluster. The real motivation is to form a better locus for main stress. This kind of epenthesis takes place with unaccented verb roots in the incompletive singular present. When these verbs are inflected with the incompletive singular present, they epenthesize short **i** between the stem and the aspect suffix. Because it is so regular and because the Incompletive singular present is the form most often used in citation, it can appear as if unaccented verbs actually end in short **i**. Aoki (1994) lists these roots in his dictionary with a final short **i** (for example **hipí** 'to eat'). However, upon broader consideration, the epenthetic nature of these vowels becomes clear.

Unaccented roots allow stress to shift rightwards to the following aspect-tense suffix. When unaccented verbs are inflected in the incompletive, short **i** appears at the end of the stem, as in (349)-(350).

(349) a. **hìpíse**
hip-see
eat-INC
'I eat'

b. **hìpsáaqa**
hip-saaqa
eat-INC.REC
'I recently was eating'

(350) a. **hèkíce**
hek-cee
see-INC
'I see'

b. **hàkcáaqa**
hek-cáaqa
see-INC.REC
'I recently was eating.'

When stress is assigned to the aspect-tense suffix, the epenthetic **i** does not occur (349b), (350b). The fact that epenthesis does not occur with other CV aspect suffixes such as the C-stem perfective **-ne**, shows that this instance of epenthesis is morphologically controlled:

(351) a. **hèkíce**
hek-cee
see-INC
'I see'

b. **héxne**
hek-ne
see-PRF
'I saw'

c. **hàkcáaqa**
hek-cee-qa
see-INC-PST
'I was seeing'

If epenthesis were not morphologically controlled, the form ***hekíne** would be expected (351b).

The link to stress is made more plain when we consider accented stems. An accented verb stem does not allow stress shift and correspondingly epenthesis is never found.

(352) a. **qà'ánca**
qa'án-cee
respect-INC
'I respect'

b. **qà'áncàqa**
qa'án-caaqa
respect-INC.REC
'I recently respected'

In the accented verb **k'ú́smi**, short **i** is part of the verb's underlying representation. Thus it does not alternate in the different inflections. **k'usmi** 'fry' (352) can be compared with **hip** 'eat'(349) and **hek** 'see' (351).

(353)	a.	**k'ú́smìse**		b.	**k'ó́smisàqa**
		k'ú́smi-see			**k'ú́smi-saaqa**
		fry-INC			fry-INC.REC
		'I am frying'			'I was frying'

In an accented verb like 'fry', a stem final short **i** will be invariable, if one exists.

The examples in (354)-(355) further illustrate these contrasts. First for C-stem verbs, there is the unaccented **hek** 'see' compared to the accented root **heyéeq** 'be hungry'.

(354)	a.	**hèkíce**	b.	**hàkcáaqa**	c.	**héxne**
		hek-cee		**hek-caaqa**		**hek-ne**
		see-INC		see-INC.REC		see-PTV
		'I see'		'I was seeing'		'I saw'
(355)	a.	**hèyéeqce**	b.	**hàyáaqcaqa**	c.	**hèyéeẑne**
		heyéeq-cee		**heyéeq-caaqa**		**heyéeq-ne**
		be.hungry-INC		be.hungry-INC.REC		be.hungry-PTV
		'I am hungry'		'I was getting hungry'		'I got hungry'

The stem final short **i** does not appear in any of the three aspect-tense inflections of the accented verb, and only in the incompletive present of the unaccented verb. We see the same contrast between unaccented (356) and accented (357) S-stems.

(356)	a.	**hìpíse** **hip-see** eat-INC 'I eat'	b.	**hìpsáaqa** **hip-saaqa** eat-INC.REC 'I was eating'	c.	**hípe** **hip-e** eat-PTV 'I ate'
(357)	a.[21]	**téemèkse** **téemek-see** roast-INC 'I roast'	b.	**táamàksàqa** **téemek-saaqa** roast-INC.REC 'I was roasting'	c.	**téemèke** **téemek-e** roast-PTV 'I roasted'

The fact that this stem final short vowel exists only in one kind of form argues strongly that it is epenthetic. Only verbs with stress shift have this alternation.

With the C-stems, it is the case that all unaccented stems end in a consonant and undergo epenthesis.

(358) <u>Unaccented C-stems</u>:

hek	'see'	**hèkíce**	'I see'
tu'p	'mow grass'	**tù'píce**	'I mow grass'
list'eq	'be stuck'	**lìst'eqíce**	'I'm stuck'

The status of the verb **hi** 'to say' is unclear. Since it acts like any other C-class stem, this implies that the underlying form of this verb is merely **h**. This would be the only root in the language consisting of a single consonant. There are inflections of this verb that lack any phonological remnant of the root.

(359) **péece**
pee-h-cee
3ON3-say-INC
'he is telling him'

---

[21] The verb **téemek** means 'to roast underground', as is done with camas bulbs.

A C-stem ending in long **ii** or any other vowel is always an accented stem.

(360) Accented C-stems ending in **ii** or another long vowel:

cikilíi	'return'	**cìklíice**	'I return'
cuq'úulii	'turn around'	**cùq'úulìice**	'I turn around'
timnóo	'go berrying'	**tìmnóoce**	'I go berrying'
tiqée	'be spread out'	**tiqéece**	'Mine is spread'

Not all C-stems ending in a consonant are unaccented, however (361).

(361) Accented C-stems ending in a consonant:

c'íiq	'talk'	**c'íiqce**	'I talk'
ke'téem	'be hurt'	**kè'téemce**	'I am hurt'
p'éq	'be noon'	**p'éqce**	'I arrived at noon'
tilláap	'be lonesome'	**tìlláapca**	'I am lonesome'

Among S-stems, the picture is a bit more complex. I provide a range of unaccented roots in (362).

(362) Unaccented S-stems ending in a vowel:

kuu	'do'	**kúuse**	'I go'
		kòsáaqa	'I was going'
wic'ee	'become'	**wìc'éese**	'I become'
		wìc'asáaqa	'I was becoming'
yaxsaa	'spill'	**yàxsáasa**	'I spill'
		yàxsasáaqa	'I was spilling'
laq'ii	'ripen'	**làq'íise**	'it ripens'
		hìlàq'isáaqa	'it was ripening'
hinimii	'thunder'	**hìinmíise**	'it thunders'
		hìinmisáaqa	'it was thundering'

(363) Unaccented S-stems ending in a consonant:

hip	'eat'	**hìpíse**	'I eat'
		hìpsáaqa	'I was eating'
'np	'take'	**'ìnpíse**	'I take'
		'ìnpsáaqa	'I was taking'
temik	'bury'	**tèmikíse**	'I bury'
		tàmìksáaqa	'I was burying'

Few unaccented S-stems end in vowels (363), but those that do fail to undergo epenthesis of short **i**. The great majority of unaccented S-stems end in a consonant.

Among accented S-stems, there are some ending in long vowels and some ending in short **i**. Accented C-stems may end in a long vowel, but never in a short vowel of any kind.

(364) Accented S-stems ending in a vowel:

watóo	'wade'
cilúu	'boil'
síisi	'make gravy'
héetewi	'love'
wéwkuni	'meet'

The final short **i** in these verbs never receives stress.

(365)[22] a. **síisise**
síisi-see
make.gravy-INC
'I am making gravy'

b. **síisisàqa**
síisi-saaqa
mk.gravy-INC.REC
'I was making gravy'

c. **síisìye**
síisi-e
mk.gravy-PTV
'I made gravy'

(See also the examples of **k'úsmi** 'fry' in (353) above.)

Verb roots can be compounded just as nouns can be. This kind of derivation plays a minor role in Nez Perce. By far, the greater part of verb vocabulary building is accomplished through affixation of derivational prefixes and suffixes. Two examples of root compounds are given in (366), (367).

(366) a. **péhùxelèlklìisìx**
pée-huuxele-lklii-síix
3ON3-stand-go.around-INC.PL
'we stand around something'

b. **húuxecìx**
húuxe-ciix
stand-INC.PL
'we are standing'

c. **lìklíice**
lklii-cee
go.around-INC
'I go around'

(367) a. **hàhátyà'lasàca**
hii-háatya-'lese-cee
3-blow-make.noise-INC
'the wind is making noise'

b. **hàhátyàca**[23]
hii-háatya-cee
3-blow-INC
'it is windy'

c. **'ìléesèce**
'léese-cee
make.noise-INC
'I am making noise'

---

[22] The verb **síisi** literally means to make **siis** 'mush, gravy, thick stew'

[23] When underlying **i** is separated from a following stressed vowel by **h**, then the vowel that is realized is a copy of the stressed vowel.

Rarely, a verb is compounded with a noun. One example is given in (368). Even in this case, compounding is not productive.

(368) a. **hìyúumtemèkse**
hiyúum-téemek-see
bear-roast-INC
'I am roasting bear meat'

b. **hìyúum**
'bear'

c. **téemèkse**
téemek-see
roast-INC
'I roast'

The word used for 'bear' here is almost never used as a free form in syntax. There are almost no other nouns that can be similarly compounded, so it cannot be claimed that Nez Perce has noun incorporation.

2.3.4.2. Derivational prefixes

Aoki (1970:84-6) lists over one hundred of what he calls adverbial prefixes. Some are highly productive and can be used with practically any existing root or stem to form a new stem. Others have become quite archaic, and occur in only a very few forms. This is the most important aspect of verb stem derivation.

Semantically, these prefixes express notions of manner and instrument, as well as other meanings such as time and situation.

(369) a. **'psqí-** 'bipedally'
b. **cepée-** 'by pressure'
c. **cúu-** 'with pointed instrument'
d. **tukéep-** 'by hand', 'involving the hand'

e.	**tulée-**	'by foot', 'involving the foot'
f.	**téew-**	'at night', 'from sleepiness'
g.	**tew-**	'involving snow or ice'

Prefixes like **tukéep-** can be used to indicate that the hand is used to do the action or only that the hand is somehow affected or involved. I will simply use the term "derivational prefix" to refer to this set of affixes.

Although they are semantically diverse, these derivational prefixes share certain characteristics. Morphologically, they come inside of the causative and adjacent to the verb root. They also have similar characteristics of prosody.

(370)
Inflec...–[Caus. [[**Derivational** [Root] Deriv. suf.]] ONLY] Deverbal] – ...*Inflec.*

When these prefixes combine with a verb stem, the semantics of the resulting word is unpredictable in the same way that the meanings of compounds are unpredictable in English. I argue that it is necessary to list each derived verb stem in the lexicon.

Derivational prefixes are an important feature of the related Sahaptin language as well. Since the members of this class of affixes are too numerous to describe individually, I will set forth their most important features here.

Most Nez Perce verb roots have at least several derived stems that have been formed by adding one or more derivational prefixes. There are some roots that do not occur without at least one derivational prefix or another. For example, **sitk** 'to wind around, tie, lace', only occurs in combination with one or more derivational prefixes. In

combination with those prefixes, several different specific meanings are produced, all related to the concept of 'tying' or 'winding around'. Consider the example in (371).

(371) **péetèmesìtke**
pée-temée-sitk-e
3ON3- by.throwing-wind.around-PTV
'he lassoed it'

The derivational prefix **temée-** 'by throwing' combines with **sitk** to produce the stem **temées itk** 'to lasso'. In (372), the derivational prefix **súuye-** 'by pushing' combines with **sitk** to produce the stem **súuyesitk** 'tighten' as of a cinch with a buckle.

(372) **súuyesìtkse**
súuye-sitk-see
by.pushing-wind.around-INC
'I tighten'

An additional example is the deverbal noun in (373), derived with the prefix **tulée-** 'foot' and the deverbal instrumental suffix (VINST).

(373) **tòlàasìtkó's**
tulee-sitk-o's
foot-wind.around-VINST
'stirrup'

The result of the derivation is the noun 'stirrup', something that winds around or encircles the foot.

There are some roots that do not have any forms that exist in combination with a derivational prefix, and there are some roots which have only one or two such derived

forms. The root **heetewi** 'to like, love, admire', has no derivational prefixes listed with it in Aoki 1994; the root **sk'eey'k** 'to scout, reconnoiter, look around' has just one.

(374) **'èhéetewìse**
'e-heetewi-see
3OB-love-INC
'I love her'

(375) a. **sìk'éey'kse**
sk'eey'k-see
scout-INC
'I scout'

b. **wèyèsk'éey'kse**
weye-sk'éey'k-se
in.passing-scout-INC
'I scout as I pass along'

Given the great productivity of the derivational prefixation system, these roots might have been expected to have produced more derived forms, but the degree of derivational productivity is ultimately unpredictable. In general, the more neutral a root's core meaning, the more forms that are found to be derived from it. There are a number of roots with extremely general meanings such as **liik** 'to move', **leht** 'to be out or move out', and **ke'ey** 'to move', and these roots each have scores of daughter forms.

2.3.4.2.1. Semantic effects of prefixation

Manner, place, and instrumental meanings are conveyed by derivational prefixes. Note how the manner of breaking is given in the examples in (376).

(376) a. **k'úupce**
k'úup-cee
break-INC
'I break'

b. **tùléek'ùupce**
tulée-k'úup-cee
with.foot.break- INC
'I kick and break (a stick)'

c. **wàtk'óopsa**
wat-k'úup-see
step.on-break- INC
'I step on and break'

In these examples, the meaning follows rather straightforwardly from the constituent parts.

The semantic results of combining roots and derivational prefixes does not always follow directly from the morphological components. The meaning of a new form is ultimately unpredictable in the same way that the meaning of a compound in English is unpredictable. In the compound *nude painter*, the meaning could be 'one who paints nudes' or 'one who paints in the nude'. In the following examples, compare the prefixes **cuu-** 'with a pointed object' and **tqe-** 'quick', as they are combined with the roots **talq** 'stop' (378) and **pn'ii** 'emerge, come out of' (377).

(377) a. **pìn'ǐise**
pn'ǐi-see
emerge-INC
'I come out (of the forest)'

b. **cúupn'ìise**
cúu-pn'ǐi-see
with.pointed.inst-emerge-INC
'I push through'
(as of the lacing pins of a tipi)

c. **hìtqèpn'ǐise**
hii-tqe-pn'ǐi-see
3-quick-emerge-INC
'they emerge quickly'

(378) a. **tàlqíca**
talq-cee
stop-INC
'I stop'

b. **cóotalqsa**
cúu-talq-see
with.pointed.inst-stop-INC
'I stop with a pole'

c. **tàqatálqsa**
tqe-talq-see
quickly-stop-INC
'I make a quick stop' or 'I quickly lose strength as I go'

While the meaning of each derived stem is clearly related to the meanings of the root and the prefix, it is by no means straightforward what that meaning must be. We can imagine other possible meanings for the derived forms. While the meaning of (377c) is what might be expected, the definition of (377b) might have been instead 'I hold in place with a needle'. There are two different meanings for (378c).

A new stem produced through derivational prefixation can be further modified with an additional derivational prefix.

(379) a. **tìmíipn'ìse**
timíi-pn'íi-see
with.heart-emerge-INC
'I remember'

b. **wìyéetmìpn'ìse**
wiyée-timíi-pn'íi-see
as.one.goes-with.heart-emerge-INC
'I think as I go along'

In (a), we have the idea of something emerging from one's heart or mind resulting in the meaning 'remember', and in (b) we have the verb describing this activity of remembering as one is going along. Each derivational prefix modifies the meaning of the stem to which it attaches, whether that stem is a monomorphemic root or a complex product of root plus one or more derivational suffixes. The constituency of (379b) is that in (380a) rather than (380b).

(380) a. [Derivational [Derivational + Root]]

b. [[Derivational + Derivational] + Root]

This is expected if each product of an Derivational + Stem combination is a distinct lexical item.

There are fossilized combinations of [Derivational + Derivational] that have idiosyncratic phonology and semantics and together modify a stem. One example is **cúuye-**. The loss of **p** in this environment is completely irregular, and the combination functions as a whole.

(381) **cúuye** 'do quickly/do by hand' < **céep** 'by hand' + **weye** 'quickly'

(382) **'ècúuyek'ìlkse** **pìskísne** (example from Aoki 1994:273)
'e-cúuye-k'ílk-cee **piskis-ne**
3OB-quick.hand-block-INC door-OBJ
'I am shutting the door'

I know of no examples where there is a pair of derivational prefixes that appear to productively combine to modify the meaning of a stem.

Although there are many stems containing two derivational prefixes, only a few contain three.

(383) **tèmènkè'cepéhnèce**
temée-nkée-'céep-léhn-cee
place-by.pulling-load-move.down-INC
'I am lowering you'

I am unaware of any verbs with four or more derivational prefixes, although I know of no reasons other than practical ones for a limitation of the number of derivational prefixes that could be concatenated.

2.3.4.2.2. *Phonological effects of prefixation*

When concatenation of derivational prefix and root creates a new stem, the phonological character of the new stem can be different from the old stem in unpredictable ways. Phonological changes can include changes in stem class, syncope, and accent.

A newly derived verb usually has the same class as the stem it was derived from.

(384)	a.	**páayca**	b.	**tàqapáayca**	c.	**táawpayca**
		paay-cee		**tqe-páay-cee**		**téew-paay-cee**
		arrive-INC		quickly-arrive-INC		at.night-arrive-INC
		'I am arriving'		'I am arriving briefly'		'I arrive at night'

However, this is not always the case. C-stems occasionally produce S-stems. In both (385) and (386), the verbs derived from a C-stem root are S-stems.

(385)	a.	**tìn'kíce**	b.	**'ilíwtìn'kse**	c.	**téextìn'kse**
		tin'uk-cee		**'ilíw-tin'uk-cee**		**téex-tin'uk-see**
		die-INC		fire-die-INC		freeze-die-INC
		'I am dieing'		'I am starving'		'I am freezing'
(386)	a.	**tàlqíca**	b.	**mìstálqsa**	c.	**sìlímtàlqsa**
		talq-cee		**mis-talq-see**		**silím-talq-see**
		stop-INC		hear-stop-INC		look-stop-INC
		'I stop'		'I listen'		'I stare'

In (386), C-stem **talq** 'stop' has only S-stem derived forms. Unexpectedly, there seem to be no clear cases where an S-stem root in combination with an derivational prefix has produced a C-stem verb. The S-class is less morphologically complex and so perhaps it is the unmarked case.

It has already been seen that stem class determines the shape of much of the aspect-tense morphology. Since stem class is unpredictable, it must be listed in the lexicon. It has been shown that for each combination of [Derivational + Stem], both the meaning and the stem class are essentially unpredictable. These facts imply that each derived stem is as a separate item in the lexicon.

I have no good examples of derivational prefixes with dominant vowels. All truly productive prefixes are like the following which have recessive vowels.

(387)	**tqe-**	'quickly'
	nkée-	'by pulling'
	qqú-	'by galloping'
	'psqí-	'on foot'

Aoki (1994) lists some derivational prefixes with dominant vowels, but they are found in only a very few forms. There are no examples that I know of which cause regular vowel harmony alternations. If this is correct, Nez Perce has no prefixes whatsoever that have dominant vowels. Nez Perce may in fact be moving towards a system where only roots cause vowel harmony. For additional discussion see Chapter 3.1.

Accentual alternations are one of the more salient changes brought about through derivational prefixation. Metrically, there are two kinds of prefixes – accented and unaccented. With prefixes, an accented syllable may have a vowel that is either long or short underlyingly, but syllables that are unaccented never have vowels that are underlyingly long. This generalization does not hold for verb roots or for nouns.

Examples of unaccented prefixes include **tqe-** 'quick' and **wat** 'step on, wade'.

(388)	a.	**tàlqíca** **talq-cee** stop-INC 'I stop'		b.	**tàqatálqsa** **teqe-talq-see** quick-stop-INC 'I run and lose strength'
(389)	a.	**k'úupce** **k'úup-cee** break-INC 'I break'		b.	**wàtk'óopsa** **wat-k'úup-see** by.stepping-break- INC 'I step on and break'

Stress remains on the stem rather than moving to the prefix in these examples.

Examples of accented derivational prefixes with a long vowel are **cúu-** 'with a pointed instrument' and **tulée** 'with a foot'. Stress moves to the prefix in these cases.

(390)	a.	**tàlqíca** **talq-cee** stop-INC 'I stop'		b.	**cóotalqsa** **cúu-talq-see** with.pointed.inst-stop-INC 'I stop with a pole'
(391)	a.	**k'uupce** **k'úup-cee** break-INC 'I break'		b.	**tùléek'uupce** **tulée-k'úup-cee** with.foot-break- INC 'I kick and break (a stick)'

Accented prefixes with short vowels include **'líw** 'by fire' and **'psqí** 'bipedally'. In the following examples, the unaccented derivational prefixes **tqe-** 'quick' (392a) and **wat-** 'step, wade' (393a) are contrasted with the accented short vowel prefixes.

(392)	a.	**tèqeke'éykse** **tqe-ke'ey-k-see** quick-move-SF-INC 'I move quickly'		b.	**hì'líwkè'ykse** **hii-'líw-ke'ey-k-see** 3-by.fire-move-SF-INC 'The fire is moving' (e.g., in grass)

c. **'ìpsqíkè'ykse**
'psqí-ke'ey-k-see
bipedally-move-SF-INC
'I walk' [24]

(393) a. **wàtwáayiksa**
wat-wéeyik-see
by.stepping-cross-INC
'I wade across'

b. **'ìpsqíwèyìkse**
'psqí-wéeyik-see
bipedally-cross-INC
'I cross on foot'

A full explanation of the behavior of accent in Nez Perce is an important part of the discussion of the stress system provided in Chapter 4.3.3.

A large number of derivational prefixes begin with consonant clusters that are broken up by epenthesis when they are word initial. Epenthesized forms are commonly observed in verbs with first and second person subjects which are uninflected for person. By contrast, the third person verb affix **hii-** obviates the need for epenthesis by syllabifying the initial consonant.

(394)

	Non-initial form	Word initial form with epenthesis	
a.	**hi-'psqí-**	**'ipsqí-**	'on foot'
b.	**hi-nkée-**	**nikée-**	'pull, by pulling'
c.	**hi-tqe-**	**teqe-**	'quickly'
d.	**hi-qqú-**	**quqú-**	'gallop, while galloping'

Epenthesized vowels are either **i** (394a,b) or a copy of the following vowel (393c,d).

---

[24] This is the appropriate verb for human walking and contrasts with verbs for four-footed walkers and for crawlers.

A number of derivational prefixes consist of simply a consonant cluster, which is interrupted by an epenthetic vowel when the derivational prefix is word initial.

(395)	Non-initial form	Word initial form	
a.	**hi-ws-**	**wis-**	'camp'
b.	**hi-'s-**	**'is-**	'with knife'
c.	**hi-tx-**	**tux-**	'in mud'

In these cases, it is the vowel **i** (most often) or **u** that is epenthesized rather a copy of the first vowel of the stem. There is no way to predict which vowel will be epenthesized, so this must be learned for each morpheme.

Most of the instances of the short vowels **i**, **e**, and **u** in the initial syllable position of derivational prefixes are epenthetic, but there are exceptions:

(396)	Non-initial form	Word initial form	
a.	**hitemee-**	**temée-**	'place'
b.	**hitil-**	**til-**	'in war'
c.	**hitulee-**	**tulée-**	'with the foot'

Since these vowels do not alternate, they do not constitute cases of epenthesis.

2.3.4.3. Derivational suffixes

In contrast to the number of adverbial prefixes, which considerably exceeds 100, there is less than a quarter of that number of derivational suffixes. Nevertheless, these suffixes are an important factor in verb stem formation and have interesting

characteristics of their own. They are frequently found along with derivational prefixes, and like the prefixes, more than one suffix can be attached to the same verb stem. They can be found in alphabetical order in Aoki (1994). Rude (1986) discusses them in relation to their syntactic impact upon grammatical relations.

Semantically, derivational suffixes denote a narrower range of meanings than those covered by the derivational prefixes. Derivational suffixes may add an argument or change the status of existing arguments, making an indirect object or an oblique into a direct object. The suffixes are heavily weighted in terms of movement and direction. They have meanings such as 'away from', 'as object passes by', 'following', 'towards', 'goes away from', 'as object approaches'. There are also more abstract meanings such as 'on behalf of' and 'obstructively'. Almost all of these suffixes can be seen as having some basic directional or movement meaning. The suffix **-uu**, for example has the meaning 'toward' and also the meaning 'on behalf of'. I will suggest that this class of morphemes originated as verbs of motion, and that they were compounded with other verb roots, gradually losing their independent status.

Phonologically, directional suffixes have several interesting characteristics. A suffix's form often depends upon the morphological class of the stem to which it is attached. The directional suffix in turn determines the stem class of the resulting verb. These suffixes also attract stress through the regular rightward principles of the Nez Perce metrical system and through accent. Underlying long vowels are realized with length depending upon whether they have main stress or not. I will describe these characteristics

more fully and then give a set of example suffixes, along with the more salient phonological characteristics.

The members of this class of suffixes share some morphological, phonological, and semantic attributes. They choose the morphological class of the newly formed verb stem; vowel initial suffixes all affix **n** following C-verbs; they have meanings that often have a directional basis. The members of this class that change argument structure by adding an argument or changing which nominal is the direct object are very much like applicatives found in Bantu languages like Chi-Mwiini (Kisseberth and Abasheikh 1977) and Chi-Chewa (Bresnan and Mchombo 1987). However, there are those suffixes that do not change argument structure, so it would not be correct to use the term applicative for all of them.

When a verb contains one or more of the derivational suffixes, its class is determined by the rightmost one, regardless of what class the root belongs to. Included in this generalization is the stem formative **-k** (SF), which converts stems to the S-class. It cannot be predicted which stems or roots take the stem formative. However, the native speaker knows that if a stem ends in **-k**, the verb must be an S-stem. For example, in (397) the verb root **ke'ey** has the very neutral meaning of 'move' and is a C-stem. It takes a wide range of adverbial prefixes to show the kind, place, and purpose of the movement. The combination of the derivational prefix **wis-** 'camp' and **ke'ey** produces the stem **wiske'éy** 'go camping' which does not select the stem formative. The resulting

stem is a C-stem (397a). The combination of the derivational prefix **wisée-** 'stand' and **ke'ey** takes the stem formative, and the result is an S-stem (397b).

(397)	a.	**wìske'éyce**	b.	**wiséekè'ykse**
		wis-ke'ey-cee		**wisée-ke'ey-k-see**
		camp-move-INC		stand-move-SF-INC
		'I go camping'		'I stand up'

The fundamental directional nature of the adverbial suffixes provides a clue to the origin of the stem formative. The allative case marker is **-k** (realized as **-x** word finally), and was discussed under the subject of noun morphology above (§2.3.1.4.2). The translocative which indicates movement away from the speaker also has a **-k** in its different forms (see §2.3.4.1.3). Originally, there may have been a single directional suffix **-k**, and in some stems, it may have indicated or emphasized the directionality of movement in an activity. The meaning of the verb **wiséeke'eyk** in (397b) is 'stand up' (i.e., 'to move into a standing position from a sitting one') not simply 'be in a standing position'. The formative now **-k** is essentially a fossilized element in these stems, and it is not required in all verbs of movement.

In many cases, the class of the stem often determines in part the shape of an adverbial suffix. The form of the suffix is always simplest when attached to an S-stem; this will be the citation form. When attached to a C-class stem, adverbial suffixes often begin with **n**. This follows the pattern of the aspect-tense morphology of C-stems (§2.3.4.1.1).

The shape of an adverbial suffix can also be affected when the stem ends in a vowel. While no verb root and no prefix (adverbial or otherwise) begins with a vowel, several suffixes do. In Nez Perce, vowel hiatus is prohibited. Adjacent identical vowels form a single long vowel. With C-stems **n** is inserted, so hiatus does not obtain. With S-stems, the glide **y** is inserted. Several instances of these changes are given with the examples below. For additional discussion of hiatus, see Chapter 3.2.

Many of the Nez Perce derivational suffixes have underlying long vowels. Many are accented, but not all. This is in contrast to the derivational prefixes which have long vowels only in accented syllables. With the derivational suffixes, the long vowels usually receive main stress, and so they are usually realized with length. Two factors conspire to create this pattern. First, in Nez Perce, syllables with accent attract stress. Second, Nez Perce tries to assign stress as far to the right as possible. If there is an accented syllable in a suffix, it will win out over accented syllables to the right (see Chapter 4.3.3 for additional explanation).

There are cases where a long vowel in a derivational suffix does not receive main stress. If the suffix is unaccented and there is an accented syllable elsewhere in the word, then the suffix will lose the competition for main stress and its long vowel will be short. Also, if there are two accented suffixes, the rightmost one which is not word final receives main stress. Consequently, the vowel in the losing syllable will be realized as short. Several examples of adverbial suffixes are now provided for comparison.

The suffix **-aat** (**-naat** following a C-stem) is glossed 'as object passes by' by Aoki (1994), and it is unaccented. This suffix indicates that the action is done to the object as the object is in motion going by. With a transitive verb, it does not change the argument structure. It specifies the conditions under which the direct object is affected.

(398)	a.	**'è'pt'éese**	b.	**'à'pt'áatse**
		'e-'pt'ee-see		**'e-'pt'ee-aat-see**
		3OB-hit-INC		3OB-hit-as.passes-INC
		'I hit it'		'I hit it as it passes.'

With an intransitive verb, this suffix adds an argument. In (399b), the direct object is third person, and so the verb is marked with **pée-** ('3ON3').

(399)	a.	**hìwehícìx**	b.	**páawàhnàtksìx**
		hii-wehí-ciix		**pée-wehi-naat-k-síix**
		3-bark-INC.PL		3ON3-bark-as.passes-SF-INC.PL
		'they are barking'		'They are barking at it as it goes by'

This suffix is followed by the stem formative **-k**, creating an S-class stem.

The suffix **-áapii** (**-náapii** after a C-class stem) has the meaning 'away from' or 'in an obstructive manner' (glossed 'away'). This suffix has both an accented long vowel **áa** and an unaccented long vowel **ii**. What is special about the long vowel **ii** is that it never has main stress and yet is always realized as long (Nez Perce has a small number of these remarkable vowels, and they will be discussed in Chapter 4.2.3).

(400)	a.	**k'óomàyca**	b.	**'àk'òmaynáapìiksa**
		k'óomay-cee		**'e-k'óomay-náapii-k-see**
		sick-INC		3OB-sick-away-SF-INC
		'I am sick'		'I being sick am kept away from her'

(401) c. **k'òmaynáapìiksa**
k'óomay-náapii-k-see
sick-away-SF-INC
'I, being sick, am kept away (e.g., from work)'

The suffix **-áapii** adds an argument in (400b). Nez Perce verbs are readily detransitivized, and the more abstract the object, the more likely this is to happen (401c). No morphology is added to detransitivize a verb; intransitive marking is simply substituted for transitive morphology.

For a transitive verb, the suffix **-áapii** modifies the manner in which the action is taken, and it also changes the identity of the object. As discussed previously (§2.2.1), direct objects are marked with **-ne** in Nez Perce. By contrast, there is no marking for a syntactic indirect object. If a sentence has an indirect object, then the indirect object is normally marked as the direct object and the semantic direct object is left unmarked or is marked with another case like the instrumental. Nez Perce is strongly disposed towards making human indirect objects and human obliques into syntactic direct objects. Changes of grammatical relations and related morphological alternations are discussed from a Relational Grammar perspective by Rude (1986).

A derivational suffix is usually involved when a shift in argument structure takes place involving an object and another argument such as a semantic indirect object or oblique. We see this in (402) where **-áapii** is suffixed in the second example.

(402) a. **'è'npíse** **nukúne**
'e-'np-see **nukt-ne**
3OB-take-INC meat-OBJ
'I take the meat.'

b. **'à'npáapìiksa** **nukt** **tóonìna**
'e-'np-áapii-k-see **tooni-ne**
3OBJ-take-away-SF-INC meat Tony-OBJ
'I grab away the meat from Tony'[25]

In the first example, **nukt** 'the meat' is the grammatical object. In the second example, where **-áapii** has been suffixed to the verb root, the person who was bereft of the meat, is the grammatical object. The suffix **-áapii** is always followed by the stem formative **-k**, and so verbs derived with it are S-stems.

The suffix **-etwik** (**-netwik** after a C-stem) indicates that the action is taken from behind an object that is in motion away or following the object. It does not change the argument structure.

(403) a. **'è'npíse**
'e-'np-see
3OB-take-INC
'I take it.'

b. **'è'npétwìkce**
'e-'np-etwik-cee
3OB-take-follow-INC
'I inherit it' or 'I overtake it'

(404) a. **'ètìmmíyuce**
'e-tìmmíyu-cee
3OB-consider-INC
'I am consider it'

b. **'ètìmmíyunètwìkce**
'e-tìmmíyu-netwik-cee
3OB-consider-follow-INC
'I consider it as it goes away'

---

[25] One consultant says that this is what you might say when you get the last piece of meat on the table, which Tony wanted.

The final **k** of **-etwik** cannot be segmented separately as the stem formative **-k** or it would violate the generalization that the stem formative always converts verb stems to the S-class. The suffix **-etwik** creates C-class stems.

The suffix **-qaw** (**-naqaw** after a C-stem) may be glossed 'straight through' or 'in passing'.

(405)	a.	**'è'npíse**	b.	**'à'npqáwca**
		'e-'np-see		**'e-'np-qaw-cee**
		3OB-take-INC		3OB-take-in.passing-INC
		'I take it'		'I take it in passing'

C-class stems are formed by this unaccented suffix.

The suffix **-tee** indicates that the subject goes away or goes in motion to perform the action. The form of this suffix is invariable with respect to the stem class that it attaches to, and it does not affect argument structure.

(406)	a.	**'è'npíse**	b.	**'è'nptéece**
		'e-'np-see		**'e-'np-tee-cee**
		3OB-take-INC		3OBJ-take-go.away-INC
		'I take it'		'I go get it'
(407)	a.	**tàlapóosaca**	b.	**tàlapóosatàca**
		talapóosa-cee		**talapóosa-tee-cee**
		worship-INC		worship-go.away-INC
		'I am worshipping'		'I'm going to worship' or
				'I'm going to church/longhouse'

Some modern speakers translate the English 'go' future by using this suffix. C-class stems are formed by this unaccented suffix.

The unaccented suffix **-tooq** indicates that the subject returns back to some original location. It can also be used to emphasize the meaning of a verb that already includes the idea of returning. In (409b) this suffix implies that the returning is to home.

(408)	a.	**'è'npíse**	b.	**'à'nptóoqsa**
		'e-'np-see		**'e-'np-tooq-see**
		3OB-take-INC		3OB-take-back-INC
		'I take it'		'I take it back'
(409)	a.	**cìklíice**	b.	**cìklíitòqsa**
		cklíi-cee		**cklíi-tooq-see**
		return-INC		return-back-INC
		'I am returning'		'I returning back (home)'

This suffix's form does not change according to the stem to which it is attached, but its long vowel is not accented, and thus it has a short vowel in (b), because the verb root **cklíi** is accented. S-class stems are formed with **-tooq**.

The accented suffix **-úu** (**-núu** after a C-class stem) has the two meanings 'toward' and 'on behalf of'. This suffix changes the argument structures of verbs. It makes transitivize intransitive verbs and changes the kind of object for transitive verbs, making a goal the direct object. The verb root **weeyik** 'to cross' in (410a) is very general in meaning, indicating that the subject goes across either a river or valley.

(410)	a.	**hìwéeyìkse**	b.	**pèwèyikúuse**
		hii-wéeyik-see		**pée-wéeyik-úu-see**
		3-cross-INC		3ON3-cross-toward-INC
		'he is crossing'		'he is crossing toward her'

With **-uu**, the verb **weeyik** becomes transitive; the individual being 'crossed-towards' is the object. We know this because the usually intransitive verb **wéeyik** is transitively marked with **pée-** '3ON3'. If there is a group of people being crossed towards, the verb has plural object agreement (411).

(411) **pènèswèyikúuse**
pée-nées-weeyik-úu-see
3ON3-PLOB-cross-toward-INC
'he is crossing toward them'

With a transitive verb, the suffix **-úu** changes which nominal is the direct object.

(412) a. **'è'npíse nàco'óx̂na**
'e-'np-see naco'x̂-ne
3OB-take-INC fish-OBJ
'I take the salmon'

b. **'è'npúuse nacó'x̂**
'e-'np-úu-see naco'x̂
3OB-take-toward-INC salmon
'I take the salmon on his behalf'

The salmon is the grammatical subject in (412a) and is marked with the object case suffix **-ne**. In (413b), where the verb stem has the suffix, **-úu** the grammatical subject is the person for whom I am taking the salmon.

The suffix **-úukini** (**-núukini** after a C-stem) signifies that the event takes place 'as the object approaches'. It appears to be historically related to the suffix **-úu** 'towards', although the **kini** portion of this suffix is not segmentable. The verb **'np** 'take' plus **-uukini** produces the meaning 'receive' (413b).

(413)	a.	**'è'npíse**	b.	**'è'npúukìnise**
		'e-'np-see		**'e-'np-úukini-see**
		3OB-take-INC		3OB-take-approaching-INC
		'I take it'		'I receive it'
(414)	a.	**'àmc'íiysa**	b.	**'àmc'iyóokìnisa**
		'e-mc'ii-see		**'e-mc'ii-úukini-see**
		3OB-hear-INC		3OB-hear-approaching-INC
		'I hear it'		'I hear it approaching'

(414b) is what you would say if you heard a train as it came towards you. This suffix does not change the argument structure of the verb.

The suffix **-lamq** 'do again' produces a C-class stem. It is perhaps the member of this class of suffixes that is the least directional in meaning. Only in an exceedingly abstract sense as in 'go back again' or 'return' could it be construed to have a directional sense.

(415)	a.	**hàníilàmqsa**	b.	**'ìnplámqsa**
		hanii-lamq-see		**'np-lamq-see**
		make-do.again-INC		take-do.again-INC
		'I make it over'		'I repeat (an act)'

This suffix can also act as a verb root. When it does, it takes a derivational prefix.

(416)	a.	**tàqalámqsa**	b.	**wàlámqca**
		tqe-lamq-see		**we-lamq-cee**
		quick-do.again-INC		words-do.again-INC
		'I get sick again'		'I am repeating (what I said)'

In these cases, it will be either a C-stem or an S-stem depending upon the adverbial prefix. The morpheme **-lamq** does not occur unless it is affixed with a verb root or a derivational prefix.

The fact that **-lamq** can be a stem points to a likely origin of this class of affixes. They appear to have been originally independent verbs of motion that were then compounded with other verb roots to generate a complex concept of activity while in motion. 'Think' plus 'move-away' becomes 'think-as-you-go' (i.e., while you are riding your horse or driving your car). Eventually, these compounded motion verbs could have become a class of suffixes. The fact that these suffixes define the stem class for the entire word follows from this explanation, because each such suffix would originally have been an independent verb with a stem class of its own.

The benefactive **-ee'y** does not have a directional meaning. Nevertheless, this suffix fits in with the other derivational affixes in its phonological behavior and in its morphological position in the verb. It is also consistent with the derivational suffixes in that it changes a verb's argument structure. Nez Perce has a benefactive suffix **-'áyn** (§2.2.1 and §2.3.1.4.2) that can be used for benefactives. However, sentences with human indirect objects almost never use this case marker. Instead, the verb has the benefactive suffix, and the human indirect object is realized as a grammatical direct object with the objective case **-ne**. The semantic direct object is realized without case marking.

The benefactive suffix **-ee'y** is unaccented and is preceded by **n** in the C-stems and by **y** in the S-stems ending in a vowel.

(417) a. **'èhitéemece tíim'esne**
'e-hitéeme-cee tíim'es-ne
3OB-read-INC book-OBJ
'I'm reading the book'

b. **'èhitéemenèy'se síisèlne tíim'es**
'e-hitéeme-neey'-see síisel-ne
3OB-read-BNF-INC Cecil-OBJ book
'I'm reading Cecil the book'

(418) a. **'àaníisa 'iníitne**
'e-haníi-see 'iníit-ne
3OB-make-INC house-OBJ
'I'm making the house'

b. **'àaniyáay'sa mársìna 'iníit**
'e-hanii-eéy'-see marsi-ne
3OB-make-BNF-INC Marcie-OBJ house
'I'm making Marcie the house'

With the perfective and future aspect, the form becomes **-e'ny**.

(419) a. **hàniyà'nyó'**
haníi-e'ny-u'
make-BNF-IRR
'I will make for her'

b. **hàniyáay'sa**
hanii-eéy'-see
make-BNF-INC
'I make for him'

The verb can be realized without transitive agreement morphology when it has undergone optional antipassivization. This explains why the examples in (419) lack **'e-**.

Detransitivization is discussed below in §2.3.4.6.

2.3.4.4. The causative

The causative is relatively straightforward (see also descriptions in Aoki 1970:90-3 and Rude 1985:43-4). Either **sepée-** (420) 'singular object of causation' or **séep-** (421) 'plural object of causation' affix to the verb stem composed of the verb root and any adverbial prefixes. [26]

(420) a. **'èq'uyímse tèwlikítne**
'e-q'uyim-see tewliikt-ne
3OB-climb-INC tree
'I am climbing the tree'

b. **'èsepéeq'uyìmse tèwlíikt**
'e-sepée-q'uyim-see
3OB-CAUS-climb-INC tree
'I make him climb a tree'

(421) a. **tìtwatíiyó'**
titwatii-ú'
tell.story-IRR
'I will tell a story'

b. **'ànàssàptiwatíiyò'**
'e-nées-séep-titwatii-ú'
3OB-PLOB-CAUS.PL-tell.story-IRR
'I will make them tell a story.'

The plural causative **seep-** seems to have fallen into disuse among speakers now living. They use the singular **sepée-** is for both singular and plural causees.

With respect to transitivity, the causee is a direct object. The verb agrees with the causee which has objective case. However, if the original object is also expressed in the sentence, it will also have object case. In (422), the complex NP **síisel kaa mársina** is inflected with object case **-ne** on the last nominal in the phrase. The verb **twíik** 'accompany' has plural object agreement because the object NP is plural.

---

[26] There are two derivational prefixes **cepee-** and **ceep-** 'to do by pressure' which are clearly historically related to the causative. These prefixes are not found in productive formation of causatives.

(422) **'èneestiwìkce** **siisel** **káa** **mársìna**
'e-nees-twiik-cee **marsi-ne**
3OB-PLOB-accompany-INC Cecil and Marcie-OBJ
'I accompany Cecil and Marcie'

In (423), plural agreement remains because the causee is plural. The original object is singular. However, both the original object and the causee are object marked. Speakers prefer to have the causee NP precede the verb.

(423) **siisel** **káa** **mársìna** **'enéesepètwìkce** **céekìne**
mársi-ne **'e-nees-sepée-twiik-cee**
Cecil and Marcie-OBJ 3OB-PLOB-CAUS-accompany-INC Jackie-OBJ
'I make Cecil and Marcie accompany Jackie.'

In the third example, it is the causee that is singular and the original object, the object of the action of accompanying, that is plural. The verb lacks plural object agreement.

(424) **mársìna** **'èsepéetwìkce** **géyb** **káa** **céekìne**
mársi-ne **'e-sepée-twiik-cee** **céeki-ne**
Marcie-OBJ 3OB-CAUS- follow-INC Gabe and Jackie-OBJ
'I make Marcie follow Gabe and Jackie.'

The prefix **'e-** in these sentences indicates a third person non-subject argument. In transitive clauses (see §2.3.4.2.3.1), this affix is used only when the subject is first or second person. If the subject were third person, the agreement prefix would be **hii-** or **pee-**. This shows that in both cases the grammatical subject is first person.

The scope of causation is over the entire stem formed by the root plus adverbial prefixes and adverbial suffixes.

(425) *Inflection* –[CAUSATIVE – [Derivational ...[ROOT] ...Derivational]]– *Inflection*
- Stem -

In the following examples, longer and longer verb stems are presented over which the causative has taken scope.

(426) a. **wéeyìkse**
wéeyik-see
cross-INC
'I am crossing'

b. **'èsepúuyìkse** **sik'éemne**
'e-sepée-wéeyik-see **sik'eem-ne**
3OB-CAUS-cross-INC horse-OBJ
'I am making the horse cross'

c. **hìqqúwèyikse** **sík'em**
hii-qqú-wéeyik-see
3-gallop-cross-INC
'The horse is galloping across'

d. **'èsepéeqquwèyikse** **sik'éemne**
'e-sepée-qqú-wéeyik-see **sik'éemne**
3OB-CAUS-gallop-cross-INC horse-OBJ
'I'm making the horse gallop across'

e. **'àsapáaqqowàyiktòqsa** **sik'éemne**
'e-sepée-qqú-wéeyik-toq-see **sik'éemne**
3OB-CAUS-gallop-cross-back-INC horse-OBJ
'I'm making the horse gallop back across'

f. **'àsapàqqowàyiktoqóosa** **síiselne** **sík'em**
'e-sepée-qqú-wéeyik-toq-úu-see **síisel-ne**
3OB-CAUS-gallop-cross-back-toward-INC Cecil-OBJ horse
'I'm making the horse gallop back across toward Cecil'

In the last example, there is one derivational prefix and two derivational suffixes inside the scope of causation. The sense is that I am making the horse return across the creek

galloping in the direction of Cecil, it having previously gone over the creek. The final derivational suffix **-úu** determines that Cecil, the goal, is the grammatical direct object.

2.3.4.5. 'Only'

The suffix **-ciimi** 'only' comes after derivational suffixes including the stem formative **-k** and just before the aspect-tense inflectional complex.

(427) *Inflection* – [- ***Stem*** -] –**ciimi** –*Inflection*

This affix is very productive and creates S-stems:

(428) a. **hàaníisa** **kìwkiwíl'ec**
hii-haníi-see
3-make-INC drum
'he makes drums'

b. **hàaníicìmisa** **kìwkiwíl'ec**
hii-haníi-ciimi-see
3-make-only-INC drum
'he only makes drums'

The examples in (429) show a derivational suffix (discussed above in §2.3.4.3) preceding **-ciimi**.

(429) a. **'àmc'iyóokìnisa**
'e-mc'ii-úukini-see
3OB-hear-as.approaches-INC
'I hear it approaching'

b. **'àmc'iyóokìnicìmisa**
'e-mc'ii-úukini-ciimi-see
3OB-hear-as.approaches-only-INC
'I only hear it approaching'[27]

In (429), the root **mc'ii** 'hear' precedes the directional suffix **-uukini** 'as object approaches', which precedes the suffix **-ciimi**.

The underlying long vowel in **-ciimi** is realized when it receives main stress.

(430) **hìipcíimise**
hii-hip-ciimi-see
3-eat-only-INC
'he only eats'

This suffix is clearly related to the noun suffix **-ciim** 'only' discussed in §2.3.1.4.2 (e.g., in the noun **ciq'áamqalcim** 'only dogs').

2.3.4.6. Deverbalization

In certain cases, a bare verb stem can function in syntax as a nominal, which includes being suffixed with a case marker. In most instances, Nez Perce verbs undergo deverbalization through a number of deverbalizing suffixes, ranging from the single consonants **-t/-n** of the active participle to disyllabic examples. Most of this morphology

[27] A consultant explains that this is what you would say if the train were approaching and were so loud that the train was all you could hear.

produces nouns or adjectival deverbals, but at least one deverbal suffix derives an adverbial. Additionally, reduplication of verb roots produces adjectives.

The suffixes that have already been discussed under the sections on nouns and adjectives will only be briefly cited here with references to the places in this sketch that provide a more extensive discussion. Aoki (1970:65-71) lists the various deverbal suffixes and their allomorphs, and Rude (1985:63-6) discusses the active participle, the attributive suffix, and the suffix **-'eec**.

In several cases, the verb's stem class determines the form of the deverbalizing suffix. If the deverbalizing suffix begins with a vowel when it is affixed to an S-stem verb, then it will begin with an **n** when affixed to a C-stem verb. This follows the pattern of the aspect morphology described in §2.3.4.1.1. One suffix begins either with **s** or **c**, depending on which kind of stem it is attached to, and the active participle is either **t** or **n**.

Nominalizations formed with the basic active participle ('NM') have **-t** suffixed to S-stems and **-n** suffixed to C-stems (see §2.3.4.1.1). Some very basic words formed with the active participle seem to have lost the active sense of the verb.

(431)	a.	**hípt**	b.	**tàmáalwit**
		hip-t		**tamáalwi-t**
		eat-NM		lead-NM
		'food'		'law, commandment'

Other words formed with these affixes are given gerundial or infinitival glosses by native speakers. There is no separate means of producing an infinitive in Nez Perce.

(432) a. **cìlúukt**
cilúu-k-t
boil-SF-NM 'boiling, to boil'

b. **sèpéeketìn'kt**
sepée-kée-tin'u-k-t
CAUS-tooth-die-SF-NM 'poisoning, to poison'

c. **kè'nípt**
kee-'np-t
tooth-hold-NM 'biting, to bite'

Some of these nominalizations include the stem formative **-k** (432a,b)

Epenthesis of **i** takes place when **-n** is affixed following oral stops such as **k** (433b,c).

(433) a. **páayn**
paay-n
arrive-NM
'arriving, to arrive'

b. **tìn'úkin**
tin'u-k-n
die-SF-NM
'dying, to die'

(434) a. **tìwíikin**
tiwíik-n
follow-NM
'following, to follow'

b. **hìwíiwn**
hiwiiw-n
cut-NM
'cutting, to cut'

This epenthesis is not found with affixation of **-t** (contrast (433b) with (434b)).

Examples where there is a short **i** preceding the **t** of the nominalizer are cases in which the vowel is an unvarying part of the verb stem.

A noun formed with the active participle has the syntactic nature of other nouns. It can function as a subject, object, or oblique, and it can take case markers in doing so.

(435) a. **túuqit** **híiwes** **qèpsí's** **'ìníitpe**
túuqi-t **hii-wee-s** **'iníit-pe**
smoke.tobacco-NM 3-be-INC no.good house-LOC
'Smoking is no good in the house'

b. **túuqìtki** **hìtàlapóosatàn'ix**
túuqi-t-ki **hii-talapóosa-taan'ix**
smoke.tobacco-NM-INST 3-worship-HAB.PL
'They worship with smoking'

(436) **tèqecíckùptne** **'àmác'is**
teqe-cíckup-t-ne **'e-mac'i-s**
quick-be.alarmed-NM-OBJ 3ob-hear-PRF
'I have just heard of a sudden alarm.'

The active participle can take a complement as seen in (437) and (438).

(437) **kònma'í** **túuqit** **kèleméetki** **híiwes**
túuqi-t **keleemeet-ki** **hii-wee-s**
in.that.manner smoke.tobacco-NM peace.pipe-INST 3-be-INC
'Smoking the peacepipe is in that manner.'

(438) **c'íiqin** **nìmipùutímtki** **wéet'u** **híiwes** **'éelèwi'c**
c'íiq-n **nimipuutímt-ki** **wéet'u** **hii-wee-s** **'éelewi'c**
speak-NM Nez.Perce-speach-INST not 3-be-INC easy
'Speaking Nez Perce is not easy.'

Stems formed with the active participle are the basis for some other nominalizing morphology, including the desiderative nominalization **-'ipeec** discussed in §2.3.4.7. below, and some of the other nominative suffixes discussed in this section. Additionally, the conditional suffix **-'aax̂** attaches to a stem formed with the active participle to create one kind of conditional verb (see §2.3.4.1.5).

(439) **néecmì's sík'em wàt'áax̂**
sik'eem wee-t-'aax̂
I.wish horse be-NM-CND
'I wish I had a horse.'

The particle **néecmi's** is uninflected and indicates that the first person subject has a desire. It selects a conditional verb phrase complement.

A bare verb stem can function in syntax as a nominal for some speakers. This depends upon the speaker and the verb. The verb **láwyala** 'gaff fish' functions as a nominal in the following example from Aoki (1970:78):

(440) **'ewsíine 'iméem láwyala**
'e-wee-siine 'imée-m
3OB-be-INC.PL.RMT they-ERG gaff.fish
'they had their gaff fishing'

This example was recorded in 1960 from an elder who is no longer living. There are a number of other such examples of bare verb stems which function as nominatives in narratives that he produced. For current speakers with whom I am working, the verb **láwyala** requires a suffix to be nominalized in a similar situation. The sentence in (441) was ungrammatical without the word final-t of **láwyalat**.

(441) **míne wées 'ìmím láwyàlat**
wee-s 'iim-nm láwyala-t
where be-INC you-ERG gaff.fish-NM
'Where is your gaff fishing?'

The elder who produced (442) also had the verb **tukelíik** 'hunt' used as a nominal, and current speakers were happy with the following example where the verb **tukelíik** 'hunt' functions as a noun without suffixation.

(442) **cá'ya tùkelíix 'àlàtam'áalpa**
'alatam'áal-pe
none hunt February-LOC
'There is no hunting in February.'

In the following examples, the bare stem is suffixed with only the instrumental case marker **-ki**. These examples were produced by current speakers.

(443) a. **hìc'íiqcìx tùkelíixki**
hii-c'íiq-cíix tukelíix-ki
3-speak-INC.PL hunt-INST
'They are talking about hunting'

b. **tìmmíiyùce wèeke'éyxki**
tìmmíiyu-cee weeke'éyk-ki
consider-INC fly-INC
'I am thinking about flying'

Rude (1985:64) observes that it is vowel final verbs that are nominalized without the use of the typical morphology. However, it is more accurate to day that this depends upon the speaker and upon the verb.

I have already described the attributive suffix **-hiin** above under noun derivation (§2.3.1.4.1) and under adjective morphology (§2.3.2). This suffix with its allomorph **-i'n** are used to form the passive participle. The form **-hiin** mostly occurs with nouns to form attributives, but sometimes it occurs with verbs.

(444) a. **wè'nikíin**
we-'nik-hiin
with.words-put-ATRB
'called'[28]

b. **yóx̂ hìwéeke píispàyp wè'nikíin**
that was peace.pipe called
'That was called a peace pipe'

The allomorph **-i'n** only occurs with verbs.

(445) a. **mìyá'c híiwes k'óomàynì'n**
hii-wee-s k'óomay-ni'n
child 3-be-INC hurt-ATRB
'The child is hurt.'

b. **làpatáat k'úsmì'n wéewlùqse**
k'úsmi-i'n wéewluq-see
potato fry-ATRB want-INC
'I want fried potatoes.'

This allomorph is **-ni'n** following a C-stem verb.

(446)

a.	**k'úsmìsa**	b.	**k'úsmìi'n**	c.	**k'úsmìi'sne**
	k'úsmi-see		**k'úsmi-i'n**		**k'úsmi-i's-ne**
	fry-INC		fry-ATRB		fry-ATRB-OBJ
	'I fry'		'fried'		'fried (OBJ)'

(447)

a.	**k'óomàyca**	b.	**k'óomàynì'n**	c.	**k'óomàynì'sna**
	k'óomay-cee		**k'óomay-ni'n**		**k'óomay-ni's-ne**
	hurt-INC		hurt-NM-ATRB		hurt-NM-ATRB-OBJ
	'I am hurt'		'hurt'		'hurt (OBJ)'

---

[28] 'put with words' = 'call' or 'name'

Both forms of the suffix undergo the same irregular sound change of **n** to **s** under affixation (446c)-(447c), (448b).

(448)	a.	**'àalahíin**	b.	**'àalahíisna**
		'aalaa-hiin		**'aalaa-hiin-ne**
		fire-ATRB		fire-ATRB-OBJ
		'train'		'train (OBJ)'

It is not possible to predict which verbs will take **-i'n** and which **-hiin**, although the former allomorph is much more common.

There are two other deverbal morphemes that create adjectives: **-'eew** and **-'iis/-'iic**. The adjective forming deverbal suffix **-'eew** indicates something that is characterized by that action.

(449)	a.	**hènim'ew**	b.	**híp'ew**
		henim-'eew		**hip-'eew**
		unwilling-ADJ2		eat-ADJ2
		'lazy person'		'edible cottonwood fungus'

The adjectival formative **-'iis/-'iic** has a similar denotation.

(450)	a.	**háamt'ic**	b.	**làmmát'ic**
		haamti-'iic		**lamamt-'iic**
		be.fast-ADJ		be.restless-ADJ
		'fast'		'bothersome'

I have previously described both of these unaccented suffixes and their interaction with the verb stem's semantics under adjective derivation in §2.3.2.

Complete reduplication of the verb root is used to form several different adjectival forms. For each reduplicated adjective in (451a), (452a), there are forms where the unreduplicated stem is used as a verb root (451b), (452b).

(451)	a.	**cìmúuxcimùx**	b.	**hì'lècmúukse**	
				hii-'lec-cmúuk-see	
				3-by.fire-blacken-INC	
		'black'		'he is blackening something by fire'	
(452)	a.	**łité'łitè'**	b.	**'ètkúupłitè'kse**	**'ìpéeẋne**
				'e-tukéep-łité'-k-see	**'ipéeẋ-ne**
				3OB-by.hand-flatten-SF-INC	bread-OBJ
		'flat'		'I flatten out the bread by hand'	

For further discussion of reduplicative noun derivation see §2.3.1.2, and for reduplicative adjective derivation see §2.3.2.

The affix **-síimay/-cíimay** is unusual in that the form **siméy** is a verb itself: **siméyse** 'I fail'. However, when affixed to a verb, it produces an adjective indicating the inability to perform the action of the verb.

(453)	a.	**mìc'isíimay**	b.	**mìsàmsíimay**
		mic'i-síimay		**miseem-síimey**
		hear-unable		lie-unable
		'unhearing'		'truthful'
	c.	**làmàmtcíimay**		
		lamamt-cíimay		
		bother-unable		
		'unbotherable'		

The stem class of the verb determines the form of the suffix. (453a,b) are S-class stems, but (453c) is a C-class stem.

Additional evidence that these forms truly involve deverbalization is seen in the fact that the verbalizer **-wii** is used to create verbs from these forms.

(454) **wèpsiméywìse**
weep-siimey-wii-see
by.hand-unable-VRBL-INC
'I am unsure of what I do'

I provide additional examples with **-wii** in §2.3.4.7.

Nez Perce makes use of several deverbal suffixes to form specific classes of nouns such as locations, instruments, and agents. They have considerable allomorphic variation. In some cases, the position of main stress is the determining factor.

The deverbal suffix **-ees** indicates 'place of action' ('PLC'). There is a common irregular form **-nwees** with **i** epenthesized either before or after the **n**.

(455)	a.	**wéeyìkse**	b.	**wèyikées**
		weeyik-see		**weeyik-ees**
		cross-INC		cross-PLC
		'I am crossing'		'crossing place, ford'
(456)	a.	**páayca**	b.	**páayniwàas**
		páay-cee		**páay-nwees**
		arrive-INC		arrive-NM-PLC
		'I am arriving'		'arriving place' [29]
(457)	a.	**wàp'áyksa**	b.	**wàp'áykìnwàas**
		we-p'áy-k-see		**we-p'áy-k-nwees**
		with.stick-drain-SF-INC		with.stick-drain-SF-PLC
		'I launder'		'laundry'

[29] This is the name of the Nez Perce Tribe's multipurpose meeting facility in Lapwai, Idaho.

Although **-ees** has a long vowel, it usually does not receive main stress (456) - (457). Exceptions such as (455) must be learned. However, whether the suffix receives stress or not, vowel length is retained. This is in contrast to the usual pattern in which underlying long vowels are not realized with length when they lack main stress.

The suffix **-'es** is an instrumental ('INS1'), and indicates an object for performing an action. It is affixed to an active nominalized base, glottalizing the **-t** /**-n** (458)-(459).

(458)	a.	**wìx̂sì'likéecèse** **wix̂si'-likéece-see** buttocks-be.upon-INC 'I am sitting'	b.	**wìx̂sì'likéecèt'es** **wix̂si'-likéece-t-'ees** buttocks-be.upon-NM-INS1 'chair' (i.e., 'butt-upon-thing')
(459)	a.	**tíim'èce** **tíim'e-cee** write-INC 'I write'	b.	**tíim'èn'es** **tíim'e-n-'ees** write-NM-INS1 'pen, pencil, chalk'

Additional examples of this suffix are provided above under the discussion of noun derivation (§2.3.1.4.1).

Rude (1994) has described a set of diminutive sound changes for Nez Perce, including **n** to **l** and **s** to **c**. When we apply these changes to the deverbal instrumental when it is suffixed to the **n** of the nominalizer we get the form **l'ec** from **n'es**. Several words have this diminutive form.

(460)	a.	**kìwkiwíl'ec** **kiwkiwi-l-'ec** drum-NM-INS1 'hand drum'	b.	**cìxcikíl'ec** **cikcik-l-'ec** sound-NM-INS1 'grasshopper species'

The hand drum is an object for making the "kiw-kiw" sound. The grasshopper species identified makes the sound "cix-cix" when it flies.

The glottalization of **-'es** can be realized in the coda of the syllable rather than as the onset. The result is the allomorph **-é's** (**-é'c** with diminutive alternation of **s** to **c**).

(461)	a.	**wàtiká's**	b.	**cìlìmyòx̂pá'c**
		watiik-é's		**cilim-yox̂p-é'c**
		step-INS1		eye-?-INS1
		'sole of the foot'		'eyelash'[30]

The allomorph **-'es** is never stressed, while the allomorph **-e's** has both stressed and unstressed forms.

(462)	a.	**'ìsak'íwksa**	b.	**'ìsak'íwkà's**
		'ise-k'íw-k-see		**'ise-k'íw-k-e's**
		cutting.edge-break-INC		cutting.edge-break-INS1
		'I cut'		'saw'

While it is not entirely possible to predict when a word will have one of the two different allomorphs, the location of stress appears to be a factor. The allomorph **-'es/-'ec** never occurs in words where there is regular shifting stress. It occurs only with words that have accented, non-shifting stress. This is seen in the examples in (463) and (464), where stress does not shift.

---

[30] The form **cilim** is used in several words as a diminutive for **sílu** 'eye.' The rest of the form **yox̂p** is found nowhere else in the language that I have found.

(463)	a.	**wìx̂sì'likéecèt'es** **wix̂si'-likéece-t-'es** buttocks-be.upon-NM-INS1 'chair'	b.	**wìx̂sì'likéecet'èspe** **wix̂si'likéecet'es-pe** chair-LOC 'on the chair'
(464)	a.	**t̓iim'èn'es** **t̓iim'e-n-'es** write-NM-INS1 'pen, pencil, chalk'	b.	**t̓iim'en'èski** **t̓iim'en'es-ki** pencil-INST 'with a pencil'

By contrast, stress can be located on the derivational suffix **-e's**. When this occurs, stress can continue to shift rightwards when the derived noun is inflected with a case suffix.

(465)	a.	**wàtiká's** **watiik-e's** step-INS1 'sole of the foot'	b.	**wàtika'áspa** **watiika's-pe** sole-LOC 'on the sole of the foot'
(466)	a.	**cìlìmyòx̂pá'c** **cilim-yox̂p-e'c** eye-?-INS1 'eyelash'	b.	**cìlìmyòx̂pa'ácpa** **cilimyox̂pa'c-pe** eyelash-LOC 'on the eyelash'

The historically related instrumental suffix **-u's** ('INS2') has the same glottalization pattern and corresponding stress pattern as the **-e's** allomorph of **-'es**.

(467)	a.	**càpakà'npó's** **cepee-kee-'np-u's** pressure-bite-take-INS2 'scissors'	b.	**càpakà'npo'óski** **capaka'npo's-ki** scissors-INST 'with scissors'
(468)	a.	**wìslipó's** **wislip-u's** shovel.snow-INS2 'snow shovel'	b.	**wìslìpo'óski** **wislipo's-ki** snowshovel-INST 'with a snow shovel'

As was shown in §2.1.4 above, a final consonant cluster prevents a word final syllable from violating the constraint against word final stress. The configuration V́CC# found in **-é's** and in **-ú's** succeeds in getting stress very close to the end of the word without it being truly word final. When a case suffix is added to the noun formed with **-é's** or **-ú's**, then stress can shift farther to the right onto an epenthetic copy of the derivational suffix's vowel: **-e'éspe** and **-u'úski**. I return to this pattern of stress shift with epenthetic vowels in Chapters 5.4.1.

The deverbal affix **-'eesk** (**-eesx** word finally through spirantization of **k**) attaches to the nominalizer **-t/-n** and indicates 'before (the action)'. As Aoki (1994) observes, this suffix appears to combine, at least diachronically, **-'es** and the directional **-k**. The result is an essentially a time adverbial.

(469)	a.	**hìpt'éesx**	b.	**tìn'xn'éesx**
		hip-t-'eesk		**tin'u-k-n-'eesk**
		eat-NM-before		die-SF-NM-before
		'before eating'		'before dying'

The nominalizing consonant is glottalized by the suffix.

The agentive suffix **-'éet** ('AGNT1') frequently has main stress. It does not affix to the nominalizer. Instead it follows the pattern of much of the aspect marking morphology: **-n** on C-stems and no consonant with S-stems. Even though this suffix begins with ', it behaves like a vowel initial suffix in that with S-stems that are vowel final, a back glide is inserted.

(470)	a.	**tàmtàyn'áat** **tamtáay-n-'éet** tell.news-NM-AGNT1 'preacher'	b.	**wàpàyataw'áat** **wepée-yataw-'éet** hand-help-AGNT1 'helper'

This suffix typically causes the glottalization of a preceding consonant, but there is a variant form where glottalization is lacking.

(471)	a.	**pì'ìmnéet** **pi'ím-n-éet** grow-NM-AGNT1 'youth'	b.	**sìyekéet** **siyek-éet** observe-AGNT1 'scout'

There is no apparent explanation for why glottalization remains in one form rather than another, but there seems to be a slight historical trend towards loss of glottalization.

The derivational affix **-e'íi** ('DVB.INST') forms nouns and function words, and was discussed in §2.3.1.4.1. With nouns, the sense has to do with an instrument or object involved in some activity. All of my examples are suffixed to verbs of movement.

(472)	a.	**'ìpnèwlekè'yke'í** **'ipnee-wlee-ke'y-k-e'íi** itself-four.leg-move-SF- DVB.INST 'car (NOM)'	b.	**'ìpnèwlekè'yke'íiki** **'ipnewleke'yke'íi-ki** car-INST 'car (INST)'
(473)	a.	**wèekè'yke'í** **wee-ke'y-k-e'íi** fly-move-SF- DVB.INST 'airplane (NOM)'	b.	**wèekè'yke'íipe** **weeke'yke'íi-pe** airplane-LOC 'airplane (LOC)'
(474)	a.	**sèpqulèke'í** **seepqule-k-e'íi** roll-SF- DVB.INST 'hubbard squash (NOM)'	b.	**sèpqulèke'íine** **seepquleke'íi-ne** hubbard.squash-OBJ 'hubbard squash (OBJ)'

The first two nouns are self-explanatory. The Nez Perce word for automobile, an object that goes by itself, contains the verb root **wleeke'yk**. This verb is specifically for locomotion performed by a quadruped, which a car certainly is, although its legs are a bit unconventional. A plane, of course, is something that moves by flying. The third example involves a word which indicates movement by rolling. My consultants explain that since a hubbard squash is round, it can roll along.

An additional derivational suffix is **-tekey** ('INS3'). This unaccented suffix forms names for objects related to carrying out a verb's action.

(475)	a.	**'isáaptàkay**	b.	**tùléetèkey**
		'isáap-tekey		**tulée-tekey**
		carry.on.back-INS3		with.walking-INS3
		'parfleche', 'Indian trunk'		'carpet, rug'

Aoki (1994) observes that these objects are particularly associated with a surface involved with the action. The **'ìsáaptàkay** 'parfleche', for example, is a piece of rawhide that is first laid flat and loaded with materials. It is then folded around the load and tied with thongs.

2.3.4.7. Desiderative

The desiderative suffix **-'ipeec** takes as its base a verb nominalized with **-t/-n** and creates from it a new noun. The desiderative glottalizes the consonants **-t/-n**. The noun

indicates a subject that is characterized by desire to perform the action of the nominalized verb.

(476) a. **hìpíse**
hip-see
eat-INC
'I eat'

b. **hìpt'ípec**
hip-t-ipeec
eat-NM-DESID
'snacker'

(477) a. **hìcìlcílce sík'em**
hii-cilcil-cee
3-trot-INC
'the horse trots'

b. **cìlcìln'ípec**
cilcil-n-ipeec
trot-NM-DESID
'trotter'

A verb may in turn be formed from the derived noun with the verbalizer **-wii**. The desiderative verb indicates for the subject the desire to perform the original verb's activity. (478) is the verbalization of (476b) and (479) the verbalization of (477b). This is the usual means of stating one's desire to engage in an activity.

(478) a. **hìpt'ipéecwìse**
hip-t-ipeec-wii-see
eat-NM-DESID-VRBL-INC
'I want to eat'

b. **hìcìlcìln'ipéecwìse sík'em**
hii-cilcil-n-ipeec-wii-see
3-trot-NM-DESID-VRBL-INC horse
'the horse wants to trot'

The verbalizer **-wii** forms S-stem verbs.

The desiderative has an important effect upon the stress profile of the derived noun and verb. In desiderative nouns, stress is assigned to the derivational suffix. In the

uninflected form, it is assigned to the penultimate syllable. If the noun undergoes case marking (479b), then stress shifts to the vowel **ee**, which is then realized as long.

(479)	a.	**hìpt'ípec**		b.	**hìpt'ipéesnim**
		hip-t-'ipeec			**hip-t-'ipeec-nm**
		eat-NM-DESID			eat-NM-DESID-ERG
		'snacker (NOM)'			'snacker (ERG)'

2.3.5. Morphology of function words

By function words, I mean wh-pronouns, relativizers, demonstratives, and a number of items loosely classified as "particles". The latter category includes the question marker **weet**; negations such as **néecu'** 'never', **wéet'u** 'no', **wéec'u** 'quit'; and conditionals such as **pay's** 'maybe'. Many of these different kinds of function words participate in a system of suffixes that agree with the subject or object or both.

It is impossible to provide a complete discussion of all of the function words and particles in all of their aspects in this sketch. I will simply provide a description of the most salient features, particularly in those areas where they touch on the phonology.

2.3.5.1. Derivation of function words

Human classifiers exist both for the numerals, quantifiers, certain wh-pronouns, and the demonstratives. Consider the following sets of the numbers 'one' through 'ten'.

(480)

	non-human	human
'one'	**náaqc**	**náaqc**
'two'	**lèpít**	**lèpú'**
'three'	**mìtáat**	**mìtáaw'**
'four'	**píilèpt**	**píilèpu'**
'five'	**páaxat**	**páaxòo**
'six'	**'òyláaqc**	**'òyláaqcwe**
'seven'	**'ùynéept**	**'ùynéepwe**
'eight'	**'òymátat**	**'òymátòo**
'nine'	**k'úyc**	**k'ù'ícwe**
'ten'	**púutìmt**	**púutìmwe**

The same word is used for 'one' in both classes with current speakers. For the numbers 'two' on up to 'ten', the non-human classifier is **-t**. The basic human classifier is **we**. When this is suffixed to a stem ending in **a**, the series **awa → oo**. (For more discussion of this regular sound change, see Chapter 3.2.) This same classifier occurs in quantifiers such as 'many', 'few', and 'every':

(481) a. **'ìléxni** 'many'

b. **'ìlxlíiwe**
'ilexnii-we
many-HUM
'many (people)'

(482) a. **míil'ac** 'a few'

b. **míil'àcwa**
míil'ac-we
few-HUM
'a few (people)'

(483) a. **'óykàla** 'every'

b. **'óylalòo**
'oykala-we
every-HUM
'everyone'

For the numbers 'two', 'three', and 'four', the human classifier is **-u'**. This is realized as **-w'** following a vowel in 'three'. Human numbers and classifiers are used with animals in the traditional oral narratives when the animals are acting as humans. Some modern day speakers also have a tendency to use human numbers in reference to animals and the non-human numbers in reference to inanimate objects. Perhaps for these individuals the crucial factor in the classifier system is animacy.

The human classifier also occurs with interrogative pronouns.

(484)

	non-human	human
'how many'	**mác**	**mácwa**
'all'	**la'ám'**	**la'ámwa**

Demonstratives use a different classifier, **-me**, which indicates human plural ('HUM.PL'). Demonstratives with singular human referents lack this suffix.

(485)

	non-human/human singular	human plural
'this'	**kii**	**kiime**
'that'	**yóx̂**	**yòx̂mé**

Human plural **-me** is also found with the interrogative **'isii** 'who' and some plural human nouns.

(486)

	singular	plural
'who'	**'ìsii**	**'ìsiime**
'friend'	**láwtiwàa**	**láwtiwàama**
'relative'	**hìmiyu**	**hìmyúume**

Some nouns with human referents do not have plural forms, and others form the plural with initial CV- reduplication (see §2.3.1.2).

Examples of human and non-human numbers and classifiers are contrasted in the following clauses.

(487) a. **yóx̂ mìtáat ík'em hìpáaycìx míiw'àcpa**
mitáa-t hii-páay-cìix míiw'àc-pe
that three-CLS horse 3-come-INC.PL short.time-LOC
'those three horses are arriving in a short time'

b. **yòx̂má mìtáaw' láwtiwàama hìpáaycìx míiw'àcpa**
yóx̂-me mitáa-w' láwtiwaa-me hii-páay-cíix míiw'ac-pe
that-HUM three-HUM friend-PL 3-arrive-INC.PL short.time-LOC
'those three friends are arriving in a short time'

The verb in each example is identical. The human/non-human contrast is codified only in the noun phrase. It is also more likely that a set of animals or a set of inanimate objects will be referred to with a verb that is neutral for plurality that a set of humans would be.

The affix **-e'íi**, which has been described under the category of deverbal morphology in §2.3.4.6, provides a manner denotation when used to derive function words (488)-(489).

(488) a. **mànáma**
manaa-me
what.how-from
'what, how'

b. **mànma'í**
manaama-e'íi
how-DVB.INST
'in what way/manner'

(489) a. **kònmá**
kon-mé
that-from
'those, that way'

b. **kònma'í**
konmá-e'íi
that.way- DVB.INST
'in that manner'

Additional affixation is possible with the stem (489b), as seen in (490).

(490) **kònma'íicìm'o**
konmá-e'íi-cim-'u
that.way-manner-only-EMPH
'only in that manner'

This example includes the noun suffix **-ciim** 'only' plus the emphatic **-u'**. This example again illustrates the previously discussed unusual behavior of the affix **-e'íi**, namely that it has an accented vowel that is long just in case it is not word final.

The emphatic **-'u** is important in its use with the demonstratives.

(491) a. **kíi'u**
kii-'u
this-EMPH
'this very one'

b. **kíimu'**
kii-me-'u
this-HUM.PL-EMPH
'these very (people)'

c. **kínu'**
kíne-'u
here-EMPH
'right here'

This emphatic may be a clitic. It is one of the only elements that follows the case suffixes.

(492) **kòním'o**
ko-nm-'u
that-ERG-EMPH
'that very person (GEN)'

The emphatic appears in several other demonstrative forms presented immediately below.

Nez Perce has two basic demonstratives – **kii** 'this/here/proximate' and **ko-** 'that/there/distant'. From these two root forms many others are derived (there are more

than 40 different derived forms for each basic stem). While the root **kii** 'this' functions as an independent word, there is no such independent word **ko** or **koo**. Its status as an independent demonstrative in the paradigm is taken by the suppletive form **yox̂** 'that'.

(493) a. **kíi háama**
'this man'

b. **yóx̂ háama**
'that man'

The demonstrative **yox̂** is the base stem for only a few other forms.

(494) a. **yóq'o**
yox̂-'u
that-EMPH
'that very one'

b. **yòx̂cíim'o**
yox̂-ciim-'u
that-only-EMPH
'the only one'

yox̂ exists in near complementary distribution with demonstratives formed from **ko**, which is the root of the majority of derived distal demonstratives.

(495) a. **kònó'**
koná-u'
there-EMPH
'right there'

b. **kòn'mó'**
koná-m'á-u'
there-from-EMPH
'right from there'

c. **kònímo'o**
ko-nm-'u
that-ERG-EMPH
'that very person (GEN)'

d. **kònmàyník'o**
ko-maynik-'u
that-place-very-EMPH
'that very direction'

When **-'u** is affixed, a preceding vowel is deleted, and the emphatic is realized as **-o'**. If the emphatic is affixed to a consonant final stem, the consonant is glottalized.

The directional, **-éepii** 'in the direction of', is phonologically nearly identical to the derivational verb suffix **-áapii** 'away from, obstructively' discussed in §2.3.4.3. The

only significant difference is the fact that the verbal affix has dominant vowels. Examples with **-éepii** are given in (496).

(496) a. **mìnéepii**
mine-éepii
where-direction
'which way'

b. **kìnéepii**
kíne-éepii
here-direction
'this way'

c. **kònapí**
koná-éepii
that-direction
'that way'

Clearly, the two directional suffixes are related. (496c) is interesting from the perspective of stress and vowel length. It is formed on the root of the distal demonstrative **kó**, which has a special stress pattern in which stress is assigned to the very last syllable of the word. **konapí** shows the same pattern as does the suffix **-e'íi**, discussed in §2.3.4.6. and again earlier in this section. In this pattern, an underlyingly long accented vowel is realized as short when it is word final.

The suffix **-tiite** means 'same'. It combines with demonstratives and pronouns.

(497) a. **kìitíite**
kii-tiite
this-same
'this same one'

b. **kìw'alatíita**
kiiw'alá-tiite
this.time-same
'at this same time'

c. **kònmàmtíita**
konmáam-tiite
those-same
'those same ones'

d. **kù'stíite**
ku'ús-tiite
like.this-same
'in the same way'

(498) a. **'ìptíite**
'ipí-tiite
3-same
'same person'

b. **'ìpnìmtíite**
'ipí-nm-tiite
3-ERG-same
'same person (ERG)'

This suffix is also placed after the case suffixes (498b), like the emphatic **-u'** (see example (495) above in this section).

The affix **-wáyl** indicates a certain distance or length.

(499) a. **mìwáyl**
mi-wáyl
how-distance
'how far'

b. **kìwáyl**
kii-wáyl
this-distance
'this far'

This affix only occurs in these two forms that I know of. Several other derivational affixes exist which have a very restricted range in the vocabulary.

The suffix **weceen** or **weceet** ' because of, reason' forms several function words.

(500) a. **'ìtúuwècet**
'itúu-weceet
what-reason
'what reason, why'

b. **mànámawàcat**
manáma-weceet
why-reason
'what reason, why'[31]

b. **kínuwècet**
kíne-weceet
this-reason
'this reason'

c. **kònwacáan**
koná-weceen
that-reason
'that reason'

---

[31] There are other ways of asking 'why' than the two found here. The choice of which is used appears to be at least partly dialectal.

d. **mínikùuwècet**
mínikuu-weecet
which.one-reason
'on account of which one'

2.3.5.2. Inflection of function words

Inflection of function words happens on two levels – that of the noun phrase and that of the clause. In the noun phrase, the case system applies to nouns, pronouns, demonstratives, and wh-pronouns. At the level of the clause, particles and conjunctions show agreement with the subject and sometimes the object. In addition, there are enclitics which attach to these particles following the agreement morphology.

2.3.5.2.1. Noun phrase level inflection

The Nez Perce noun phrase has case concord, such that modifiers of a head noun bear the same case as the head (see §2.3.2). Genitive modifiers are marked with the ergative case and so do not participate in concord. Numbers and other quantifiers optionally participate in concord, depending on the speaker. Case concord extends to demonstratives and to pronouns. In the following chart, the demonstratives **kii** (proximate) and **ko-/kon-** (distal) are presented with several different case inflections (the independent word 'that' **yox̂** is not inflected for case).

(501)

	kíi 'this'	**ko-/kon-** 'that'
Nominative	**kíi**	**yox̂**
Plural Nominative	**kíime**	**yox̂má**
Instrumental	**kínki**	**konkí**
Ablative	**kínix**	**koníix**
Allative	**kipx**	**konáapx**
Ergative	**kínm**	**koním**
Plural Ergative	**kínmem**	**konmá**
Objective	**kínye**	**konyá**
Plural Objective	**kínmene**	**konmaná**
Benefactive	**kín'yayn**	**kon'yáyn**
Plural Benefactive	**kínma'yayn**	**konma'yáyn**
Locative	**kíne**	**koná**
Plural Locative	**kinéeme**	**konamá**

The human plural marker **-me** follows the case suffix in the locative and precedes the objective and the benefactive case suffixes. I have not been able to elicit instrumental, ablative, and allative plurals. Demonstratives with those case markers are used to refer to objects and locations. Rather than refer to human beings with these cases, Nez Perce clauses typically makes those nominals into direct objects. In such clauses, the verb stem has a derivational suffix (see §2.3.4.3 and Rude 1986).

The stress patterns of the demonstratives are polar opposites. **kíi** is accented and so stress does not shift except in the plural locative. **ko-** assigns stress word finally, and

this is even the case with the suppletive nominative **yóx̂, yox̂má**. Absolute word final stress is a hallmark of a subset of function words addressed in Chapter 4.3.2.2. There is no way to predict which function words will belong to this set.

Most of the pronouns inflect for case, but there are three exceptions. The pronoun **kíiye** 'we (inclusive)' is uninflected and so are **'ée** 'you (SG)' and **'éetx** 'you (PL)'. These pronouns can function as ergative subjects, as subjects in intransitive clauses, and as direct objects, and they are typically used for emphasis and clarification. They do not function as genitives. I illustrate the three types of uses with the second person plural pronoun in (502).

(502) a. **'éetx pìcpícne 'èekcíix**
picpic-ne 'e-hek-cíix
you.PL cat-OBJ 3OB-see-INC.PL
'You see the cat.'

b. **'éetx pìcpícnim hinéeshèkce**
picpic-nm hii-nees-hek-cee
you.PL cat-ERG 3-PLOB-see-INC
'The cat sees you.'

c. **'éetx heyéeqcìx**
heyeeq-cíix
you.PL be.hungry-INC.PL
'You are hungry'

Since there is no subject person marking of Nez Perce verbs for first and second person, a pronoun sometimes is needed to dispel ambiguity. For example (502a), without the pronoun **'éetx** could also read 'We see the cat'.

The rest of the pronouns, including interrogative pronouns, do inflect for case. Examples of **'itúu** 'what' and **'íin** 'I, me' are given (503). The latter only occurs with a subset of case suffixes.

(503)	**'ìtúu** 'what'	**'íin** 'I, me'
Object	**'ìtúune**	**'íine**
Ergative	**'ìtúunm**	**'íinim**
Instrumental	**'ìtúuki**	
Locative	**'ìtúupe**	
Allative	**'ìtúupx**	

Aoki (1994) provides extensive exemplification of these pronouns and others.

2.3.5.2.1. Clause level morphology

At the level of the clause, there are two important areas of morphology involving function words. There is the inflection of a certain subset of function words with agreement pronominals and there are clitics.

2.3.5.2.1.2. Inflection

The inflection of function words, including conditional particles, conjunctions, and negative particles is interesting in itself in that it is not particularly common among languages. Agreement is found with such particles such as **páy's met** 'no wonder', **'ìtúune** 'what (OBJ)', **ke** the relative marker, and **wéet** the yes/no question particle.

Some Nez Perce function words show agreement with the subject, object, or both the subject and the object of their clause. Agreement is in the form of suffixes. The function word agreement suffixes have only slight similarity with the agreement morphology found in the verbal system. Nez Perce function word agreement displays considerable variation. First, some function words show agreement and others do not, even though they have remarkably similar semantics and syntax. The table in (504) compares a small subset of such words.

(504)

Agreeing		Non-Agreeing	
páy's met	'no wonder'	**páy's**	'maybe'
kú'	'perhaps'	**kú'wèet**	'maybe'
kéene	'lest/may, might'	**c'àlawí**	'if'
wéet'u	'no, not'	**'ìséex**	'not'
néecu'	'not, never'	**cá'ya**	'none'
káa	'and'	**'íitq'o**	'or'
'ìtúu	'what'	**mác**	'how many'
'ìsíi	'who'		

All of these words appear clause initially.

The second area of variation is found in the fact that among particles with agreement, they differ as to the range of arguments that a given function word will agree with. When a particle agrees with an argument, it may be with the subject or the object or both, depending upon the function word. The agreement paradigm of the yes/no question particle **weet** (505) is compared with that of the content question word **'itúu** 'what' (506).

(505)	**wéet**	3rd person
	wéetex	1st exclusive plural or singular, subject or object
	wéetènm	1st inclusive subject or object
	wéetèmex	1st subject/2nd singular object
	wéetepèmex	1st subject/2nd plural object
(506)	**'ìtúune**	'what (OBJ)'
	'ìtúunèex	'what (OBJ)/1st singular subject'
	'ìtúunèenm	'what (OBJ)1st plural subject'

The yes/no particle agrees with the full range of possible arguments while **'itúu** agrees only with first person subjects.

There are some constant principles within the range of variation. First, there is never agreement with third person arguments (the opposite of the agreement facts with verbs). Second, when there is agreement, there is always agreement with first person arguments (either subjects or objects or both). Third, the same set of suffixes is used for agreement among the different function words. Fourth, all of these function words share the syntactic characteristic of appearing clause initially.

Nez Perce function word agreement is reminiscent of second position clitics. I speculate that the explanation for the dichotomy between particles that agree and those that do not has to do with when the different function words entered the language. Those that agree are perhaps the older words that existed during that period in the language in which second person clitics became agreement suffixes. The non-agreeing words would have entered the language after this period.

The agreement facts of Nez Perce suggest that at one time Nez Perce had a set of clause initial or second position clitics that were ordered [second person] - [first person] - [third person] - Verb. The third person agreement clitics would have attached to the verb and the first and second person ones, which might have been optional, attached to clause initial elements.

(507) X=2=1=3 Verb → X-2-1 3-Verb

(where "=" indicates cliticization and "-" indicates affixation)

This would account for the complementary distribution of the agreement morphology – third person only on the verbs in prefixal form and first and second only on particles in suffixal form. The fact that there are second person pronouns which do not inflect for case might follow if they were originally clitics, since clitics are not expected to inflect for case. At this time in the development of Nez Perce, these second person pronouns are syntactically free.

The discussion will continue with an in-depth consideration of one function word with its agreement forms provided in syntactic context. I will then describe the regular aspects of function word agreement before reconsidering variation in the system.

The examples in (508) are of agreement with the yes/no particle **weet**. This particle inflects for the subject and in some cases the subject and object. Here, the subject is first person.

(508) a. **wéetèex hìpó'qa tìm'áanit**?
wéete-ex hip-o'qa
QUES-1 eat-CND apples
'May I eat the apples?'

b. **wéetèex pàapó'qa tìm'áanit?**
wéete-ex pe-hip-o'qa
QUES-1 PL-eat-CND apple
'May we (exclusive) eat the apples?'

c. **wéetèenm pàapó'qa tìm'áanit?**
weete-enm pe-hip-o'qa
QUES-1INCL PL-eat-CND apple
'Shall we (inclusive) eat the apples?'

Nez Perce clauses are often made intransitive simply by the replacement of transitive morphology for intransitive morphology, as seen in (508), where the object **tim'áanit** 'apple' is uninflected with the object case. Rude (1985:159) classifies this kind of clause as an antipassive construction. It is more likely to be used when the object is undefined or non-specific. Tense also plays a role, with future actions more likely to be intransitive than ones that have been completed (for further discussion of transitivity see §2.4.2.4).

Agreement with the question particle **wéet** is also found in clauses such as the following.

(509) a. **wéetèex kìyó'qa qémyèxpx?**
wéete-ex kuu-o'qa qémyex-px
QUES-1 go-CND Kamiah-ALL
'May I go to Kamiah?'

b. **wéetèenm pèkyó'qa qémyèxpx?**
wéete-enm pe-kuu-o'qa qémyex-px
QUES-1INCL PL-go-CND Kamiah-ALL
'Shall we (inclusive) go to Kamiah?'

Both inclusive (always plural) and exclusive first person forms exist. First person singular and first person plural exclusive have identical forms.

The forms **wéetex** and **wéetenm** can be used for first person objects as well as subjects.

(510) a. **wéetèex** **hì'npqáwnò'qom**
weete-ex **'np-qaw-nú'**
QUES-1 take-in.passing-CND.CIS
'May he take me on his way?'

b. **wéetèenm** **hìnáac'ìnpqàwnò'qom**
weete-nm **hii-nées-'np-qaw-nó'qom**
QUES-1INCL 3-PLOB-take-in.passing-CND.CIS
'Will he take us on his way?'

Second person forms only exist for transitive clauses where the object is second person, and the subject is first person.

(511) a. **wéetèmex** **sàpáapò'qa** **cèpéepyux̂tin'**
weete-m-ex **sepée-hip-o'qa**
QUES-2-1 CAUS-eat-CND pie
'Can I make you eat some pie?'

b. **wéetepèmex** **náasapàapò'qa** **cèpéepyùx̂tin'**
wéete-pe-m-ex **nées-sepée-hip-o'qa**
QUES-PL-2-1 PLOB-CAUS-eat-CND pie
'Can I make you (pl) eat some pie?'

The marker **-pe** indicates whether the second person subject is plural or not. This suffix is phonologically identical to the plural subject agreement **pe-** found on verbs in the irrealis, perfect, and perfective aspects (see §2.3.4.2.1).

Finally, there is a range of clauses that are used with the uninflected form of the particle, including all clauses with second person subjects (512) and third person subjects

acting upon either second or third person objects (513). Recall that there is agreement with a first person argument, whether or not it is a subject or object.

(512) a. **wéet hipú' tìm'áanit**
weet hip-ú'
QUES eat-IRR apple
'Will you (singular) eat an apple?'

b. **wéet pèepú' tìm'áanit**
weet pe-hip-ú'
QUES PL-eat-IRR apple
'Will you (plural) eat the apple?'

(513) a. **wéet péepù' tìm'áanit**
pée-hip-ú'
QUES 3ON3-eat-IRR apple
'Will he/she eat the apple?

b. **weet péepcìx tìm'áanit**
pée-hip-cíix
QUES 3ON3-eat-INC.PL apple
'Are they eating the apples?

A summary of the five forms of **weet** is provided here.

(514)	**wéet**	(default)
	wéeteex	1st exclusive plural or singular, subject or object
	wéetenm	1st inclusive subject or object
	wéetemex	1st subject/2nd singular object
	wéetepemex	1st subject/2nd plural object

The main features of function word agreement are summarized as follows:

1) There is no agreement with third person arguments;

2) There is always agreement with first person arguments in the paradigm, even if it is not the case that every form agrees with first person in some way;

3) Particles with agreement are in clause initial position;

4) There is a regular inventory of agreement suffixes.

These aspects will be illustrated with the relative marker **ke**, the interrogative pronouns **'itúu** 'what' and **'isíi** 'who', and the conditional **pay's met** 'no wonder'.

Aoki (1994) describes **ke** as the relative particle. **ke** combines with other elements to produce wh-words, including demonstratives and pronouns. In most cases, when **ke** combines with other words to produce a wh-word, there is no subject/object agreement. However, when the relative particle combines with the conjunction **kaa** 'and', producing the meaning 'when' or 'while', the resulting function word shows a wide range of agreement.

Main stress for the **ke káa** construction is on the conjunction **káa**. The relative particle **ke** may or may not undergo vowel harmony by the dominant vowel **a** of the conjunction. Whether or not vowel harmony obtains depends on the speaker. Subject/object agreement attaches to **ke**, which is followed by the cliticized conjunction.

(515) **ke**-AGR=**kaa**

I assume that these words combine in a process of cliticization because of the optional application of vowel harmony, because **kaa** takes word stress for the entire construction, and because the agreement morphology attaches to the first element **ke**.

The full agreement paradigm is shown in (516).

(516)	**kàkáa**	or	**kèkáa**	'when/while he or they''
	kàxkáa		**kèxkáa**	'when I'
	kàmàxkáa		**kèmèxkáa**	'when I/we (subject)/you (singular) object'
	kàmkáa		**kèmkáa**	'when you (singular)'
	kàpàmkáa		**kèpèmkáa**	'when you (plural)'
	kànmkáa		**kènmkáa**	'when he (subject)/ us (object)' and 'when we (subject)/him(object)'
	kàpamàxkáa		**kèpemèxkáa**	'when I/we (subject)/ you (plural)(object)'

When we compare the paradigm for **weet** (514) with that of **ke kaa** (516), we see that the relativizer has two agreement forms that the question particle lacks. **weet** lacks agreement for second person which is exclusive of first person. An example of second person plural subject agreement is given in (517):

(517) **yóx̂ cìq'áamqal 'ìméesnim nùkúne péepe**
'imees-nm nukt-ne pée-hip-e
that dog deer-ERG meat-OBJ 3ON3-eat-PTV
'That dog ate the deer meat

kèpém káa cìklíitòqsìne 'ìtàmyáanwàaskìn'ix
ke-pe-m cklíi-toq-sine 'itamyáanwaas-kin'ix
REL-PL-2 and return-back-REM.PL town-ABL
while you were coming back from town.'

Function words have different agreement paradigms, and it is impossible to predict what kind of paradigm a function word will have or even if it will have an agreement paradigm at all (see (504) above).

When a function word has agreement, it selects from the basic set of agreement markers are represented here.

(518)	**-ex/-eex**	first person exclusive or singular
	-nm	first person inclusive or plural
	-pe	second person plural
	-m	second person argument

As seen with **weet** and with **ke kaa**, there is no agreement for third person. The full order of suffixes in the last example in (519) is glossed here.

(519) **kèpemèxkáa**
ke-pe-m-ex=kaa
REL-PL-2-1=and
'when I/we (subject)/ you (plural)(object)'

There is no first inclusive first person form to go with a second person object for the relative particle **ke**.

The clause initial nature of the agreement morphology is seen in the following example:

(520) **kèpèm káa pèkyú' 'ìtàmyáanwàasx**
ke-pe-m=káa pe-kuu-ú' 'itamyáanwaas-x
REL-PL-2=and PL-go-IRR town-ALL

páy's pèepú' nùkúne káa 'ìpéeẑne
pe-hip-ú' nukt-ne 'ipéeẑ-ne
maybe PL-eat-IRR meat-OBJ and bread-OBJ
'When you (PL) go to town, maybe you will eat meat and bread.'

Clause initial position is the common location for the agreeing function words, including the relative particle **ke káa** (516) and the question marker **wéet** (514). Some function words can appear anywhere in syntax, but they only show agreement when clause initial. Two such examples are the interrogative pronouns **'ìtúu** 'what' and **'ìsii** 'who'. These

interrogatives can be found anywhere in the clause, but when they are clause initial and have the direct object case suffix **-ne**, they may also agree with a first person subject. They do not agree when they are subjects and are unmarked with **-ne**.

(521)	**'ìtúune**	'what (OBJ)'
	'ìtúunèex	'what (OBJ)/first person singular'
	'ìtúunèenm	'what (OBJ)first person plural'

(522)	**'ìsíine**	'who (OBJ)'
	'ìsíinèex	'who (OBJ)/person singular'
	'ìsíinèenm	'who (OBJ)person plural'

The examples in (523) show these function words in context.

(523)	a.	**'ìtúunèenm**	**'èepsíix**
		'itúu-ne-enm	**'e-hip-síix**
		what-OBJ-1PL	3OB-eat-INC.PL
		'What are we eating?'	
	b.	**'ìsíinèenm**	**'èekcíix**
		'isíi-ne-enm	**'e-hek-cíix**
		who-OBJ-1PL	3OB-eat-INC.PL
		'Who are we seeing?'	

These interrogatives do not have agreement with second person subjects.

(524)	***'ìtúunèpem**	**'èepsíix**
	'itúu-ne-pe-m	**'e-hip-síix**
	what-OBJ-PL-2	3OB-eat-INC.PL

Had this example been grammatical, it would have been expected to have read, 'What are you (PL) going to eat?' The wh-word **'ìtúune** 'what (OBJ)' only agrees with first person

subjects. Specification of a second person subject must be made periphrastically, as in the following sentence:

(525) **'ìtúune 'éetx 'èepsíix?**
'itúu-ne 'e-hip-síix
what-OBJ you.PL 3OB-eat-INC.PL
'What are you (PL) going to eat?'

The pronoun **'éetx** specifies a second person subject or object argument, and in (525) that argument must be the subject.

The following tables summarize the agreement properties of several function words for comparison.

(526)	**wéet**	third person
	wéetex	first person exclusive plural or singular, subject or object
	wéetenm	first person inclusive subject or object
	wéetemex	first person subject/second person singular object
	wéetepemex	first person subject/second person plural object

(527)	**kàkáa**	or	**kèkáa**	'when/while he or they'
	kàxkáa		**kèxkáa**	'when I'
	kàmàxkáa		**kèmèxkáa**	'when I/we (subject)/you (singular) object'
	kàmkáa		**kèmkáa**	'when you (singular)'
	kàpàmka		**kèpèmka**	'when you (plural)'
	kànmkáa		**kènmkáa**	'when he (subject)/ us (object)' and 'when we (subject)/him(object)'
	kàpamàxkáa		**kèpemèxkáa**	'when I/we (subject)/ you (plural)(object)'

(528)	a.	**'ìtúune**	'what (OBJ)'
		'ìtúuneex	'what (OBJ)/first person singular subject'
		'ìtúunèenm	'what (OBJ)first person plural subject'

b.	**'ìsíine**	'who (OBJ)'
	'ìsíinèex	'who (OBJ)/first person singular subject'
	'ìsíinèenm	'who (OBJ)/ first person plural subject'

The two wh-pronouns given in (528) may be left uninflected or can be inflected with other case markers as shown in (529).

(529)	a.	**'ìtúu**	'what'
		'ìtúunm	'what (ERG)'
		'ìtúuki	'what (INST)'
	b.	**'ìsíi**	'who'
		'ìsíinm	'who (ERG)'

However, the pronouns take agreement morphology only when they are inflected for object case, and they are clause initial.

The wide range of agreement forms of **ke kaa** (527) contrasts with to the narrow range of forms of the interrogative pronouns **'itúu** and **'isíi** (528). Other examples of function words exist, but these will be adequate as an overview of the agreement system. Aoki (1994) is the best source of additional examples of function words and their agreement systems.

2.3.5.2.1.2. Clitics

In some of the function word complexes listed above, vowel harmony takes place optionally. This is significant in that harmony is almost always mandatory within phonological words. The particle **ke**, discussed in the previous section, is one such

example. It is phonologically light, and as might be expected, it forms a metrical constituent with the word following it. Combinations with the conjunction **kaa** have main stress on the conjunction.

(530) a. **kàkáa** or **kèkáa**
ke=kaa
REL=and
'when he'

b. **kàxkáa** or **kèxkáa**
ke-ex=kaa
REL-1=and
'when I'

When the relativizer combines with other words, it may or may not undergo vowel harmony.

(531) a. **kè kòníix** or **kà kòníix**
ko-níix
REL that-very
'from that very place which'

b. **kè malàham** or **kà malàham**
mala-hem
REL how.many-times
'whenever'

c. **kè mìnma'í** or **kà mìnma'í**
REL what way
'whichever way'

The relativizer **ke** also combines with demonstratives, regular pronouns and interrogative pronouns.

(532) a. **kè yóx̂**
REL that
'that which'

b. **kè 'ipí**
REL he/she
'whoever'

c. **kè 'isii**
REL who
'who'

d. **kè 'itúu**
REL what
'whatever'

The meaning of the elements of the clitic complex can be idiomatic. The combination of **ke káa** has the denotation 'when, while'. The clausal negative **wéet'u** plus a content interrogative pronoun provides "nothing, nobody, not at all" sense, as seen in (533).

(533) a. **wéet'u 'ìtúu**
not what
'nothing'

b. **wéet'u mànáa**
not what.how
'not at all'

In some cases adjacency is not required; nevertheless, the two words in the combination are linked.

(534) **wéet'u kii háama 'itúu hìwéewlùqse**
hii-wéewluq-se
not this man what 3-want-INC
'This man doesn't want anything.'

Optional cliticization applies with reduced forms of the copula – **wées**. The reduced form can have stress or be stressless, reducing to **wée** or **we**.

(535) a. **'ìsiinm wée háanit**
'isii-nm wee
who-ERG be make-NM
'Who is your maker?'[32]

b. **'ìsiinm [wə] háanit**

[32] This example is the first question from the Westminster Catechism translated into Nez Perce.

In (b), the copula is stressless and its vowel is realized as schwa. Pronunciation of the final **m** of the interrogative pronoun transitions immediately into the following glide.

Exceptions to vowel harmony sometimes occur with the benefactive suffix **-'ayn** (as discussed in §2.3.1.4.1, this suffix can function derivationally as well as a case suffix). The suffix **-'ayn** does not always condition harmonization, as seen in (536a).

(536)	a.	**cúułìm'àyn**	b.	**tò'ynóo'àyn**
		cúułim-'ayn		**tu'uynuu-'ayn**
		bull-BEN		tail-BEN
		'ring for a bull's nose'		'crupper'

One possible reason for this lack of harmony is that it is difficult to tell the difference between the stressless short diphthong **ay**, with the dominant vowel **a**, and the stressless, short diphthong **ey**, with the recessive vowel **e** (for additional discussion of vowel harmony and when it obtains, see Chapter 3.1). An alternative reason could be that the benefactive is actually a clitic and it attaches more loosely affixed to stems.

2.4. Syntax: The nature of clause and noun phrase

Two important characteristics of Nez Perce syntax are extremely free word order and zero pronominalization. When we consider additionally that Nez Perce has person

agreement on verbs only for third person, it follows that ambiguous utterances such as (537) will be generated.

(537) **hèkíce**
hek-cee
see-INC
'I see you.' or 'You see me.'

Like other such languages, Nez Perce has a number of ways to track arguments through the clause and to disambiguate reference when necessary. Certainly, it is only infrequently the case that the meanings of sentences like (537) are actually ambiguous to the hearer. The overall context of the utterance makes it clear what is meant.

Some of the means of disambiguation include optionally realized pronouns and a comprehensive case system, which has been illustrated already. Unambiguous clauses containing the verb in (537) are found in (538).

(538)	a.	**hèkíce 'íin 'ìmené**	b.	**hèkíce 'íine 'íim**
		hek-cee 'iin 'ime-ne		**hek-cee 'iin-ne 'iim**
		see-INC I you-OBJ		see-INC I-OBJ you
		'I see you.'		'You see me.'

Note that word order plays no role in disambiguation. Any order of the words in (538) is acceptable. It is the optional use of the pronouns with case marking that makes the meaning clear.

The sentences in (539) are actually somewhat unnatural. Sentences without pronouns are more common than those with them, and when pronouns are used, it is more likely that just the one that is necessary will be found.

(539) a. **hèkíce 'ìmené**
hek-cee 'imé-ne
see-INC you-OBJ
'I see you.'

b. **hèkíce 'íine**
hek-cee 'íin-ne
see-INC I-OBJ
'You see me.'

The second person pronoun **'ee** (**'eetx** for second person plural) may be substituted for a second person subject **'iim** or object **'imené** pronoun.

(540) a. **hèkíce 'ee**
hek-cee
see-INC you
'I see you.'

Although this pronoun does not accept case inflection, it is more commonly used than the other second person pronoun which takes case inflection. The pronoun in (540) would normally have focus intonation.

In this section, I give an overview of some additional aspects of Nez Perce syntax, beginning with the range of word order possibilities in §2.4.1. The discussion shifts to the range of clause types §2.4.2.

2.4.1. Free word order

Word order within the noun phrase is quite free, with one important restriction: numbers must precede the head noun. Noun phrases have case concord with demonstratives and adjectives. Alternatively, some speakers may inflect a number with case and leave the head noun bare. Word order in the clause is also extremely free.

Certain particles, such as those encountered above with subject-object agreement, must be clause initial. Otherwise there are very few restrictions.

2.4.1.1. The Noun Phrase

The most inflexible word order constraint in the Nez Perce noun phrase is requirement that a number precedes the head noun. Aside from that, practically any word order is allowable, although there are preferences.

(541) a. **páaxat xàyxáyx hìméeq'is pícpic**
five white big cat
'five big white cats'

b. **páaxat pícpic xàyxáyx hìméeq'is**
c. **páaxat xàyxáyx pícpic hìméeq'is**
d. **páaxat hìméeq'is xàyxáyx pícpic**
f. **xàyxayx páaxat hìméeq'is pícpic**
g. **xàyxáyx páaxat pícpic hìméeq'is**
h. **xàyxáyx hìméeq'is páaxat pícpic**
i. **hìméeq'is páaxat xàyxáyx pícpic**
j. **hìméeq'is xàyxáyx páaxat pícpic**
k. **hìméeq'is páaxat pícpic xàyxáyx**

All of the examples in (541) are grammatical, but **pícpic** cannot be at the beginning of the phrase, because this would put the head noun before the number.

(542) * **pícpic páaxat**

Adjectives seem to be a bit more natural following the noun for some speakers (543a), but the pre-head position is also used frequently (543b).

(543) a. **Kíi 'áayat sàyáq'ic hìkúuse pìk'úunx**
sayaq'ic hii-kuu-see piik'uun-x
this woman beautiful 3-go-INC river-ALL
'This beautiful woman is going to the stream.'

b. **Kíi sàyáq'ic 'áayat hìkúuse pìk'úunx**
sayaq-'ic hii-kuu-see piik'uun-x
this beautiful woman 3-go-INC river-ALL
'This beautiful woman is going to the stream.'

Some younger speakers may have come to prefer the pre-head position as a result of influence from English.

In actual speech, demonstratives usually precede the head noun, and regularly come at the very beginning of the noun phrase. However, other orders are possible.

(544) a. **kíi hìméeq'is pícpic hìq'uyímtètu tèwlikítpe**
hii-q'uyím-teetu tewlíikt-pe
this big cat 3-climb-HAB tree-LOC
'This big cat climbs trees.'

b. **hìméeq'is pícpic kíi hìq'uyímtètu tèwlikítpe**
hii-q'uyím-teetu tewlíikt-pe
big cat this 3-climb-HAB tree-LOC
'This big cat climbs trees.'

c. **hìméeq'is kíi pícpic hìqi'uyímtèty tèwlikítpe**
hii-q'uyím-teetu tewlíikt-pe
big this cat 3-climb-HAB tree-LOC
'This big cat climbs trees.'

Although Nez Perce has great freedom of word order, there are typical orders in which constituents are almost always found. Genitives almost always precede the head noun, but they can also follow.

(545) a. **mársìnm wálc 'úus**
mársi-nm 'e-wee-s
Marcie- ERG knife 3OB-be-INC
'It's Marcie's knife.'

b. **wálc mársìnm 'úus**
mársi-nm 'e-wee-s
knife Marcie-ERG 3OB-be-INC
'It's Marcie's knife'

Quantifiers normally precede and also follow.

(546) a. **là'ám' wálc híiwes 'ìlp'ílp**
hii-wee-s
all knife 3-be-INC red
'All the knives are red'

b. **wàlc là'ám' híiwes 'ìlp'ílp**
hii-wee-s
knife all 3-be-INC red
'All the knives are red'

2.4.1.2. The Clause

The clause is also characterized by extremely free word order. For the examples in (547), any of the orders of the three constituents of subject, verb and object is permissible.

(547) a. **'áayàtom páaqn'ìsaqa qèqíine.**
'áayat-um pee-qn'íi-see-qa qeqíit-ne
woman-ERG 3ON3-dig-INC-PST qeqiit-OBJ
'The woman was digging the qeqiit (an edible root).'

b. **'áayàtom qèqíine páaqn'ìsaqa.**

c. **páaqn'ìsaqa 'áayàtom qèqíine.**
d. **páaqn'ìsaqa qèqíine 'áayàtom.**
e. **qèqíine páaqn'ìsaqa 'áayàtom.**
f. **qèqíine 'áayàtom páaqn'ìsaqa.**

Obliques share in this freedom as well, as has been shown in the brief sketch of syntax above in § 2.2.1.

2.4.2. Types of clauses and morphological interaction

2.4.2.1. Equationals

Equational clauses like those in (548) include a form of the verb **wee** 'be' or **wc'ee** 'become'. Agreement is with third person subjects, which are uninflected for case, as are predicate nominals and predicate adjectives.

(548) a. **'ìtúu kíi híiwes**
hii-wee-s
what this 3-be-INC
'What is this?'

b. **yóx̂ híiwes yáaka'**
yoq hii-wee-s
that 3-be-INC black.bear
'That is a black bear.'

Zero pronominalization is common.

(549) a. **kùhét wìc'éeyu'**
wc'ee-u'
long become-IRL
'I will become tall.'

b. **tàmtàyn'áat hìwc'éeye**
tamtaayn-'aat hii-wc'ee-e
news-AGENT 3- become-PTV
'She became a preacher.'

The context of the discourse usually makes disambiguation unnecessary.

Verbs agree in number with the subject as do predicate nominals and adjectives, when there is a plural form of the noun or adjective.

(550) a. **'ìmé mìmyóoxat hìwsíix.**
mi-miyóoxat hii-wee-síix
they RED-chief 3-be-INC.PL
'They are chiefs.'

b. **'íin wéet'u wées mìyóoxat.**
wee-s
I not be-INC chief
'I am not a chief.'

Possession constitutes a special case of the use of **wee** 'be' and **wc'ee** 'become', which involves possessor raising, as discussed in §2.3.4.2.3.1. and summarized as follows: 1) The possessor is indicated with a genitive noun or pronoun marked with the ergative case; 2) The copula agrees with the possessor in number; 3) If the possessor is first or second person, then the copula is unmarked for person. If the possessor is third person, the copula is marked with **'e-**.

In the examples in (551), the verb **wee** has no person agreement, consistent with a first or second person subject, even though it appears at first that the subjects of these clauses are third person.

(551) a. **'íinim wées píicpic.**
'iin-nm wee-s
I-ERG be-INC cat
'I have a cat.'

b. **yóqo' wées 'íinim píicpic.**
yoq-u' wee-s 'iin-nm
that-EMPH be-INC I-ERG cat
'That is my cat.'

If it is assumed that the raised possessor is the subject, the lack of person agreement is explained.

Moving to third person possession, the agreement prefix **'e-** 'third person non-subject argument' occurs rather than **hii-** 'third person intransitive subject' or **pée-** 'third person subject acting on third person object.'

(552) a. **'ìpnǐm 'úus pǐcpic.**
'ipǐ-nim 'e-wee-s
3-ERG 3OB-be-INC cat
'She has a cat.'

b. **yóqo' 'úus 'ìpnǐm pǐcpic.**
yox̂-u' 'e-wee-s 'ipǐ-nim
that-EMPH 3OB-be-INC 3-ERG cat
'That is her cat.'

In all of the examples (551),(552), the object of possession is the same noun phrase – **pǐcpic**.

2.4.2.2. Intransitives

Many intransitive verbs have meanings that are essentially adjectival in nature (553).

(553) a. **'ìláatwìsa**
'láatwi-see
be.tired-INC
'I am tired'

b. **péelèyce**
péeley-cee
be.crazy-INC
'I am crazy'

Others have such meanings as 'sleep' and 'laugh'.

(554) a. **hìpnímse**
hii-pnim-see
3-sleep-INC
'she is sleeping'

b. **hìtíy'ecìx**
hii-tiy'e-ciix
3-laugh-INC.PL
'they are laughing'

No person marking is present for first and second person constructions (555a), while third person is indicated with **hii-** (555b).

(555) a. **kúuse qémyèxpx.**
kuu-see qémyex-px
go-INC Kamiah-ALL
'I/you are going to Kamiah.'

b. **hìkúuse háama qémyèxpx.**
hii-kuu-see qémyex-px
3-go-INC man Kamiah-ALL
'The man is going to Kamiah.'

A modification of person agreement indicates possessor raising. In (556) the verb **kóomayca** 'hurt' has a third person subject which in turn has a first person genitive possessor. The verb lacks the prefix **hii-**.

(556) **'íinim húusus k'óomàyca**
'iin-nm k'óomay-cee
I-ERG head hurt-INC
'My head hurts.'

Sentences with and without possession are compared in (557).

(557) a. **('íinim) pícpic k'óomàyca**
('iin-nm) k'óomay-cee
I-ERG cat hurt-INC
'My cat is sick.'

b. **pícpic hik'óomàyca**
hii-k'óomay-cee
cat 3-hurt-INC
'The cat is sick.'

In (b), **pícpic** is not possessed, and thus in this example the verb prefixes **hii-**.

Possessor raising is most consistently applied when the possessed noun is non-human. Third person agreement is present on the verb in both examples in (558), even though the subject **láwtiwaa** in the second example has a first person possessor.

(558) a. **hìkúuse háama qémyèxpx.**
hii-kuu-see qémyex-px
3-go-INC man Kamiah-ALL
'The man is going to Kamiah.'

b. **hìkúuse 'íinnim láwtiwàa qémyèxpx.**
hii-kuu-see 'iin-nm qémyex-px
3-go-INC I-ERG friend Kamiah-ALL
'My friend is going to Kamiah.'

The examples in (559) show that possessor raising is possible when the possessed noun is human.

(559) a. **hìwíhnène 'ìwéepne**
hii-wíhne-ne
3-leave-PTV wife
'The wife left.'

b. **'èwíhnène 'ìwéepne**
'e-wíhne-ne
3OB-leave-PTV wife
'His wife left'

Possessor raising appears to be obligatory when the possessed noun is non-human and optional when human.

2.4.2.3. Simple transitives

As was mentioned in §2.2.1, Nez Perce has a tripartite case system that marks transitive subjects, intransitive subjects, and direct objects all differently. The ergative and objective are again illustrated in the following examples:

(560)[33] a. **pìcpícnim làqáasna péecèpeqìckse**
picpic-nm laaqaac-ne pee-cepeqíck-see
cat-ERG mouse-OBJ 3ON3-catch-INC
'The cat is catching the mouse.'

b. **pìcpícnim làqáasna hìnéescèpeqìcksìx**
picpic-nm laaqaac-ne hii-nées-cepeqíck-síix
cat-ERG mouse-OBJ 3-PLOB-catch-INC.PL
'The cats are catching the mice.'

In (b), a plural subject is indicated with **-síix** and a plural object with **nées-**.

Detransitivization is an important phenomenon in Nez Perce syntax. Intransitive morphology is found with transitive verbs in two kinds of situations. One is akin to possessor raising described in the previous section. The other is a kind of antipassive. Rude (1986) has discussed both phenomena.

In the first case, transitive verbs are realized as intransitive when the direct object is possessed by the subject.

(561) a. **'èekíce pìcpícne**
'e-hek-cee picpic-ne
3OB-see-INC cat-OBJ
'I see the cat.'

---

[33] Example (560a) can also mean 'He is catching the cat's mouse' and (560b) can mean 'They are catching the cat's mice.'

b. **hèkíce** **píc̓pic**
hek-cee **picpic**
see-INC cat
'I see my cat.'

The only difference between the two examples is that the first has transitive morphology. In the second example, the verb lacks the transitive marker **'e-** and the object lacks the objective case marker **-ne**. The intransitive example has the interpretation that the **picpic** 'cat' is possessed by the subject. This kind of example resembles the possessor raising found with equationals and other intransitives discussed in the two previous sections. With those intransitives, possessor raising affected the subject agreement morphology, with the verb agreeing with the possessor. In (561), it is the object agreement morphology that is affected.

The second situation in which verbs are detransitivized is no less difficult to characterize. Many clauses are simply intransitive without there being any implication of possession. Both examples in (562) are grammatical, but the first one is more natural.

(562) a. **'ìpí** **hìqn'íise** **qèqíit**
'ipí **hii-qn'íi-see** **qeqíit**
she 3-dig-INC edible.root
'She is digging qeqiit.'

b. **'ìpním** **péeqn'ìse** **qèqíine**
'ipí-nm **pée-qn'íi-see** **qeqíit-ne**
she-ERG 3ON3-dig-INC edible.root-OBJ
'She is digging the qeqiit.'

The glosses are only approximate. Intransitive sentences like (562a) seem to be related to the indefiniteness or generic nature of an activity. Mass nouns are more likely to be the

objects of verbs that are morphologically intransitive than count nouns. What can be said with confidence is that object case marking for the object nominal and transitive morphology on the verb are inextricably linked. Either they appear together or neither appears.

Although I believe that definiteness of the object and transitivity are linked, there are sentences that I believe would be rendered as definite in English but are intransitive in Nez Perce. The following examples were given the same gloss by a group of elders. When they were asked what the difference was between them, one explained that in (563a) the speaker was actually looking at what someone was eating but didn't know what it was.

(563) a. **'ìtúune 'èepsíix**
'ituu-ne 'e-hip-síix
what-OBJ 3OB-eat-INC.PL
'What are you eating?'

b. **'ìtúu hìpsíix**
hip-síix
what eat-INC.PL
'What are you eating?'

The meaning of the verb and the tense also play a role, at least indirectly. The verb **hek** 'see' is almost always used transitively, all other things being equal, and the verb **weewluq** 'want' is usually used intransitively. The perfective aspect is more often associated with transitive than is the irrealis aspect.

A link to definiteness or focus can be found in these factors. Perhaps, when one comments on an object one sees, that thing is more likely to be a definite, specific object

than a generic item one wants. Something that will be acted on or experienced in the future may be less known, less specific than something that has already been acted on or experienced. It is unclear what the best notion is to characterize these phenomena, and more work needs to be done to clarify this the dependencies of transitivity in Nez Perce.

2.4.2.4. Bitransitives

In simple bitransitive clauses with **'nii** 'give', the goal is the grammatical direct object, whereas the semantic patient noun phrase has no case marking.

(564) a. **kii picpic 'ìpné 'èw'niise.**
'ipi-ne 'e-'nii-see
this cat he-OBJ 3-give-INC
'I'm giving him this cat.'

b. **kii picpic 'ée 'ìniise.**
'nii-see
this cat you give-INC
'I'm giving you this cat.'

In the second example, the verb lacks transitive morphology because the second person goal is the grammatical direct object.

These forms are likely to contain the cislocative when the speaker is the receiver of the object. The following comes from a simple Nez Perce prayer of thanks:

(565) **kii hipt 'ée néec'nìsem cìlàakt'áyn**
nées-'nii-seem cilaakt-'áyn
this food you PLOB-give-INC.CIS body-BEN
'...this food you gave us for the body...'

2.4.2.5. Negation

Nez Perce has several negation words, including **wéet'u** 'no, not' and **wéec'u** 'stop, quit'. The negation **wéet'u** combines with wh-pronouns to render meanings like 'nobody', 'nothing', and 'no way'. Both negation words here appear to include the emphatic suffix **-u'**, at least historically.

The normal syntactic position of negation words is either clause initial or just preceding the thing they negate.

(566) a. **wéet'u kìyú' wàtíisx**
kuu-ú'
not go-IRR tomorrow
'I won't go tomorrow.'

b. **háama wéec'u hìcèpelíhnìkse**
hii-cepelíhnik-see
man quit 3-work-INC
'The man is quitting work.'

By combining **wéet'u** with wh-pronouns, comprehensive negations are formed.

(567) a. **'èekíce wéet'u 'ìtúune**
'e-hek-cée
see-INC not what-OBJ
'I see nothing.'

b. **kú'nu wéet'u 'ìsíi hàaníisa 'ìsáaptàkay**
hii-hanii-see
don't.know not who 3-make-INC parfleche
'I don't know anyone who makes parfleches.'

The negative function word **kú'nu** 'I don't know' in (567b) is uninflected and applies only to first person.

Chapter 3 Segmental phonology

Although this dissertation focuses much of its attention on metrical stress, there are many other sound alternations of note in Nez Perce. In this chapter, I will discuss three such topics: vowel harmony, vowel hiatus, and fricativization.

3.1 Vowel Harmony

Nez Perce vowel harmony was a hot topic for generative phonologists in the 1960's and 70's. It is somethat unique among harmony systems, and it provides a challenge for analysis in that there is no single feature, such as [+Back] or [+Round], to which a spreading harmony can be attributed. In my analysis, I will suggest that Nez Perce simply has two different three-vowel systems in its lexicon. A word with its inflections must choose between one of the systems.

The inventory of vowels from 2.1.1.2. is repeated here (from Aoki 1970:10).

(1)

	Short			Long		
	Front	Central	Back	Front	Central	Back
High	i		u	iː		uː
Mid			o			oː
Low	æ	a		æː	aː	

Minimal sets showing contrasts for between the vowels and for vowel length, see Chapter 2.1.1.2.

When Nez Perce is considered as a five vowel system, it is somewhat unusual in that it has **æ** (written **e**) instead of **e** (hereafter, I will write **æ** as **e**; for more on Nez Perce orthographical conventions, see Chapter 2.1.5). The five vowel system can be described with just the features High, Front, Round, and Low. I assume that except for ± High, the features are privative.

(2) Vowels characterized by features

i	[+High, +Front]
e	[+Low, +Front]
a	[+Low]
o	[-High,+Round]
u	[+High, +Round]

(3) Vowel features

[+High]	**i, u**
[-High]	**o**
[+Front]	**i, e**
[+Round]	**u, o**
[+Low]	**a, e**

(4) Nez Perce five vowel system

	[+Front]		[+Round]
[+High]	**u**		
[-High]			**o**
[+Low]	**e**	**a**	

It is worth noting at this point that no tongue root feature is needed to describe this system. This issue will arise in the analysis because tongue root features have been proposed as a means of capturing the vowel harmony phenomena.

Aoki (1966b) provided the first comprehensive study of Nez Perce vowel harmony. The data then attracted considerable attention in the 1960's (Aoki 1966, Zimmer 1967, Chomsky and Halle 1968, Jacobsen 1968, Kiparsky 1968, Rigsby and Silverstein 1969) and 1970's (Zwicky 1970, Hall and Hall 1977, Silverstein 1979). It is an unusual kind of vowel harmony because it lacks any specific features that can be claimed to spread from one vowel to another.

Nez Perce morphemes either contain vowels from the "dominant" Set A or the "recessive" Set B (5). If a morpheme with a dominant vowel or vowels is concatenated with a morpheme or stem that has recessive vowels, all vowels in the resulting word will be of the dominant set.

(5) Set A (dominant) a. **i**

o

a

Set B (recessive) b. **i** **u**

e

The recessive-dominant correspondences are represented in (6).

(6) **e → a, u → o**

It is interesting that both sets contain the high front vowel **i**. There are morphemes that only have the vowel **i** and are dominant (e.g, **ck'iil** 'to destroy'), and others with only **i** that are recessive (e.g., **siis** 'soup'). However, there is no acoustic difference between **i** in a recessive word and **i** in a dominant word. This is an indication

that dominance and recessiveness are attributes of the morpheme rather than of the vowel. This would help to explain why **i** does not participate in vowel harmony. If the high front vowel can have a harmonizing feature, it would be odd that there is no difference in the vowel's pronunciation when it has that feature and when it does not. The following near minimal pair illustrates the contrast between two bound stems, both ot which have **i** but only one of which is dominant:

(7)	a.	/'**íic**/ (recessive)	**'íice'** 'mom (VOC)'	**ne'íic** 'my mother'
	b.	/'**íic**/ (dominant)	**'íica'** 'paternal aunt (VOC)'	**na'cíic** 'my paternal aunt'

There is at least one stem which was probably vowelless diachronically and was also dominant. The morpheme **mic'/mac'** may have been without underlying vowels: **mc'**. For dominance to be a feature of the morpheme rather than the vowel suggests that harmony is not linked to features. What vowels have are features, and what morphemes have are vowels.

Vowel harmony is both progressive and regressive. First, consider an example of regressive harmony in (8).

(8)	a.	**wéeyìkse** **weeyik-see** cross-INC 'I am going across'	b.	**wéeyìksène** **weeyik-sene** cross-RMT 'I went across long ago'

c. **wáayìksàqa**
weeyik-see-qa
cross-INC-REC
'I went across recently'

The verb stem **wéeyik** and the tense/aspect markers **-see** 'incompletive' and **-ne** 'remote past' all have vowels from the recessive set. When the 'past' **-qa**, which contains the dominant vowel **a**, is suffixed, each vowels changes to its corresponding dominant member.

The two compound nouns in (9) illustrate progressive harmony.

(9) a. **màc'yóosàtay**
mac'áyoo-setey
ear-hair
'ear hair'

b. **háamàtnon**
háama-tnúun
man-divorcee
'divorced man'

In the first case, 'ear hair' is composed of the stems **mac'áyoo** 'ear' and **sétey** 'hair'. When concatenated, the dominant stem **mac'áyoo** causes the vowels of the following recessive stem **sétey** to change to dominant vowels. The same process is seen in the case of divorced man, where the noun **háama** with dominant vowels causes the recessive vowels of **tinúun** 'divorcee' to change.

I find that for current speakers vowel harmony is primarily conditioned by stems. There are no prefixes that currently trigger hamony, and there is scant evidence that there were dominant prefixes in recent times. There are clearly no inflectional prefixes that are

dominant. It is possible that there were some verb derivational prefixes at one time which were dominant, but there are no productive dominant derivational prefixes at this time.

There are a few derivational suffixes that have dominant vowels. However, the only inflectional suffix that conditions harmony is **-qa**, which by itself indicates the recent past and in combination with the irrealis **-o'qa** indicates the conditional mood. This suffix conditions harmony in verb stems in the following examples:

(10)	a.	**kúuse** **kuu-see** go-INC 'I am going'		b.	**kosáaqa** **kuu-see-qa** go-INC-REC 'I just went'
(11)	a.	**'ecilúuse** **'e-cilúu-see** 3OB-boil-INC 'I am boiling it'		b.	**'acilóoyo'qa** **'e-cilúu-o'qa** 3-boil-CND 'I could have boiled it'

However, vowel harmony does not occur in the following examples.

(12)	a.	**'enméekunise** **'e-nméekuni-see** 3OB-see.approaching-INC 'I see him approaching'		b.	**'enméekuniseqa** **'e-nméekuni-see-qa** 3OB-see.approaching-INC-REC 'I recently saw him approaching'
(13)	a.	**hisepíinewise** **hii-sepíinewi-see** 3-measure-INC 'he is measuring'		b.	**hisepíinewiseqa** **hii-sepíinewi-see-qa** 3-measure-INC-REC 'he recently measured'

Both of the (b) examples have the recent past, but harmonization does not obtain.

By contrast, when the verb stem has dominant vowels, harmony does occur:

(14) a. **'ìmamáasàpakàyksìx**
'imemée-sepée-kayk-síix
2/3PL.REFL-CAUS-clean-INC.PL
'they clean themselves'

b. **'ànáaslàwyalàca**
'e-nées-láwyala-cee
3OB-PLOB-gaff-INC
'I am gaffing them'

In these two examples, the prefixes with recessive vowels become dominant when affixed to a stem that is dominant. I believe that the reason that harmony is primarily triggered by stems is that stems have their own paradigms of forms with inflection. The stems choose either the dominant set of vowels or the recessive set, and the inflectional morphology must have the same inventory of three vowels as the stem. I will make this proposal more explicit below.

Both Hall and Hall (1977) and Crook (1994) have proposed interpreting Nez Perce vowel harmony in terms of tongue root harmonization. In such an approach, the recessive vowels would be [-Retracted Tongue Root] and the dominant vowels would be [+Retracted Tongue Root] or alternatively, [+Advanced Tongue Root] and [-Advanced Tongue Root] respectively. The tongue root feature would be seen as spreading to the other vowels in a word. In the following example, the verb root **wéeyik** 'cross' and the incompletive **-see** would be [-RTR] or unspecified. The remote past **-qa** would be [+RTR] and would spread its features to the rest of the word as in (15).

(15) a. [-RTR] [-RTR]
| |
weeyik-see → **wéeyìkse**
cross-INC
'I am crossing'

b. [+RTR]

/ / |

wéeyik-see-qa → **wáayìksàqa**

cross-INC-REM

'I went across recently'

To my knowledge, no one has done the kind of laboratory investigation necessary confirm whether the tongue root systematically changes position in these words in a way consistent with tongue root harmony. There are several good reasons to believe that tongue root features do not lead in the right direction.

The first problem with the tongue root feature approach to Nez Perce vowel harmony is that this kind of harmony does not affect the high front vowel /**i** /. As I have stated above, this vowel is acoustically identical in both the dominant and recessive sets. By contrast, Nez Perce vowel harmony does affect the low vowel /**æ, a**/. This is the opposite of the pattern found with tongue root harmonies commonly found in West Africa, which typically affect non-low vowels. The following set of vowels illustrates [+ATR] (16a) and [-ATR] (16b) vowels in Okpe (Pulleyblank 1986).

(16) a. **i** **u** b. **ɪ** **ʊ**

e **o** **ɛ** **ɔ**

a **a**

Nez Perce has vowel allophones which correspond closely to those Pulleyblank has documented for Okpe, but Nez Perce vowel allophony is conditioned by syllable closure and the presence or lack of stress. The Nez Perce vowel allophones could have been readily adapted to a tongue root harmony system, if that was the kind of harmony system that Nez Perce had, but this has not occured.

A second problem is that the kind of shifts in vowels that we do see in Nez Perce are not those expected to be conditioned by movement in the tongue root. If the operant vowel feature were [Retracted Tongue Root] we would expect perhaps an **a/ɑ** alternation for the low vowel. We would not expect an **a/æ** alternation from [±RTR]. If the feature were [±Advanced Tongue Root], perhaps the **a/æ** alternation would follow, but then we would not expect the vowel **u** to become **o** when [-ATR]. One would need to posit a system where both [ATR] and [RTR] were present in order to get the **o/u** pair and the **a/e** pair to emerge naturally.

Perhaps a more important problem is that Nez Perce Vowel Harmony almost certainly did not arise from a tongue root alternation. Instead, it developed from an umlaut system in Proto-Penutian, described by Silverstein (1979) among others. Rude (1994) describes how this umlaut system is correlated with sound symbolic alternations such as the diminutive. Diminutives received the dominant vowels and the regular words had recessive vowels, although these alternations are no longer productive. In the near minimal pair in (7), 'paternal aunt' with dominant vowels becomes essentially 'little mother'.

One further problem with a feature spreading approach is that it predicts a system that is more productive and widespread than we see in the Nez Perce case. If there were a single feature that could characteize this phenomenon, we would expect to find other Nez Perce-like vowel harmony systems. The fact is, there are very few if any additional

systems. Nez Perce vowel harmony is an almost unique form of vowel harmony, while feature spreading harmonies are found in many parts of the world. Nez Perce vowel harmony seems to be somewhat fragile. While speakers can still produce very complex words, they are mostly loosing the harmony system. Current speakers sound the same or nearly the same as those taped in the 1960's. Assuming that pronunciation of vowels is essentially the same now as it was then, if these vowels have salient tongue root features, why should people lose harmony? The features are there; spreading of features is non-arbitrary. Vowel harmony ought to remain robust.

I suggest that different morphemes in Nez Perce simply have different vowel inventories - both of which contain / **i** /:

(17) <u>Three-vowel system #1</u> (recessive)

		[+Round]
[+High]	**i**	**u**
[+Low]	**e**	

<u>Three-vowel system #2</u> (dominant)

			[+Round]
[+High]	**i**		
[-High]			**o**
[+Low]		**a**	

This would be consistent with the tendency of Nez Perce toward stem induced harmony, since presumably stems are more likely to have lexical entries than are bound morphemes, especially inflectional ones.

I am claiming that in essence Nez Perce vowel harmony consists of harmonizing the morphemes of a word to the stem's phonemic inventory. If a speaker simply learns words in paradigms, then he isn't really doing vowel harmony. He is learning words with their inflections, and the form of the inflections for each stem that he learns are those

vowels which belong to the vowel inventory of the stem. This means that if you haven't learned a word in the recent past, or you haven't used it for a very long time, then when a linguist asks you to say it, you simply attach the recent past suffix to it and produce it, without creating a new lexical item that has the vowel inventory of the recent past (i.e., the dominant vowel inventory). For a speaker to produce a word that has undergone harmony, he must hear it from another speaker, and in a situation where the language is heard less and less, the population is forgeting what the recent past tense forms of words are.

I suggest that for the tense suffix **-qa**, the only inflectional suffix that is dominant, speakers had a robust paradigm of recent past forms for verbs, but these forms are being lost now since even elders often speak with each other in English. The harmonizing alternations that still obtain such as **kúuse**, **kòsáaqa** and **'èciluúse**, **'èciloósàqa** (see (10)-(11) above) are just those for the most common words like 'go' and 'boil'. Otherwise, speakers use components with both systems in the same word (see (12)-(13) above). Actually, this has happened for a long time with certain suffixes that Aoki (1979) observes do not always harmonize.

(18)	a.	**cúułìm'àyn** **cúułim-'ayn** bull-BEN 'for a bull', 'ring for a bull's nose'	b.	**pìk'úunlàykin** **piik'uun-laykin** river-near.by 'nearby the river'

Some important questions remain for this explanation of vowel harmony. One is why should one system dominant? In my explanation, either system is dominant in the

sense that it is the vowel inventory of the stem that determines the nature of the inflected word. However, it is also the case that the dominant set of vowels has more information than the other set. It reqires [-High] to characterize it in addition to [+High] and [+Front]. Both systems have to have **i**, because the high front vowel is the default epenthetic vowel. In addition, in a three vowel system that includes the feature [-High], the vowel most likely to be [-High] is **o** rather than **e** (i.e., the system **i, o, a** is better than either **e, u, a** or **e, o, a**).

3.2. *Vocalic hiatus*

An additional area of interest found among Nez Perce vowels is found under conditions of hiatus. These conditions occur word initially and word finally when inflectional and derivational morphology is added to verb stems. Three kinds of hiatus condidtions occur. Aoki (1970) describes these structures in (19b,c).

(19)	Environment	Morphological structure
a.	V_1V_2	V_1-V_2
b.	**ewe, awa**	**e-we, a-wa**
c.	V_1**h**V_2	V_1-**h**V_2

The configuration in (19a) is the one normally considered as hiatus. I have classified the other two environments along with first one because these configurations involve deletion of the intervocalic glide and formation of a long vowel. A series of VyV behaves like other series of V-Consonant-V, and indeed it is y that is epenthesized to resolve many cases of hiatus in environment (19a).

The following table shows how hiatus is resolved, with the alternation being blocked in (19b,c) by the presence of main stress on the second syllable.

(20) Hiatus and hiatus-like conditions in Nez Perce

Environment	*Result*		*Blocking*
Inflectional hiatus			
V_1V_2	y-Epenthesis	V_1yV_2	Never blocked
Derivational hiatus			
iV_2, **ii**V_2	Glide formation	**y**V_2/**iy**V_2, **iy**V_2	Never blocked
i-iin'	Glide formation	**yiin'**	Never blocked
V_1**iin'**	'-Metathesis	V_1**'iin**	Never blocked
u-eey', o-eey'	'-Metathesis	**u'ey, o'ay**	Never blocked
uu, oo	y-Epenthesis	**uyu, oyo**	Never blocked
eV_2, **a**V_2	Coalescence	V_2:	Lexical
Hiatus-like conditions			
ewe, awa	Coalescence	**uu, oo**	Main stress
V_1**h**V_2	Coalescence	V:	Main stress

3.2.1. Standard hiatus: Inflection and derivation

In Nez Perce, standard hiatus occurs when a vowel initial suffix is concatenated with a verb stem that ends in a vowel. It never obtains stem initially because there are no stems that do not begin with a consonant. It is necessary to distinguish between derivational and inflectional hiatus. Resolution of hiatus caused by inflectional morphology is completely straightforward; the glide **y** is epenthesized in every case. When hiatus is due to derivational concatenation, its resolution depends upon the vowels

involved, on the location of main stress, and upon whether the suffix includes a glottalized consonant or not. Hiatus may be resolved through glide formation, through glottal metathesis, or through coalescence. I will first address the inflectional cases before describing derivational forms.

When hiatus is created through inflectional morphology, its resolution is always made through epenthesis of **y**. The hiatus conditions described here are generated through affixation of the aspect-tense markers, the perfective **-e** and the irrealis **-ú'**, as well as the conditional mood **-o'qa**. Following a C-stem verb, these suffixes have the form **-ne**, **-nú'**, and **-no'qa**, following the regular pattern of C-stems (for more on stem types see Chapter 2.3.4.1.1), so examples will be drawn only from S-stem verbs.

The glide **y** is epenthesized or formed whether or not the vowels are identical. I will first provide examples where $V_1 = V_2$ and then where $V_1 \neq V_2$.

uu / oo→ uyu / oyo

(21)	a.	**cìlúuse** **cilúu-see** boil-INC 'I am boiling (something)'		b.	**cìlúuyù'** **cilúu-ú'** boil-IRR 'I will boil (something)'
(22)	a.	**wàtóosa** **watóo-see** wade-INC 'I am wading'		b.	**wàtóoyò'qa** **watóo-o'qa** wade-CND 'I might have waded'

ee / aa → eye / aya

(23)	a.	**wìc'éese** **wc'ee-see** become-INC 'I become'	b.	**wìc'éeye** **wc'ee-e** become-PTV 'I became, I was born'
(24)	a.	**'àsàpaláhsasa** **'e-sapaláhsa-see** 3OB-put.up-INC 'I am setting it up' (a tipi)	b.	**'àsàpaláhsaya** **'e-sapaláhsa-e** 3OB-put.up-PTV 'I set it up'

There are no clear cases of inflection generated hiatus where both vowels are **i**. There are many cases of this kind of hiatus that are generated by derivational morhology. I will present those cases with the derivational examples below.

The glide **y** is epenthesized when $V_1 \neq V_2$, as the following examples illustrate.

ue / oa → uye / oya

(25)	a.	**hìtqelúuse** **hii-tqelúu-see** 3-swim-INC 'he is swimming'	b.	**hìtqelúuye** **hii-tqelúu-e** 3-swim-PTV 'he swam'
(26)	a.	**hìwatóosa** **hii-watóo-see** 3-wade-INC 'he is wading'	b.	**hìwatóoya** **hii-watóo-e** 3-wade-PTV 'he waded'

ie / ia → iye / iya

(27)	a.	**qìn'íise** **qn'ii-see** dig.roots-INC 'I am digging roots'	b.	**qìn'íiye** **qn'ii-e** dig.roots-PTV 'I dug roots'

(28)	a.	**hàníisa** **hanii-see** make-INC 'I am making'		b.	**hàníiya** **hanii-e** make-PTV 'I made'

iu / io → iyu / iyo

(29)	a.	**'ìníise** **'nii-see** give-INC 'I am giving'		b.	**'ìníiyù'** **'nii-ú'** give-IRR 'I will give'
(30)	a.	**hàníisa** **hanii-see** make-INC 'I am making'		b.	**hàníiyò'** **hanii-ú'** make-IRR 'I will make'

If V_1 is short **i**, then this high, front vowel becomes only a glide as long as this does not create a CC onset (complex onsets are not allowed in Nez Perce; syllable structure is discussed in Chapter 2.1.3). In (31b), resolution of hiatus of **iu** is made by glide formation. The deletion of the vowel **i** is blocked in (31a), where this would create a CC onset.

iV_2 → $ìyV_2$ yV_2

(31)	a.	**kìyú'** **ki-ú'** go-IRR 'I will go'		b.	**hìkyú'** **hii-ki-ú'** 3-go-IRR 'he will go'
(32)	a.	**'èhéetewìse** **'e-heetewi-see** 3OB-love-INC 'I love her'		b.	**'èhéetèwyù'** **'e-héetewi-ú'** 3OB-love-IRR 'I will love her'

When V_1 is long **ii**, this vowel will survive if it has main stress or secondary stress (34a), but if this position is stressless **i** can reduce entirely to **y** (34b).

<u>**ii**V_2 → **ìy**V_2</u>

(33)	a.	**'èséepn'ìse**	b.	**'èséepn'ìye**
		'e-séepn'ii-see		**'e-séepn'ii-e**
		3OB-ask.question-INC		3OB-ask.question-PTV
		'I am asking him a question'		'I will ask him a question'

<u>**ii**V_2 → **ìy**V_2 **y**V_2</u>

(34)	a.	**'è'wíiye**	b.	**pí'èwye**
		'e -'wi-e		**píi-'wi-e**
		3OB-shoot-PTV		RECIP -shoot-TV
		'I shot it'		'we shot at each other'

There is some interspeaker variation on the reduction of **i** to **y** in these contexts.

Hiatus is also formed through derivational affixation. There are several vowel initial derivational affixes which augment the Nez Perce verb lexicon (for more on derivational affixes, see Chapter 2.3.4.3). These include **-aat** 'as object passes by', **-eeyik** 'move about', **-uukini** 'as object approaches subject', and **-úu** 'toward (human) object'. There is also the 'benefactive' derivational suffix, which has a different morphological shape depending on the verb's aspect. If the verb is in the perfective, perfect, or irrealis aspect, the suffix's form is underlyingly **-e'ny**, and in the other aspects it is **-eey'**. There is in addition the deverbal attributive suffix **-iin'** (for discussion of deverbals see Chapter 2.3.4.6). Resolution of hiatus is affected by the presence of glottalization on the suffix in these last two cases.

With derivational morphology, hiatus is treated much the same. The glide **y** always forms when the stem ends in **i**. This also happens with the stem to which the attributive **-iin'** attaches ends in **i**.

iV_2, **ii**V_2	Glide formation	**y**V_2/**iy**V_2, **iy**V_2
i-iin'	Glide formation	**yiin'**

However, when the stem ends in a vowel other than **i**, and the suffix is the attributive, then the suffix's glottalization is metathesized to form a glottal stop onset rather than forming a glide.

V_1**iin'**	'-Metathesis	V_1**'iin**

With round vowels, glottalization is also metathesized to create an onset instead of epenthesizing **y** when the benefactive suffix is affixed.

u-eey', o-eey'	'-Metathesis	**u'ey, o'ay**

When there is no glottalized sonorant in the suffix, then **y** is epenthesized when the stem ends in a round vowel.

uV_2, **o**V_2	y-Epenthesis	**uy**V_2, **oy**V_2

When the stem ends in a low vowel and is followed either by a round vowel or another low vowel, then the result is coalescence rather than epenthesis. The resulting long vowel has the identity of V_2, the vowel of the suffix.

eV$_2$, aV$_2$ Coalescence V$_2$:

Some speakers insert a glide in these cases rather than producing a form with coalescence. I will now provide the data that illustrate these observations.

When the stem ends in the high front vowel, a glide is always formed. In (36), the verb **síiwi** 'to spread' (butter or jam) affixes the benefactive, forming a glide before the suffix's low vowel. In the second example set, the verb **hinmii** 'neigh' affixes **-úu** 'toward (human) object', forming a long vowel before the following **oo**.

iV$_2$ → iyV$_2$

(36)	a.	**síiwise** **síiwi-see** spread-INC 'I am spreading' (something)	b.	**'èsíiwiyèy'se** **'e-síiwi-éey'-see** 3OB-spread-BNF-INC 'I am spreading it for him'
(37)	a.	**hìinmíisa** **hii-hinmii-see** 3-neigh-INC 'it neighs'	b.	**pàanmiyóosa** **pée-hinmii-uu-see** 3ON3-neigh-toward-INC 'it neighs at him'
(38)	a.	**hàníisa** **hanii-see** make-INC 'I am making'	b.	**hàniyéey'se** **hanii-eey'-see** make-BNF-INC 'I make for him'

Glide formation also obtains when both vowels in hiatus are **i**. If V$_1$ is long **ii** and lacks main stress, then depending on the stem, resolution of hiatus may involve the high vowel becoming only a glide.

ii-i → yi

(39)	a.	**'è'wíise**	b.	**'èwyíin**
		'e-'wii-see		**'wii-íin**
		3OB-shoot-INC		shoot-ATRB
		'I am shooting it'		'shot'

ii-i → íiyi

(40)	a.	**hàníisa**	b.	**hàníiyin'**
		hanii-see		**hanii-in'**
		make-INC		make-ATRB
		'I am making'		'made'

When Nez Perce sonorants are glottalized, glottalization is realized before the sonorant's closure or approximation. When the attributive suffix attaches to a stem that does not end in **i**, the suffix's glottalization is realized as glottal stop in onset position for the suffix.

V_1-iin' → V_1'iin

(41)	a.	**cìlúuse**	b.	**cilúuy'n**
		cilúu-see		**cilúu-iin'**
		boil-INC		boil-ATRB
		'I am boiling' (something)		'boiled'
(42)	a.	**yàx̂sáasa**	b.	**yax̂sa'íin**
		yax̂saa-see		**yax̂saa-iin'**
		irrigate-INC		irrigate-ATRB
		'I am irrigating'		'irrigated'

This same kind of glottal metathesis is found when the benefactive suffixes to a stem ending in a round vowel.

u-eey'/o-eey' → u'ey/o'ay

(43)	a.	**cìlúu'èyse** **cilúu-eey'-see** boil-BNF-INC 'I am boiling for him'	b.	**wàtóo'àysa** **watóo-eey'-see** wade-BNF-INC 'I am wading for him'

When the suffix lacks a glottalized sonorant, **y** is epenthesized following a round vowel.

This obtains when V_2 is either a low vowel or round.

uu, oo → uyu, oyo

(44)	a.	**pètqèluyúuse** **pée-tqelúu-úu-see** 3-swim-toward-INC 'he is swimming toward him'	b.	**wàtoyóosa** **watóo-úu-see** wade-toward-INC 'I am wading toward' (someone)

However, when V_1 is a low vowel, it usually coalesces with the following vowel.

eu, ao → uu, oo

(45)	a.	**tíy'ese** **tíy'e-see** laugh-INC 'I laugh'	b.	**'ètiy'úuse** **'e-tíy'e-úu-see** 3OB-laugh-toward-INC 'I laugh at him'
(46)	a.	**híicasa** **híica-see** climb-INC 'I am climbing'	b.	**hìcó'sa** **híica-ú'-see** climb-in.direction.of-INC 'I climb up in that direction'
(47)	a.	**'è'pt'éese** **'e-'pt'ée-see** 3OB-strike-INC 'I strike it'	b.	**'è'pt'úukinìsem** **'e-'pt'ée-úukini-see-m** 3OB-strike-as.approaches-INC-CIS 'I strike it as it comes at me'

ee, aa → ee, aa

(48) a. **'è'pt'éese**
'e-'pt'ée-see
3OB-strike-INC
'I strike it'

b. **'è'pt'éeyse**
'e-'pt'ée-eey'-see
3OB-strike-BNF-INC
'I strike it for him'

(49) a. **tìtóolàsa**
ttóola-see
forget-INC
'I forget'

b. **'àttóolày'sa**
'e-ttóola-eey'-see
3OB-forget-BNF-INC
'I forget his'

I also have examples where a glide is formed instead of the vowels coalescing.

ee → eye

(50) a. **péetèn'wese**
pée-ten'wee-see
3ON3-speak.to-INC
'he is speaking to her'

b. **péetèn'weyèy'se**
pée-ten'wee-eey'-see
3ON3-speak.to-BNF-INC
'he is speaking to her for him'

I believe that lack of fully productive coalescence may be more common with speaker's who are relatively younger.

3.2.2. Intervocalic *w* and coalescence

The sequences **ewe/awa** coalesce to **uu/oo**, unless coalescence is blocked by stress or the stem. In coalescence, a round vowel is produced. Whether the vowel is [±High] is determined by vowel harmony.

(51) **ewe → uu** **awa → oo**

Coalescence only occurs when $V_1=V_2$, and V is [+Low]. Coalescence is blocked in most stems when the second syllable has primary stress. It is also blocked lexically in a few stems.

In the examples in (52)-(54), the sequence **ewe** coalesces to **uu**.

ewe → uu

(52)	a.	**hìwepéecese** **hii-wepéece-see** 3-touch-INC 'he touches'	b.	**'ùupéecese** **'e-wepéece-see** 3OB-touch-INC 'I touch it'
(53)	a.	**wèyecéese** **weyecee-see** dance-INC 'I m dancing'	b.	**hìpùuyecéese** **hii-pe-weyecee-see** 3-PL-dance-INC 'they danced'
(54)	a.	**hiwéetkuy'kse** **hii-wéetkuy'k-see** 3-take.away-INC 'he is taking away'	b.	**púutkuy'kse** **pée-wéetkuy'k-see** 3ON3-take.away-INC 'he is taking it away'

In each case, primary stress is either assigned to a vowel other than the one formed by coalescence or it would have been assigned to the accented vowel preceding the **w** that coalesces. In examples (55)-(56), the series **awa** coalesces to **oo**.

awa → oo

(55)	a.	**hìwatóoyò'** **hii-watóo-ú'** 3-wade-IRR 'he will wade'	b.	**pòotóoyò'** **pe-watóo-ú'** PL-wade-IRR 'we will wade'

(56) a. **póopciy'àwca**
pée-wéep-ciy'aw-cee
3ON3-hand-strike-INC
'he is beating him'

b. **'óopciy'àwca**
'e-wéep-ciy'aw-cee
3OB-hand-strike-INC
'I am beating him'

c. **píiwàpciy'àwca**
pii-wéep-ciy'aw-cee
RECIP-hand-strike-INC
'we are beating each other'

With the complex stem **wéep-ciy'aw** 'beat' (56), coalescence takes place regardless of where main stress is assigned. In (56a), the accented prefix would be assigned main stress and in (56b) it is the prefix **wéep-** 'hand' (example (56c) is included to show that this stem does not begin with **oo**). Stems like 'beat', which always undergo coalescence, are exceptional. It is more common to find that coalescence is blocked if main stress is assigned to the second syllable, the one that has **w** as its onset.

(57) a. **hìpawáaxna**
hii-pe-wáaq-ne
3-PL-wake-PTV
'They woke up.

b. **'àsapóoxna**
'e-sepée-wáaq-ne
3OB-CAUS-wake-PTV
'I awoke him'

(58) a. **hìpewéeyìke**
hii-pe-wéeyik-e
3-PL-cross-PTV
'they crossed over'

b. **hìstúuyìke**
hii-sté-wéeyik-e
3-with.eyes-cross-PTV
'he looked across'

In the example sets (57)-(58), coalescence is blocked if stress is assigned to the vowel following the **w**. Coalescence obtains if stress would have been assigned to the vowel preceding the glide.

The root **wéeyik** allows coalescence depending upon the position of main stress and depending upon which derivational prefix is involved. In (59), I have given an example where **wéeyik** allows coalescence with the derivational prefix **sté** 'with the eyes'. In both of the following examples it is blocked with the prefixes **túule-** 'with the foot' and **wúule-** 'riding'.

(59) a. **tùulewèyikúuse**
túule-wéeyik-úu-see
with.foot-cross-toward-INC
'I cross towards on foot'

b. **wúulewèyikse**
wúule-wéeyik-see
riding-cross-INC
'I ride across'

A few stems such as 'want' never undergo coalescence.

(60) a. **wéewluqse**
wéewluq-see
want-INC
'I want'

b. **péewewluqse**
pée-wéewluq-see
3ON3-want-INC
'he wants it'

3.2.3. Intervocalic *h* and coalescence

The third kind of hiatus involves intervocalic **h**, and is resolved by deletion of **h** and the formation of a single long vowel. The long vowel is syllabified with the preceding consonant as the onset. I do not perceive these vowels as being double articulated. Deletion of **h** is blocked if main stress is located on the second syllable, the one which has **h** as onset. This is seen in (61a).

ihi → ii

(61) a. **hìhíce**
hii-hi-cee
3-say-INC
'he says'

b. **hìicáaqa**
hii-hi-cáaqa
3-say-REM
'he just said'

iha/aha → aa

(62) a. **hàníisa**
hanii-see
make-INC
'I am making'

b. **hàaníisa**
hii-hanii-see
3-make-INC
'he is making'

ihe/ehe → ee

(63) a. **hèkíce**
hek-cee
see-INC
'I see'

b. **hèekíce**
hii-hek-cee
3-see-INC
'he sees'

When there is primary stress on the second syllable, deletion of **h** and coalescence is blocked. When primary stress would be assigned to the syllable preceding the **h**, coalescence obtains. In the following example set (64), coalescence is blocked when primary stress is assigned to the stem vowel following **h** (64a,c). The accented irrealis suffix attracts stress to the ultima in (64b), allowing coalescence. In (64d), the accented prefix attracts primary stress to the syllable preceding the **h**, and again coalescence occurs.

(64) a. **hìpehípe**
hii-pe-hip-e
3-PL-eat-PTV
'they ate'

b. **hìpèepú'**
hii-pe-hip-ú'
3-PL-eat-IRR
'they will eat'

c. **pèhípe**
pe-hip-e
PL-eat-PTV
'we ate'

d. **péepe**
pée-hip-e
3ON3- eat-PTV
'he ate it'

The same pattern is seen in the following example set where the stem vowel is **e**.

(65) a. **hìpehéxne**
hii-pe-hek-ne
3-PL-see-PTV
'they saw'

b. **hìpèexnú'**
hii-pe-hek-nú'
3-PL-see-IRR
'they will see'

c. **pèhéxne**
pe-hek-ne
PL-see-PTV
'we saw'

d. **péexne**
pée-hek-ne
3ON3-see-PTV
'he saw it'

A further example is given in (66) where main stress blocks coalescence.

(66) a. **hìhíce**
hii-hi-cee
3-say-INC
'he says'

b. **péece**
pée-hi-cee
3ON3-say-INC
'he is telling him'

3.2.4. Analysis of hiatus

Casali (1996) provides a truly comprehensive treatment of vocalic hiatus in terms of both data and its theoretical implications. In his approach, Casali does not follow McCarthy and Prince (1995) in the use of Dep-V, Max-V, and Ident-IO constraints.

Instead, he takes the approach of Prince and Smolensky (1993) and Kirchner (1993), where features are added and subtracted. He holds that there is likely no need to have specific constraints to deal with the epenthesis and deletion of C and V themselves, since segments are just sets of features. If one gets rid of all of the features, then the segment will be gone.

I find that with respect to the Nez Perce data that Casali's approach is correct in arguing for the need to have constraints that govern the insertion and deletion of features. However, I also find that there is a need to specifically treat the insertion and deletion of C and V nodes. I will argue in this section that in Nez Perce the insertion and deletion of C and V nodes is "cheap", the constraints Dep-C/V and Max-C/V being ranked low. I also find that spreading features to adjacent positions is ranked low. However, insertion of features or deletion of features is "expensive"; the constraints that govern these changes to the input are highly ranked. Adding or removing information in terms of features is less preferred.

The Nez Perce strategy for resolving hiatus is first to provide an onset for a syllable. This is required by the constraint ONSET (Prince and Smolensky 1993) which is violated when a syllable lacks an onset. This constraint is undominated in Nez Perce. This language never allows syllables without onsets, and ONSET prevents the heterosyllabification of adjacent vowels; a configuration such as <u>V.V</u> cannot be allowed. Some onset must be created, or the vowels must be tautosyllabified.

Tautosyllabification of adjacent vowels cannot include glide formation for V_1 if this would result in a complex onset. The constraint *COMPLEX ONSET (Prince and

Smolensky 1993) is also undominated and as such it prevents configurations like CyV and CwV where these would form an onset. Thus Nez Perce must either epenthesize, delete, or make do with what it has in the underlying representation to prevent the violation of ONSET and *COMPLEX ONSET.

Optimality Theory predicts that a language will take the least expensive strategy available to it to prevent a violation of a highly ranked constraint. The following table represents violations in terms of their expense from highest to lowest.

(67)

Result	Changes	Constraint violated
Coalescence	Blend segments	UNIFORMITY
y-Epenthesis	Add C and [+High]	Dep(+High)
'-Epenthesis	Add C and spread	Dep-C, Linearity
Glide Formation, i-Deletion	Add C, spread, and delete V	Dep-C, Share(F) Max-V
Glide formation	Add C and spread	Dep-C, Spread(F)

In each case but the most expensive, a consonant node is inserted, violating Dep-C. Where it is possible to spread features rather than insert them, then this is done. When there are no appropriate feature to spread, then one must be inserted. When insertion is not possible, then the constraint UNIFORMITY must be violated and the vowels undergo coalescence. UNIFORMITY is proposed by McCarthy and Prince (1995) to prevent the formation of blended segements (Casali uses the analogous constraint SEGMENT INTEGRITY). Beginning with the cheapest strategy, I will provide the crucial examples from the data.

Glide Formation: If the stem ends in **i**, a glide is formed.

(68)	a.	**'èsíiwiyèy'se**	b.	**hàníiyin'**
		'e-síiwi-éey'-see		**hanii-in'**
		3OB-spread-BNF-INC		make-ATRB
		'I am spreading it for him'		'made'

If the high front vowel lacks stress and it can be deleted without violating COMPLEX ONSET, then **i** becomes just a glide.

(69) **'èwyíin**
'wii-íin
shoot-ATRB
'shot'

Since Optimality takes a purely representational approach, it is not possible to have spreading per se. Instead I suggest that features are shared between the high vowel **i** and a following consonant node that is inserted to serve as a coda in these contexts.

(70)
```
 i  C
 |  /
[+High]
```

Sharing of a feature is preferable to insertion of one.

The analysis requires additional constraints to make it fully coherent. In addition to Dep-C, ONSET, and *COMPLEX ONSET, there must be constraints which prevent the unnecessary sharing of features and the presence of empty C nodes. I will simply define SHARE (F) and *EMPTY-C, respectively for these tasks.

(71) SHARE (F) "Features are not shared between segments"

(72) *EMPTY-C: "Do not allow a C node to be unfilled"

In the following tableau, the results of these constraints are seen. Candidate (a) wins because it does not violate ONSET (cadidate d), it does not have an empty consontant node (candidate d), or insert a feature (candidate c). This tableaux shows that *EMPTY-C and INSERT(F) must be ranked more highly than Dep-C and SHARE(F).

(73)

'e-síiwi-éey'-see	ONSET	*EMPTY-C	INSERT(F)	Share (+High)	Dep-C
☞ a. **'esíiwiyey'se**				*	*
b. **'esíiwi.ey'se**	*!				
c. **'esíiwitey'se**			*!		*
d. **'esíiwiCey'se**		*!			

This is the least expensive solution to hiatus.

<u>Glottal metathesis</u>: When the feature [+High] cannot be spread, then if the feature [+Constricted Glottus] is present on a sonorant in the suffix, glottalization is reordered to the empty consonant position.

(74) a. **cìlúu'èyse**
cilúu-eey'-see
boil-BNF-INC
'I am boiling for him'

b. **wàtóo'àysa**
watóo-eey'-see
wade-BNF-INC
'I am wading for him'

(75) **C** **N**
\
[+Constricted Glottus]

Unnecessary metathesis of glottal features will be controlled with the constraint in (76), from McCarthy and Prince (1995).

(76) LINEARITY: Features must be assigned to the same position on the output as in the input.

The examples in (75) show that Spread(+High) must be ranked above Linearity. In both of these examples, [+High] could have been spread to the left, but instead glottalization is reordered to the onset position.

(75)	a.	**cìlúuy'n**	b.	**yàx̂sa'ín**
		cilúu-iin'		**yax̂saa-iin'**
		boil-ATRB		irrigate-ATRB
		'boiled'		'irrigated'

In (75a), glottalization is realized as constriction that occurs before the sonorant: [**u'yn**]. Thus, this example has the same behavior as (75b). The ranking is illustrated in (76)

(76) SHARE(+High) » LINEARITY (+Spread Glottus)

The following tableau shows the role and rankings of these constraints.

(77)

/yax̂saa-iin' /	ONSET	Share (+High)	Linearity (+Spr. Glt.)	Dep-C
☞ a. **yax̂sa'ín**			*	*
b. **yax̂say'ín'**		*!		*
c. **yax̂sa.ín'**	*!			

Candidate (a) is better than candidate (b) because it violates the lower ranked Linearity constraint rather than Share(+High). Candidate (c) looses because it violates ONSET.

If the underlying representation does not have a feature that can be shared, then one must be inserted. Nez Perce inserts the feature [+High].

(78)	a.	**pètqèluyúuse**	b.	**wàtoyóosa**
		pée-tqelúu-úu-see		**watóo-úu-see**
		3-swim-toward-INC		wade-toward-INC
		'he is swimming toward him'		'I am wading toward' (someone)

(79) C
|
[+High]

This strategy is analogous to the previous ones in that a C node is inserted, but the insertion of a feature [+High] is what makes this strategy different. Obviously, since Nez Perce does not utilize the insertion of **w** to resolve hiatus, the sharing of [+Round] must be prevented:

SHARE(+Round): "The feature [+Round] is not shared between segments"

Nez Perce does not form round back glides in any of is phonological alternations. In the following tableaux, the best candidate has the feature [+High] inserted, violating Dep(+High), define in (80).

Dep(+High): "When [+High] is in the output, it must be in the UR"

(80) SHARE(+Round) »Dep(+High):

There is no less expensive way to resolve hiatus since the alternatives require either violation of ONSET or of sharing the feature [+Round] to form the glide **w**.

(81)

/watóo-o' /	ONSET	Share (+Round)	DEP (+HIGH)	Dep-C
☞ a. **watóoyo'**			*	*
b. **watóo.o'**	*!			
c. **watóowo'**		*!		*

In the last case, we find some words that undergo coalescence. In these cases, the vowels are either identical (82) or they have a round vowel following a low vowel (83).

(82) a. **tìtóolàsa**
ttóola-see
forget-INC
'I forget'

b. **'àttóolày'sa**
'e-ttóola-eey'-see
3OB-forget-BNF-INC
'I forget his'

(83) a. **tíy'ese**
tíy'e-see
laugh-INC
'I laugh'

b. **'ètiy'úuse**
'e-tíy'e-úu-see
3OB-laugh-toward-INC
'I laugh at him'

These cases involve a violation of the constraint UNIFORMITY (84). The constraint Max(round) is required (85), and must outrank UNIFORMITY so that in epenthesis, [+Round] is not lost.

(84) UNIFORMITY: "Do not blend segments"

(85) MAX(Round): "If [Round] is in the input, it must be in the output"

(86) MAX(Round) » UNIFORMITY

The following tableau shows that Max(Round) outranks UNIFORMITY. Otherwise, candidate (b) would win.

(87)

'e-tíy'e-úu-see	ONSET	Max (Round)	UNIFORMITY	Dep-C
☞ a. **'ètiy'úuse**			*	*
b. **'ètiy'éese**		*!		
c. **'ètiy'e.úuse**	*!			

These examples require the lexical specification that insertion of a glide be prohibitted.

The examples where a sequence of **ewe/awa** becomes **uu/oo**, are like the previous example in that [Round] is preserved when the sequence coalesces.

(58) a. **hìpewéeyìke**
hii-pe-wéeyik-e
3-PL-cross-PTV
'they crossed over'

b. **hìstúuyìke**
hii-sté-wéeyik-e
3-with.eyes-cross-PTV
'he looked across'

The constraint in (88) requires coalescence, and outranks UNIFORMITY.

(88) ***ewe/awa**

(89) ***ewe/awa** » UNIFORMITY

Together, these constraints require that the sequence be reduced to a long vowel, but one that maintains the feature [Round]. Candidate (a) does this by violating UNIFORMITY.

(90)

hii-sté-wéeyik-e	***ewe awa**	Max (Round)	UNIFORMITY
☞ a. **hìstúuyìke**			*
b. **hìstéeyìke**		*!	
c. **hìstéweyìke**	*!		

Candidate (b) violates Max(Round), and so it looses. Candidate (c) violates ***ewe/awa**.

The fact stress usually blocks coalescence can be represented by UNIFORMITY UNDER STRESS:

(91) UNIFORMITY UNDER STRESS: "Do not blend segments in syllables with main stress"

This constraint must outrank ***ewe/awa**:

(92) UNIFORMITY UNDER STRESS (UUS) » ***ewe/awa**.

As the following tableau shows, being the onset of a stressed syllable allows the UUS to prevent the **we** from coalescing.

(93)

hi-pe-wéeyìk-e	UUS	***ewe awa**	Max (Round)	UNIFORMITY
☞ a. **hìpewéeyìke**		*		
b. **hìpúuyìke**	*!			*

3.3. Fricativization

Aoki (1970) describes a process of fricativization in which the back stops **k, q** fricativize to **x, x̂** respectively, both before a sonorant consonant and word finally. The affricate **c**, which takes the position of a stop in the consonant inventory /**p t c k q ʔ**/, becomes **s** only before a sonorant consonant. In SPE notation, these alternations can be described as follows:

(94) a. **k, q** → **x, x̂** / ___ [+ Consonantal, + Sonorant], #

b. **c** → **s** / ___ [+ Consonantal, + Sonorant]

In both cases, the feature [-Continuant] is replaced by its opposite value. The following examples illustrate the alternations for the back stops:

k → x

(95)	a.	**tìn'úkin** **tn'uk-in** die-NM 'dieing, death'		b.	**tìn'xníin** **tn'uk-níin** die-ATRB 'dead'
(96)	a.	**tasíipx** **tasiipk** cow.elk 'cow elk'		b.	**tasíipkpa** **tasiipk-pe** cow.elk-LOC 'by a cow elk'

q → x̂

(97)	a.	**yóqo'** **yoq-u'** that-EMPH 'that very one'		b.	**yòx̂mé** **yoq-me** that-HUM.PL 'those (persons)'

c. **yox̂**
yoq
'that'

(98) a. **tàsqíin**
tasq-híin
fat-ATRB
'fatty'

b. **tàsáx̂ne**
tasq-ne
fat-OBJ
'fat (OBJ)'

c. **tasx̂**
tasq
'fat'

Additional examples:

(99) a. **cíiqce**
'I am speaking'

ciix̂ne
'I spoke'

b. **tóosx**
'high, superior'

watóosksa
'I praise, speak highly'

The contrasting behavior of the affricate is seen in the following examples. In the word's uninflected form, word final **c** does not undergo lenition, but it does so preceding a sonorant consonant.

<u>c → s</u>

(100)

a. **yú'c**
yu'c
poor
'poor one'

b. **yú'sme**
yu'c-me
poor-HUM.PL
'poor people'

c. **yú'cki**
yu'c-ki
poor-INST
'poor one (INST)'

(101)

a.	**pálx̂c**	b.	**pálx̂snim**	c.	**pálx̂cki**
	pálx̂c		**pálx̂c-nm**		**pálx̂c-ki**
	snowshoe.rabbit		snowshoe.rabbit-ERG		snowshoe.rabbit-INST
	'snowshow rabbit'		'snowshoe rabbit (ERG)'		'snowshoe rb. (INST)'

Additional examples:

(102)

a.	**mú'pc**	**mù'písne**	**mù'pícpe**	'yearling fawn (NOM)/(OBJ)/(LOC)'
b.	**qócqoc**	**qòcqósna**	**qòcqócpe**	'meadow lark (NOM)/(OBJ)/(LOC)'
c.	**múq'uc**	**mùq'úsne**	**mùq'úcpe**	'sucker fish (NOM)/(OBJ)/(LOC)'

The constrast between the back stops and **c** in word final position can be captured fairly straighforwardly. The alternation in pre-sonorant position is more difficult to capture, perhaps. In order to distinguish between stops that undergo these changes and those that do not, I suggest that all stops other than **c**, **k**, and **q** all share the feature [+Fortis]. This will capture the more forceful nature of not only **p** and **t**, but also the ejectives **c'**, **k'**, and **q'** which do not undergo fricativization like their non-ejective counterparts. Fricativization is a kind of lenition which affects only the non-Fortis [-Continuant] consonants.

I propose the following constraint in (103), and I follow Kirchner (1998) in employing the preserve feature constraint in (104).

(103) * [-Fortis, -Continuant]#

(104) Preserve(-Continuant)

The two constraints must have the ranking in (105), where preserving the continuancy feature of the non-fortis stops ranks below that of fricativization.

(105) * [-Fortis, -Continuant]# Preserve(-Continuant)

We can now consider the outworking of these constraints for an example with a word final **q**: **tasx̂** /**tasq**/ 'fat', **tasqi̇in** /**tasq-hi̇in**/ 'fatty'. Since **q** is non-fortis, it must undergo lenition word finally. Although fricativization causes a violation of Preserve(-Continuant), this cost is made worthwhile by the fact that a violation of the more highly ranked constraint is avoided.

(106)

/tasq/	* [-Fortis, -Continuant]#	Preserve(-Continuant)
☞ a. **tasx̂**		*
b. **tasq**	*!	

In the next tableau, we see that when the non-fortis stop is not word final, it will not violate the constraint * [-Fortis, -Continuant]# (103). The cost of undergoing lenition in candidate (b) is not recovered. The winner is candidate (a), the one that lacks fricativization.

(107)

/tasq-hi̇in/	* [-Fortis, -Continuant]#	Preserve(-Continuant)
☞ a. **tasqi̇in**		
b. **tasx̂i̇in**		*!

If we consider the nature of an affricate, we can see why **c** does not undergo lenition word finally. Affricates are both [+Continuant] and [-Contintuant], and importantly, they are [-Continuant] on the right side, adjacent to the right edge of the word.

(108) **c** #
[-Continuant][+Continuant]

When word final **c** is evaluated, it does not violate * [-Fortis, -Continuant]#. In the following tableau, the candidate where **c** has not undergone lenition is the better one, since there is no recovery of the cost of violating Preserve(-Continuant).

(109)

/**muq'uc**/	* [-Fortis, -Continuant]#	Preserve(-Continuant)
☞ a. **muq'uc**		
b. **muq'us**		*!

The better candidate has not undergone lenition, as it is unnecessary for **múq'uc** 'sucker fish' **c** to satisfy the constraint (I am grateful to Pamela Munro for her observation on fricative nature of **c** in contrast to **k,q** which gave rise to this analysis).

Let us consider the cases where all three of the non-fortis consonants undergo lenition. These alternations can be interpreted as spreading of the feature [+Continuant]. A non-Optimality analysis might represent the alternation as in (110).

(110) a.

```
C            C
[-Fortis]    [+Sonorant]
   |            |
[-Continuant] [+Continuant]
```

b.

```
C            C
[-Fortis]    [+Sonorant]
     \        /
   [+Continuant]
```

In Optimality Theoretic terms, we must consider as marked the representation where a non-fortis consonant does not share the continuacy feature of a following sonorant:

(111) *

```
C              C
[-Fortis]      [+Sonorant]
   |              |
[-Continuant]  [+Continuant] ]
```

For convenience of reference, I will refer to the configuration in (111) as "*CN", because in contrast to word final fricativization, this kind of lenition affects **c**. It is necessary to claim that even though **c** has the feature [+Continuant], the fact that it also has [-Continuant] still violates the constraint *CN. This claim is consistent with the fact that within the consonant inventory of Nez Perce, **c** takes the place of a fricated stop; its primary characteristic in the inventory is [-Continuant].

When **múq'uc** 'sucker fish' undergoes affixation with the object case suffix **-ne**, lenition is required to produce - **mùq'úsne**:

(112)

/muq'uc-ne/	*CN	Preserve(-Continuant)
☞ a. **muq'úsne**		*
b. **muq'úcne**	*!	

It is not required when **múq'uc** undergoes affixation with the instrumental suffix **-ki**, since *CN is not violated.

(113)

/muq'uc-ki/	*CN	Preserve(-Continuant)
☞ a. **muq'úcki**		
b. **muq'úski**		*

The same analysis applies to the non-ejective back stops.

4. The Nez Perce stress system

This chapter presents a description and analysis of the Nez Perce stress system. The data provided in this chapter have their basis in the phonetic indicators such as pitch height, pitch contour, amplitude, duration contrasts, and vowel allophony. The focus of this chapter is to present the various patterns of stress in Nez Perce and to provide an explanation for them. Data sets illustrating the patterns of the stress system will be given, followed by analysis in Optimality Theoretic terms.

I have two primary goals for this chapter. One is to provide a relatively comprehensive description of the Nez Perce stress system to serve as a reference. The other is to apply Optimality Theory to the problem of dealing with such a wide scope of data in one language.

Section 4.1. provides a discussion of syllable weight and the minimal word. Section 4.2. presents the core of the stress system, including the pattern of penultimate stress and stress induced vowel shortening. This section also describes the most important exceptions to basic penultimate stress, including accent, long vowels that are an exception to shortening, and a set of words that embody a reversal of the ranking of the constraints Edgemost Right and Non-Finality. Section 4.3. discusses and analyzes patterns of secondary stress. Section 4.4. describes and analyzes a pattern of epenthesis and a pattern of syncope, both of which are motivated by stress. Section 4.5. gives a description and analysis of the interaction of morphology and stress, including a constraint that causes

stress to be assigned to the stem, compound nouns, verb morphology, and multiple accent.

In this chapter, it willbe my policy to mark primary stress with an acute accent ´ and secondary stress with a grave accent `. I will mark both primary and secondary stressed in surface forms, but in certain tableaux, where the only concern is primary stress, I will only mark primary stress.

4.1. Introduction

4.1.1. Rhythmic stress

Hayes states that in his view "the central claim [of metrical stress theory] is that stress is the linguistic manifestation of rhythmic structure, and that the special phonological properties of stress can be explicated on this basis" (1995:1). In many languages, including both Nez Perce and English, some syllables in a word will be spoken with greater strength or emphasis than others. In the following English examples, the syllables indicated with accent marks have greater strength than those without the marks:

(1) a. rígmaròle
b. mànifèstátion
c. àddítìonal
d. párachùte

The acute accent indicates the syllable with the greatest relative strength, the grave accents indicate syllables with relatively less stength. In the following Nez Perce

examples, we find the same pattern where some syllables are quite weak, others are strong, and just one is the strongest:

(2)	a.	**péenmèkùnisène**	'he saw her as she was approaching'
	b.	**tòkàpaláhsay**	'raise your hand'
	c.	**càpatíca**	'I move lengthwise'
	d.	**wèx̂weqétne**	'frog (OBJ)'

Strength can be manifested in several ways. In Nez Perce, pitch height, degree of amplitude, duration of the nucleus, duration of the coda (when the nucleus is a short vowel), and choice of vowel allophone all indicate stress. In Nez Perce words, there is only one syllable with primary or main stress. For syllables with primary stress, Nez Perce has a set of typical pitch contours, in which the pitch rises to a peak (on short vowels) or to a plateau (on long vowels). It appears that Nez Perce assigns a high tone to the syllable with primary stress, but this high tone is only part of indicating the highest level of stress. Syllables with main stress also share the stress cues of other stressed syllables.

Relative strengths and weaknesses of syllables can be represented as grid columns in the following metrical grid for **péenmèkùnisène** 'he saw her as she was approaching' (a):

(3)

```
1  3  2 Ø 3 Ø
x
x     x
x   x x    x
x   x x x x x
péenmèkùnisène
```

The initial syllable has primary stress, as indicated by the height of the grid and the number "1". There is one syllable with "2" stress, two syllables with "3" stress, and two unstressed syllables "Ø". The primary stressed syllable **péen** is the strongest beat. It has the highest pitch, a characteristic plateaued pitch contour, and the greatest amplitude. The syllable with 2-stress **kù** is the second loudest syllable, and one with relatively high pitch. Its short vowel is slightly lengthened. The syllable **me** has the epsilon allophone of **e**: [**mɛ**]. This allophone is only found in syllables with primary or secondary stress. It contrasts with the schwa allophone of **e** found in the last syllable [**nə**]. The low vowel **e** is realized as schwa only when it is in a stressless syllable. The syllables **ne** and **ni** in (3), both have very low amplitude and pitch.

An important question that I will seek to answer in this chapter is what is it that gives rise to the profile of strong and weak syllables? A framework of binary feet could be posited, as in Hayes' (1995) pre-Optimality framework, with each foot indicating a syllable that has a strong beat. Alternatively, the pattern of strong and weak syllables could arise from a set of constraints that evaluate the relative importance of strengthening one syllable or another, depending upon the context. In this chapter, I will argue that it is possible to account for all or almost all of the Nez Perce stress phenomena simply in terms of constraints without reference to feet.

I will also show that in more than one case it is necessary to break a constraint into a family of constraints. This will be done with the Weight to Stress Principle (see

§4.3.1). This will allow the grammar to account for quite a range of stress phenomena, both primary and secondary. In other cases, it is necessary to reverse the rankings of constraints. Although a grammar where such ranking were impossible would be more constrained, I will provide very good evidence that it must be allowed in several cases (see §4.2.2.2., §4.5.2., and §4.5.3.). It is an assumption of Optimality Theory (Prince and Smolensky 1993) that constraint rankings are essentially arbitrary. Assumig that this is correct, then the alternative rankings that Nez Perce displays follow from the theory, and the data patterns follow from the alternative rankings.

4.1.2. Syllable weight and the minimal word

In Chapter 2.1.3, I gave brief arguments based on epenthesis and stress phenomena that Nez Perce has only a simplex onset and a simplex coda, with one exception (the sequence **x̂s/x̂c**). (In §4.4.1, I will provide the full set of data with their analysis, to show how epenthesis breaks up syllable final CC and CCC clusters.) In Chapter 2.1.4, I provided evidence the three weights of syllables. These three weights are represented in (4), along with the primary observation motivating that classification.

(4)	Super-heavy:	CVV, CVVC	Always receive at least secondary stress
	Heavy:	CVC	Receive secondary stress unless word final
	Light:	CV	Receive alternating secondary stress

Super-heavy syllables are always stressed in every position, although they do not necessarily receive primary stress. CVC syllables always receive at least secondary stress

unless they are word final. Nez Perce tries to prevent word final stress of any kind, although there are some exceptional cases that I will describe.

As I develop this chapter, I will explain the motivation behind these observations in terms of Optimality Theory (Prince and Smolensky 1993, McCarthy and Prince 1993). For example, I will argue that the difference between super-heavy syllables and CVC syllables is that satisfying the Weight to Stress Principle for a super-heavy syllable is more important than for a CVC syllable. These data will provide evidence that the standard Weight to Stress Principle (Prince 1991, McCarthy and Prince 1993) can be broken up into a family of constraints that apply to syllables of different weights with different levels of stress (see §4.2.1 and §4.3.1). Since CV syllables do not show the effect of Weight to Stress, they can be stressless even when not word final.

The minimal word demonstrates an exception to the rule of light final CVC. Final CVC is stressed and heavy when it is the only syllable in the word.

(5)

a.	**tìn**	(x)	'chin'
b.	**sìs**	(x)	'navel'

This can be understood to satisfy the requirement that each word must have at least word stress, and that this requirement is more important than the one which says that there must not be main stress on the final syllable. When CVC is the only phonological content, it

cannot then be stressless. In Nez Perce, there are a number of content words of size CVC. This would appear to be the size of the minimal word (6).[1]

(6)	a.	**hím'**	'mouth'
	b.	**sís**	'navel'
	c.	**tít**	'tooth'
	d.	**mám**	'nephew'
	e.	**pís**	'drizzle'
	f.	**tín**	'chin'

There are CV verb stems such as the verb **hi** 'say', but they never appear in use without morphology that makes them at least CVC. There is also the relativizer **ke**, although an argument can be made that it cliticizes to the following word.

Nez Perce assigns either primary or secondary stress to all initial syllables, even when they are in clash with a following stressed syllable. It is not unexpected that heavy and super-heavy syllables would have stress when word initial, so I will provide examples that show a CV syllable is also stressed when word initial. This occurs even when CV is not followed by a stressless syllable. Several words have an initial CV syllable that is accented.

(7)	a.	**x̂áx̂àac**	'grizzly bear'
	b.	**hímìin**	'wolf'

[1] CVC words are not particularly common (I am aware of around 20 or so), but they are otherwise unremarkable.

A number of other examples can be supplied. Accent is a lexical indication that a syllable has primary stress and plays an important role in Nez Perce prosody. I will make my claims about accent explicit in Optimality Theoretic terms in §4.2.1.3.

When not assigned main stress, initial CV syllables receive secondary stress, even when they are in clash with a following stressed syllable.

(8)	a.	**cèmíitx**	'huckleberries'
	b.	**hìpèkyú'**	'they will go'
	c.	**tèméeyènwèes**	'mud bath'

I argue in §4.3.2.3. that these effects are caused by the constraint Edgemost Left, which requires that there be secondary stress on the initial syllable.

I have found that it is probably unnecessary to posit the existence of feet to account for the Nez Perce stress phenomena. The only strings where there is any real support for binary feet are in series of two light syllables between stressed heavy syllables:

(9)	a.	**wàpáayàtaw'áat**	'helper'
	b.	**'ìmíitkìn'ikàay**	'inside'
	c.	**nìkéewsèlikù'**	'I hold by pulling'

In §4.3.2.3., I provide an analysis that accounts for the alternations without the use of the moraic trochee.

4.2. Basic principles of primary stress assignment

The most basic stress pattern in Nez Perce is that of assigning primary stress to the penult. When a word is uninflected, main stress is placed on the next to last syllable of the stem, and when the word is suffixed, stress "shifts" to the right to stay on the penult.

(10)	a.	**pískis**	b.	**pìskísne**
		piskis		**piskis-ne**
				door-OBJ
		'door'		'door (OBJ)'

The interaction of two constraints is responsible for this pattern. The highly ranked constraint Non-Finality (McCarthy and Prince 1993) requires that stress not be on the last syllable of the word. The lower ranked directionality constraint Edgemost Right is violated when stress is not on the last syllable of the word. Satisfaction of the second constraint is of lower priority than satisfaction of the first, so stress cannot go on the last syllable of the word. However, in order to violate the Edgemost Right constraint (Prince and Smolensky 1993) as little as possible, primary stress is placed as close to the end of the word as it can be without being on the final syllable. A large proportion of Nez Perce words exhibit this pattern of stress.

Vowel length interacts with stress in important ways. Syllable weight in general and vowel length in particular do not determine which syllable will have primary stress in Nez Perce. It is the location of main stress that determines whether a syllable may have a

long vowel or not. If there is no underlying vowel length, there will be no length on the surface.

(11)	a.	**pískis**	b.	**pìskísne**
		piskis		**piskis-ne**
				door-OBJ
		'door'		'door (OBJ)'

If a syllable has an underlying long vowel and it has main stress, then the vowel will be realized as long. If on the other hand, a given underlying long vowel is not in the syllable that receives primary stress, then that long vowel will be realized as short.

(12)	a.	**wéeptes**	b.	**wèptéesne**
		weeptees		**weeptees-ne**
				eagle-OBJ
		'eagle'		'eagle (OBJ)'

This pattern of long vowel shortening is very common in Nez Perce.

I detail the two fundamental patterns of primary stress in §4.2.1. Penultimate stress is discussed in §4.2.1.1, and vowel shortening in §4.2.1.2. After each of these patterns is described, I provide a formal analysis in terms of Optimality Theory in §4.2.1.3. The words that have the basic patterns constitute the vast majority of the Nez Perce vocabulary. However, there are certain sets of words in Nez Perce with stress behavior that violates the observations just given.

Three sets of words with exceptional behavior are addressed in §4.2.2. There are words with lexically assigned main stress or accent, and these words do not undergo stress shift. Stress always stays on the same syllable. These words are addressed in §4.2.2.1. There are a few words that have stress assigned always to the very last syllable

in the word. I describe these words in §4.2.2.2. Finlly, there are some long vowels that do not reduce when they lack main stress. I describe these cases in §4.2.2.3.

The exceptional forms are only a small proportion of the vocabulary, but they are important because they provide strong evidence of the presence of constraints and of the potential for them to be reranked. In §4.2.3., I bring together the regular forms and the exceptional forms and show how they can be brought together under the same analysis.

Other stress phenomena are addressed in later portions of this chapter. Secondary stress is taken up in §4.3, words with epenthesis and syncope are discussed in §4.4, and the intraction of stress and morphology are addressed in §4.5.

4.2.1. Regular primary stress assignment

4.2.1.1. Penultimate stress pattern

The pervasive pattern of Nez Perce penultimate stress reveals the interaction of two important constraints. The constraint of Non-Finality requires that stress not be on the final syllable. The constraint of Edgemost Right is violated when stress is not located at the right edge of the word. Because in Nez Perce Non-Finality is the more important or highly ranked of the two, stress is not assigned to the final syllable. However, Nez Perce tries to satisfy Edgemost Right as much as it can without violating Non-Finality. When primary stress is placed on the penult, the resulting form does not violate Non-Finality and Edgemost Right is violated to the least degree possible. Edgemost Right is a gradient constraint that is violated in greater measure as primary stress is located farther away

from the right edge of the word. I will formally define the constraints and make the analysis explicit with tableaux in §4.2.1.3. The data paradigms are illustrated here.

Nez Perce has an extensive system of case inflections (see Chapter 2.3.1.4). I repeat a subset of them here.

(13)	a.	nominative	(NOM)	(unmarked)
	b.	ergative	(ERG)	**-nm/-nim**
	c.	objective	(OBJ)	**-ne**
	d.	instrumental	(INST)	**-ki**
	e.	allative	(ALL)	**-k/-pk/-kek**
	f.	locative	(LOC)	**-pe**

When a case suffix or some other suffix is added to a noun which has regular stress, primary stress "shifts" to the right. Consider the examples in (14)-(16). I discuss the variations in vowel length in the next section (§ 5.2.1.2), but at this point note that vowel length plays no role in determining where stress is located in these forms. Only syllable position is relevant.

(14)	a.	**pískis**	'door '
	b.	**pìskísne**	'door (OBJ)'
	c.	**pìskíski**	'door (INST)'
	d.	**pìskísnim**	'door (ERG)'
	e.	**pìskísx**	'door (ALL)'
(15)	a.	**sílu**	'eye'
	b	**sìlúune**	'eye (OBJ)'
	c.	**sìlúuki**	'eye (INST)'
	d.	**sìlúunm**	'eye (ERG)'
(16)	a.	**wéeptes**	'eagle'
	b.	**wèptéesne**	'eagle (OBJ)'
	c.	**wèptéeski**	'eagle (INST)'

d. **wèptéesnim** 'eagle (ERG)'

In (14a), the underlying form of the noun stem is /**piskis**/; in (15a) it is /**siluu**/; in (16a) it is /**weeptees**/. Whether a vowel is underlying long or not has no effect upon whether the syllable receives main stress. In a word with regular stress assignment, a syllable receives main stress if it is penultimate.

Two examples in the data above at first appear to go against my claim that stress is penultimate - (14e) and (15d). In Chapter 2.1.3, I have argued that examples such as these must be syllabified as in (17), with a final syllabic consonant.

(17) **pìskís.x** 'door (ALL)'
sìlúun.m 'eye (ERG)'

If the final consonant were not syllabic in these cases, we would expect stress to be as in

(18) ***sílunm**
***pískisx**

Many other words also have this pattern where a final cluster prevents a violation of the prohibition against word final stress. A discussion of these cases along with epenthesis is given in §4.3.1.

I provide additional examples of nouns with shifting penultimate stress in (19)-(23). Note that the assignment of stress is not determined by whether a syllable has an underlying long vowel. In the set in (19), there are no underlying long vowels.

(19)	a.	**céhen**	**cèhénne**	'dewlap (NOM)/(OBJ)'
	b.	**císnim**	**cìsnímki**	'thornberry (NOM)/(INST)'
	c.	**k'álk'al**	**k'àlk'álnim**	'stinkbug (NOM)/(ERG)'

	d.	**lílluy**	**lìlúype**	'filth (NOM)/(LOC)'

In the following set, the last syllable in the noun stem has an underlying long vowel.

(20)	a.	**càlocálo**	**càlocalóona**	'minnow (NOM)/(OBJ)'
	b.	**hayáayno**	**hàyaynóoki**	'thigh (NOM)/(INST)'
	c.	**k'áplac**	**k'àpláacnim**	'warclub (NOM)/(ERG)'
	d.	**páp'a**	**pàp'áapa**	'spring of water (NOM)/(LOC)'

In the following set, there are two underlying long vowels. Either one is realized with length depending upon whether its syllable is penultimate.

(21)	a.	**céexcem**	**cèxcéemne**	'groundhog (NOM)/(OBJ)'
	b.	**héesis**	**hèsíiski**	'roof (NOM)/(INST)'
	c.	**k'úusis**	**k'ùsíisnim**	'mudfish (NOM)'(ERG)'
	d.	**peqíiyex̂**	**pèqiyéex̂pe**	'stepchild (NOM)/(LOC)'

In a corpus of 533 nouns that I have collected, 364 have this pattern of penultimate stress (the other nouns have fixed lexical stress). It is a pattern that a child would be exposed to very early.

The same pattern of penultimate stress is seen in adjectives (22) and function words (23) when they are affixed with case suffixes.

(22)	a.	**hìméeq'is**	**hìmeq'íisne**	'big (NOM)/(OBJ)'
	b.	**wáy'at**	**wày'áatkax**	'distant (NOM)/(ALL)'
	c.	**c'élc'el**	**c'èlc'élne**	'awkward (NOM)/(OBJ)'
	d.	**néx̂sep**	**nèx̂séepne**	'different (NOM)/(OBJ)'

Affixation of adjectives usually takes place because of case concord (see Chapter 2.3.2.). Most function words do not usually receive case suffixes, but there are exceptions:

(23)	a.	**mǐne**	**mìnéepx**	'where'/'to where'
	b.	**kǐne**	**kìnéepx**	'here' / 'to here'

In these examples, suffixation of the allative case **-x/-px** causes stress to shift. The word final consonant is independently syllabified (e.g., **minéep.x** 'to where') , with the result that stress is still penultimate, even though it is on the last vowel of the word.

The same pattern of penultimate stress is seen when tense and aspect suffixes are added to verbal stems (24).

(24) a. **hàníisa**
hanii-see
make-INC
'I am making'

b. **hànisáaqa**
hanii-seeqa
make-REC
'I was making'

c. **hàníina**
hanii-ne
make-PTV
'I made'

(25) a. **càpatǐca**
capat-cee
move.lengthwise-INC
'I move lengthwise'[2]

b. **càpatcáaqa**
capat-ceeqa
move.lengthwise-REC
'I was moving lengthwise'

c. **capátna**
capat-ne
move.lengthwise-PTV
'I moved lengthwise'

Thus the pattern of penultimate stress is clear established in the Nez Perce vocabulary.

---

[2] For example, to move down the aisle of a church or along a log.

There is an additional constraint that is involved with main stress assignment – Stress the Stem. This constraint is violated when primary stress is not on the stem, and it is highly ranked for nouns but not for verbs. In nouns, it prevents stress from moving farther to the right than the last syllable of the stem, even if the suffix is two or more syllables in length.

(26)	a.	**pískis**	'door'
	b.	**pìskísne**	'door (OBJ)'
	c.	**pìskískìn'ikàay**	'next to the door'
	d.	**pìskíslàykin**	'near the door'
	e.	**pìskískìn'ix**	'from the door'

This constraint and its effects will be set aside until §4.5, which covers morphology and stress assignment.

4.2.1.2. Vowel shortening

Long vowel shortening is very common in Nez Perce. The phenomenon can be summarized in the following three points:

(27) The occurrence of underlying vowel length is essentially unpredictable.

(28) Underlying vowel length has no effect on where main stress will be realized.

(29) Vowels are realized as long only when they have main stress, not secondary stress.

Out of a total of 533 nouns in my corpus, 364 (68%) have shifting, penultimate primary stress. The 364 nouns with the regular stress pattern fall into three sets: words with no underlying long vowels, words with two underlying long vowels in the last two syllables,

and words with only one underlying long vowel. In the last category, words with only one underlying long vowel, the long vowel only occurs in the final syllable of the stem. I will return to this observation below.

The simplest set of cases are the nouns which have no underlying long vowels. There are dozens of nouns that have this pattern.

(30)	a.	**téhes**	**tèhésne**	'ice (NOM)/(OBJ)'
		/tæhæs/	**/tæhæs-næ/**	
	b.	**cóqoy**	**còqóyna**	'tipi smokehole (NOM)/(OBJ)'
		/coqoy/	**/coqoy-næ/**	
	c.	**pískis**	**pìskíski**	'door (NOM)/(INST)'
		/piskis/	**/piskis-ki/**	
	d.	**k'álk'al**	**k'àlk'álnim**	'maggot (NOM)/(ERG)'
		/k'alk'al/	**/k'alk'al-nim/**	
	e.	**páhap**	**pàhápna**	'daughter (NOM)/(OBJ)'
	f.	**'ískit**	**'ìskítpe**	'trail (NOM)/(LOC)'
	g.	**císnim**	**cìsnímki**	'thornberry (NOM)/(INST)'
	h.	**pícpic**	**pìcpícpe**	'cat (NOM)/(LOC)'
	i.	**qócqoc**	**qòcqócna**	'meadow lark (NOM)/(OBJ)'
	j.	**q'ósq'os**	**q'òsq'óski**	'black bird (NOM)/(INST)'

In the next set, only the stem's last syllable has a vowel which is underlyingly long. Again, there are dozens of nouns that have this pattern, so only a small portion are represented here.

(31)	a.	**sílu**	**siluúpe**	'eye (NOM)/(LOC)'
		/siluu/	**/siluu-px/**	

b.	**sík'em**	**sik'éemnim**	'horse (NOM)/(ERG)'
	/sik'æːm/	**/sik'æːm-nim/**	
c.	**tátlo**	**tàtlóona**	'ground squirrel (NOM)/(OBJ)'
	/tatloː/	**/tatloː-næ/**	
d.	**qém'es**	**qem'éeski**	'camas (NOM)/(INST)'
	/qæm'æːs/	**/qæm'æːs-ki/**	
e.	**píke**	**pikéene**	'mother (NOM)/(OBJ)'
f.	**tílel**	**tiléelpe**	'cliff (NOM)/(LOC)'
g.	**píswe**	**pìswéeki**	'stone (NOM)/(INST)'
h.	**mácqoy**	**màcqóoynim**	'chipmunk (NOM)/(ERG)'
i.	**wàx̂p'ál'as**	**wàx̂p'al'áasna**	'Adam's apple (NOM)/(OBJ)'

Examples of nouns with two underlying long vowels are seen in (32). This class is the largest in the corpus of 364 nouns with penultimate stress.

(32)	a.	**táamsas**	**tàmsáasna**	'wild rose (NOM)/(OBJ)'
		/taːmsaːs/	**/taːmsaːs-næ/**	
	b.	**wéeptes**	**wèptéeski**	'eagle (NOM)/(INST)'
		/wæːptæːs/	**/wæːptæːs-ki/**	
	c.	**łéepłep**	**łèpłéepnim**	'butterfly (NOM)/(OBJ)'
		/łæːpłæːp/	**/łæːpłæːp-nim/**	
	d.	**sáaqsax̂**	**sàqsáax̂nim**	'osprey (NOM)/(OBJ)'
		/saːqsaːq/[3]	**/saːqsaːq-nim/**	
	e.	**'áala**	**'aláapa**	'fire (NOM)/(LOC)'
	f.	**héeyey**	**heyéeyne**	'steelhead (NOM)/(OBJ)'

[3] A discussion of frication of stops is found in Chapter 3.3, but briefly **k,q → x,χ** / __ [sonorant], # and **c → s** / __ #.

g.	**cíilyex**	**cìlyéexki**	'house fly (NOM)/(INST)'
h.	**coq'áaxan**	**còq'axáanki**	'slits (NOM)/(INST)'
i.	**taq'íisam**	**tàq'isáampa**	'shore (NOM)/(LOC)'
j.	**wíispol**	**wìspóolna**	'buckskin (NOM)/(OBJ)'

All three sets of nouns have examples that have one of the following syllable patterns in their final two syllables: CVCVC and CVCCVC (where V can be long or short). The patterns are exemplified in (33) and (34).

(33) <u>CVCVC</u>, <u>CVCVVC</u>, <u>CVVCVVC</u> (there is no <u>CVVCVC</u>)

a.	**téhes**	**tehésne**	'ice (NOM)/(OBJ)'
	/tæhæs/	**/tæhæs-næ/**	
b.	**sík'em**	**sik'éemnim**	'horse (NOM)/(ERG)'
	/sik'æːm/	**/sik'æːm-nm/**	
c.	**coq'áaxan**	**còq'axáanki**	'slits (NOM)/(INST)'
	/coq'aːχaːn/	**/coq'aːχaːn-ki/**	

(34) <u>CVCCVC</u>, <u>CVCCVVC</u>, <u>CVVCCVVC</u> (there is no <u>CVVCVC</u>)

a.	**pískis**	**pìskíski**	'door (NOM)/(INST)'
	/piskis/	**/piskis-ki/**	
b.	**mácqoy**	**màcqóoynim**	'chipmunk (NOM)/(ERG)'
	/macqoːy/	**/macqoːy-nm/**	
c.	**wéeptes**	**wèptéeski**	'eagle (NOM)/(INST)'
	/wæːptæːs/	**/wæːptæːs-ki/**	

Only the second and third sets of nouns have examples with the following syllable patterns: CVCV and CVCCV. The patterns are exemplified in (35) and (36).

(35) CVCVV, CVVCVV (there is no CVCV, CVVCV)

a.	**sílu**	**siluúpe**	'eye (NOM)/(LOC)'
	/siluu/	**/siluu-px/**	
b.	**'áala**	**'aláapa**	'fire (NOM)/(LOC)'
	//a:la:/	**//a:la:-pe/**	

(36) CVCCVV, CVVCVV (there is no CVCCV, CVVCCV)

a.	**tátlo**	**tàtlóona**	'ground squirrel (NOM)/(OBJ)'
	/tatlo:/	**/tatlo:-næ/**	
b.	**núusnu**	**nusnúupe**	'nose (NOM)/(LOC)'
	/nu:snu:/	**/nu:snu:-pe/**	

In summary, words with regular shifting stress end in underlying CVC, CVV, and CVVC, but there are none that end in underlying CV (i.e., where V is underlyingly short). Words can end in underlying CV, as in the following examples, but they never have shifting stress:

(37)	a.	**qáya**	**qáyàna**	'hawk (NOM)/(OBJ)'
		/qaya/	**/qáya-ne/**	
	b.	**láaqa**	**láaqàna**	'pine (NOM)/(OBJ)'
		/láaqa/	**/láaqa-ne/**	

In addition, when a word has shifting stress and when it has an underlying long vowel in the first syllable it always has an underlying long vowel in the second syllable. For example, there is no word with the alternation ***wéeptes/ *wèptésne** (cf., (16a)). There is no other evidence at all in Nez Perce that underlyingly short vowels become long

when they have main stress, so I attribute this asymmetry as well as the previous one to the lexicon. For example, there probably were at one time words with shifting stress that had CV syllables, but these have changed to CVV. I am presently working on a diachronic analyis of these lexical asymmetries with comparative data from Sahaptin.

4.2.1.3. Formalization

In an Optimality analysis, a number of potential surface forms are generated from a lexical input. The candidate surface forms are evaluated with respect to their violation of the constraints. The constraints are ranked in importance. A single violation of a higher ranked constraint is worse than any number of violations of lower ranked constraints. However, if two forms tie with respect to violations of a higher ranked constraint, then it goes to a consideration of the next lower ranked constraint. Violations are also counted. If two potential outputs are tied with respect to a higher raked constraint, then the output with the fewest violations of a lower ranked constraint wins.

Nez Perce penultimate stress can be readily adapted to an OT analysis by taking advantage of the constraints Non-Finality (McCarthy and Prince 1993) and Edgemost Right (Prince and Smolensky 1993).

(38) Non-Finality: "The final syllable must not have primary stress"

(39) Edgemost Right: "Primary stress must be at the right edge of the word"

Edgemost Right is satisfied if primary stress is placed on the last syllable, and violated if it is not located there. However, Edgemost Right is a gradient constraint. Every syllable

that separates the stressed syllable from the right edge constitutes a violation of Edgemost Right. If stress is on the penult, there is one violation of Edgemost Right, and if stress is on the antepenult, there are two violations of this constraint. We see the gradient nature of Edgemost Right violations in the following tableau:

(40)

	Edgemost Right
pískisne	**
piskísne	*
piskisné	

Only the third candidate in (40) fully satisfies Edgemost Right, but the second candidate is better than the first one because it only violates this constraint once rather than twice.

In the following discussion, I deal exclusively with main stress, but in §4.2.3 and §4.3., I will show that Non-Finality also plays a role in the assignment of secondary stress. An additional version of Edgemost Right will also be seen to affect the assignment of secondary stress. An additional Non-Finality constraint will also be needed to rule out cases of secondary stress on final syllables. I will demonstrate this immediately below.

In Nez Perce, these two constraints have the following ranking:

(41) Non-Finality » Edgemost Right

These constraints can now be applied to the problem of accounting for the typical penultimate stress alternation in (42). The results are seen in the tableaux in (43) and (44).

(42) a. **pískis** 'door'
b. **pìskísne** 'door (OBJ)'

(43)

/piskis/	Non-Finality	Edgemost Right
☞ a. **pískis**		*
b. **pìskís**	*!	

(44)

/piskisne/	Non-Finality	Edgemost Right
a. **pískìsne**		**!
☞ b. **pìskísne**		*
c. **pìskìsné**	*!	

In (43), the output that has stress on the initial syllable (candidate (a)) wins because it does not violate the more highly ranked constraint Non-Finality. The exclamation point indicates the relevant violation. In the second tableau (44), there are two potential outputs that do not violate Non-Finality. With respect to the more highly ranked constraint, the candidates (a) and (b) are tied. It is candidate (b) **pìskísne** that wins because it only once violates the lower constraint Edgemost Right, and the other example violates the constraint twice because stress is two syllables from the right edge. It is the second violation of this gradient constraint that makes the decision, so an exclamation mark is placed to its right. This pair of constraints with the ranking in (41) account for primary stress assignment for a very large set of Nez Perce words. In §4.2.2.2., I will describe a small set of words for which the ranking in (41) is exactly reversed.

In Nez Perce, as is the case in many other languages, a word may have only one syllable with primary stress. Kager (1999) has proposed the constraint of Culminativity to account for this:

(45) Culminativity: "In every prosodic domain there is one and only one grid column that is higher than all other grid columns"

Culminativity is undominated by other constraints, so Nez Perce words do not have more than one syllable with main stress.[4] In the following tableaux, candidate (d) with two main stresses is ruled out.

(46)

/piskisne/	Culminativity	Non-Finality	Edgemost Right
a. pískìsne			**!
☞ b. pìskísne			*
c. pìskìsné		*!	
d. pískísne	*!		

Culminativity wll be found to have important work to do in words that are reduplicated (see §4.3.3).

The second important pattern of regular stress assignment in Nez Perce is the shortening of long vowels that lack primary stress. Again, there is a pair of two relevant constraints. The first is the Weight to Stress Principle and the second one involves faithfulness to underlying vowel length: Ident (Vowel Length).

[4] I know of no systematic counter-examples in Nez Perce, although speakers will sometimes produce two very strong stresses in a very long verb. Usually this happens when they seem to be uncertain just how to say the word. More work needs to be done to explore this phenomenon.

McCarthy and Prince (1993) incorporated Prince's (1991) Weight to Stress Principle (WSP) into a constraint that says "a heavy syllable is stressed" (p.154), referring to stress in general: When a heavy syllable is not stressed, the WSP constraint is violated. I have reinterpreted the WSP as a family of constraints in which a different one is violated according to the weight of the heavy syllable that is realized without main stress or without some stress. The overall WSP effects can be summarized by the statement that the heavier the syllable is and the less stress that it has, then the worse the violation is. Thus, a completely stressless super-heavy syllable is a worse violation than a super-heavy syllable with secondary stress. To make this concrete, I define the WSP family of constraints in (47).

(47) WSP_1 "A CVC syllable has main stress."

WSP_2 "A CVC syllable has some stress."

WSP_3 "A super-heavy syllable has main stress."

WSP_4 "A super-heavy syllable has some stress."

These constraints have the following ranking in Nez Perce:

(48) $WSP_4 \gg WSP_3 \gg WSP_2 \gg WSP_1$

An important benefit of the constraint hierarchy is that it allows us to show why super-heavy syllables receive primary stress in word final position while CVC syllables do not. The constraint Non-Finality applies only to primary stress, while WSP_4 and WSP_2 apply to secondary stress. However, if we define Non-Finality Secondary, as in (49), we can readily deomnstrate the difference between the two kinds of heavy syllables.

(49) Non-Finality Secondary: "The final syllable must not have secondary stress"

Having multiple WSP constraints allows Non-Finality Secondary to outrank WSP_2 without outranking WSP_4.

(50) WSP_4 » Non-Finality Secondary » WSP_2

The ranking in (50) means that if a super-heavy syllable occurs word finally, then it must receive at least secondary stress, but a CVC syllable must be stressless. We see this in the following examples:

(51) a. **x̂áx̂àac** 'grizzly bear'[5]
b. **mímqas** 'orange'

Both nouns are accented on the intial syllable, so main stress must be assigned to that position. The difference is with the ultimas. The first example has secondary stress on the super-heavy ultima, and the second word has a stressless ultima. The tableau in (52) shows why **x̂áx̂àac** has secondary stress on its final syllable

(52)

/x̂áx̂aac/	WSP_4	Non-Finality Secondary	WSP_2
☛ a. **x̂áx̂àac**		*	
b. **x̂áx̂aac**	*!		

Even though candidate (a) violates Non-Finality Secondary with secondary stress on the ultima this is preferable to candidate (b), which has violated the higher ranking WSP_4.

---

[5] **x̂áx̂àac** is one of a small set of words that have a non-shortening long vowel; see discussion below in §4.2.2.3.

For the word **mímqas** 'orange', the constraint WSP_4 does not apply; the word does not have a super-heavy syllable. Instead, WSP_2 applies, and this constraint is outranked by Non-Finality. The following tableau shows why **mímqas** must have a stressless ultima:

(53) WSP_4 » Non-Finality » WSP_2

/mímqas/	WSP_4	Non-Finality Secondary	WSP_2
☞ a. **mímqas**			*
b. **mímqàs**		*!	

Candidate (a) violates WSP_2, but this is better than violating Non-Finality. Thus, candidate (b) is ruled out. In the discussion of secondary stress §§4.3.1-2, I will provide additional examples that show the ranking in (53) is necessary.

Constraint hierarchies like the one in (53) imply arbitrariness of ranking, suggesting that there could be a language where WSP_1 outranks WSP_4. I am not familiar with data from either Nez Perce or another language that would support such a ranking, so perhaps this is not an entirely felicitous means of expressing the WSP. The WSP could also be redefined as a gradient constraint, but to do so and to indicate all the levels of violations would be quite challenging in terms of exposition. A more important problem is that a gradient expression of the WSP would prevent the ranking of Non-Finality between different WSP constraints as shown in (53).

The family of WSP constraints could be made to include additional scales of weight such as the weight differences between CVV and CVVC. It could also be

expanded to include different levels of secondary stress. However, describing the Nez Perce stress system will not require such a degree of elaboration.

What is relevant to Nez Perce long vowel shortening, WSP_3: "A super-heavy syllable has main stress." In Nez Perce, CVV and CVVC are super-heavy. This WSP constraint outranks a faithfulness constraint that requires that vowel length in the underlying representation correspond with vowel length in the surface form.

Faithfulness constraints require that information that is in the underlying representation be retained in the output. Following McCarthy and Prince (1995), I define the faithfulness constraint in (54).

(54) Ident (V-Length): A long vowel in the input must have a corresponding long vowel in the output

This constraint remains agnostic with respect to the existence of the mora, but it can easily be translated into moraic terms (e.g., Max(μ) "all vowel morae in the input must occur in the output"). The importance of Ident (V-Length) is that it prevents unmotivated shortening of long vowels.

WSP_3 and Ident (V-Length) must have the following ranking for the majority of words in Nez Perce:

(55) WSP_3 » Ident (V-Length)

In the majority of Nez Perce words, if a syllable with an underlying long vowel does not receive primary stress, then the vowel must be realized as short.

The outworking of these two constraints and their ranking is considered in the stress pair **wéeptes/wèptéesne** 'eagle (NOM)/(OBJ)'. In the following tableaux, only the

rankings WSP_3 » Ident (V-Length) and Non-Finality » Edgemost Right are implied. No ranking is implied between the WSP and Non-Finality or between the WSP and Edgemost Right, although it will be shown in §4.2.3. that both of these constraints outrank WSP_3. The dotted line between Edgemost Right and WSP_3 indicates that no ranking is implied.

(56) WSP_3 » Ident (V-Length); Non-Finality » Edgemost Right

/weeptees/	Non-Finality	Edgemost Right	WSP_3	Ident (V-Length)
☞ a. **wéeptes**		*		*
b. **wéeptees**		*	*!	
c. **weeptées**	*!		*	
d. **weptées**	*!			*
e. **wéptes**		*		**!

In (56), there are three candidates that have the penultimate stress required by the interaction of Non-Finality and Edgemost Right. Candidate (c) violates Non-Finality, and so it loses. Candidate (b) loses, because it has violated WSP_3. The long vowel in the ultima lacks primary stress, and by definition of WSP_3 this is a violation. It is the failure of this candidate to win that specifically shows the importance of WSP_3. Candidate (d) violates both Non-Finality and Ident (V-Length). This leaves candidates (a) and (e). The fact that (a) wins over (e) shows the importance of Ident (V-Length). Without Ident(V-Length), underlying vowel length need not be expressed. Candidate (a) violates Ident(V-Length) once, but candidate (e) violates the constraint twice. It is the second violation that causes candidate (e) to lose to candidate (a).

In the tableaux for the inflected form of 'eagle' **wèptéesne**, it is the antepenult that must not be faithful to underlying vowel length. Again, no ranking is implied beyond those already established.

(57)

/weeptees-ne/	Non-Finality	Edgemost Right	WSP$_3$	Ident (V-Length)
a. **wéeptèsne**		*!*		*
b. **wèeptéesne**		*	!*	*
☛ c. **wèptéesne**		*		*
d. **wèptésne**		*		*!*
e. **wéptèsne**		*!*		**
f. **wèptèsné**	*!			**

In this set of candidates, it is (c) that wins. It has stress on the penult due to Non-Finality and Edgemost Right. It does not violate WSP$_3$, and it only violates Ident (V-Length) once. Candidate (c) ties with candidates (a-d) on violations of WSP$_3$, so no argument for ranking of WSP$_3$ and Ident (V-Length) can be made based upon this tableau. The candidates (b,d) also have penultimate stress, but in the case of (b) there is a violation of WSP$_3$ which is ranked over Ident (V-Length), and in (d) there has been an unnecessary case of vowel shortening. It is important to note that secondary stress does not allow a syllable to retain vowel length. The form of 'eagle (OBJ)' is **wèptéesne**, with secondary stress on the antepenult, which clearly contains a short vowel.

The same principles are demonstrated for the verb forms **hàníisa** 'I am making' and **hànisáaqa** 'I was making' in (24a) and (24b). The first tableau illustrates the

ranking of WSP_3 over Ident (V-Length), because it is by preserving vowel length that candidate (a) is superior to candidate (d).

(58) WSP_3 » Ident (V-Length)

/hanii- see/	Non-Finality	Edgemost Right	WSP_3	Ident (V-Length)
☛ a. **haníisa**		*		*
b. **hánisa**		**!		**
c. **haniisáa**	*!		*	
d. **haníisa**				**!

In tableau (59), the same ranking is illustrated between candidates (c) and (e).

(59) WSP_3 » Ident (V-Length)

/ hanii -seeqa /	Non-Finality	Edgemost Right	WSP_3	Ident (V-Length)
a. **haníisaqa**		**!		*
b. **hanisáqa**		*		**!
☛ c. **hanisáaqa**		*		*
d. **hanisaqá**	*!			**
e. **haniisáaqa**		*	*!	

Long vowels are allowed just in case they are located in a syllable with main stress, which in these examples is the penult – the syllable closest to the right edge without being word final.

In the next section, I will describe three kinds of lexical exceptions to the principles just described. These exceptions are important because even as they violate the generalizations which have been set out, they do so in systematic ways, implying either the existence of additional constraints or the reranking of constraints already defined.

4.2.2. Lexical exceptions

Of the 533 nouns in the corpus, 364 have regular stress. That means that there are 169 which do not have regular stress – a considerable part of the lexicon. Most of these words that lack regular stress assignment have lexically assigned accent. In addition, there is a very small set of function words that show that for them the constraint Edgemost Right is more highly ranked than Non-Finality. There is also a small number of words that have long vowels which do not shorten when they lack primary stress.

4.2.2.1. Accent

Stress is prominence at an abstract level of representation that is assigned to a syllable. The result of this prominence is that a syllable becomes a rhythmically strong beat. The syllable with primary stress is the most prominent one in the word and thus the strongest beat. All other things being equal, the constraints of Non-Finality and Edgemost Right conspire to make the penult the most prominent syllable and the strongest beat. Accent is a means of indicating in the lexicon which syllable is the most prominent, and the constraint that requires that an accented syllable be the strongest one outranks both Non-Finality and Edgemost Right. I will make these claims explicit in §4.2.3.

If a syllable has accent, and if it is the only accented syllable in the word, then that syllable receives primary stress (in §4.5 I address the way that Nez Perce chooses between

words with more than one accent). The position of the syllable is irrelevant, as is seen in the following three accented words:

(60)	a.	**tùy'é**	**tùy'éene**	'blue grouse (NOM)/(OBJ)'
	b.	**wìwíce'**	**wìwíce'ki**	'log (NOM)/(INST)'
	c.	**'álòk'at**	**'álok'àtpa**	'bighorn ram (NOM)/(LOC)'

When a syllable is accented, main stress remains on that syllable and does not shift. Whether the syllable is the ultima, penult, antepenult, or some other position farther from the right edge does not matter.

There is no perceptible difference between syllables that have prominence because they are accented and syllables that have prominence because they have received it by the stress algorithm described in §4.2.1. In (61)-(62), I compare syllables which have the strongest beat assigned by accent with syllables that have the strongest beat assigned by the primary stress algorithm.

(61)	a.	**háama**	**háamàna**	'man (NOM)/(OBJ)'
	b.	**héesu**	**hèsúune**	'eel (NOM)/(OBJ)'
(62)	a.	**mímqas**	**mímqàspa**	'orange (NOM)/(LOC)'
	b.	**hímtux̂**	**hìmtúux̂pe**	'whiskers (NOM)/(LOC)'

Those examples with accent, the (a) examples, are perceived the same as the parallel examples which have regular stress assignment.

It is important to note that in this chapter an accute accent mark ´ appears over a vowel in an underlying representation to indicate that that vowel's syllable is listed in the lexicon as accented. Acute accents will also continue to be used to indicate main stress in

surface representations. Not all accented syllables receive primary stress in the surface form, because some words have more than one accented syllable, and there can only be one syllable in each word with the primary stress - the highest column in the word's metrical grid (see earlier discussion of Culminativity).

In contrast to the shifting patterns of stress in regular nouns, in those examples that have accent, stress does not shift. When suffixes are added to these words, stress stays put. The ultima (63), penult (64), and antepenult (65), may be all accented.

(63)	a.	**'ìníit**	**'ìníitne**	'house (NOM)/ (OBJ)'
	b.	**qàasí'**	**qàasí'pe**	'bumblebee (NOM)/(LOC)'
	c.	**kàpóo**	**kàpóoki**	'coat (NOM)/(INST)'
	d.	**'ìsk'íil'**	**'ìsk'íil'ne**	'pica (NOM)/(OBJ)'
(64)	a.	**háama**	**háamànm**	'man (NOM)/(ERG)'
	b.	**x̂áx̂àac**	**x̂áx̂àacpa**	'grizzly bear (NOM)/ (LOC)'
	c.	**wìlúupup**	**wìlúupùppe**	'January (NOM)/(LOC)'
	d.	**wìwíce'**	**wìwíce'ne**	'log (NOM)/(OBJ)'
(65)	a.	**híisèmtùks**	**híisèmtùksnim**	'sun (NOM)/(ERG)'
	b.	**'álòk'at**	**'álok'àtki**	'bighorn sheep (NOM)/(INST)'
	c.	**qósàlat**	**qósalàtna**	'buck goat (NOM)/(OBJ)'
	d.	**sìmíinèkem**	**sìmíinekèmpe**	'Lewiston, ID (NOM)/(LOC)'

Morphologically simplex nouns of greater than three syllables are practically absent, so no examples of accented pre-antepenultimate stem syllables are shown. The accented ultimas in (63) show that the constraint which requires an accented syllable to have main stress outranks Non-Finality, and the accented antepenults in (65) show that assigning main stress to an accented syllable is more important than violating the constraint Edgemost Right. This will be made explicit in §4.2.3.

Accented syllables may have either short or underlyingly long vowels, with one exception. It is very unusual to find short vowels in accented ultimas. (66a) may be the only example. Otherwise, there is only a general tendency for accented vowels to be underlyingly long.

(66) Accented short vowels

a.	**qàasí'**	**qàasí'pe**	'bumblebee (NOM)/(LOC)'
b.	**χáχàac**	**χáχàacpa**	'grizzly bear (NOM)/ (LOC)'
c.	**wìwíce'**	**wìwíce'ne**	'log (NOM)/(OBJ)'
d.	**'álòk'at**	**'álok'àtki**	'bighorn sheep (NOM)/(INST)'
e.	**qósàlat**	**qósalàtna**	'buck goat (NOM)/(OBJ)'

(67) Accented long vowels

a.	**'ìníit**	**'ìníitne**	'house (NOM)/ (OBJ)'
b.	**kàpóo**	**kàpóoki**	'coat (NOM)/(INST)'
c.	**'ìsk'íil'**	**'ìsk'íil'ne**	'pica (NOM)/(OBJ)'
a.	**háama**	**háamàki**	'man (NOM)/(INST)'
b.	**qèqéey'et**	**qèqéey'etpe**	'in-law (NOM)/(LOC)'
c.	**wìlúupup**	**wìlúupùppe**	'January (NOM)/(LOC)'
a.	**híisèmtùks**	**híisèmtùksnim**	'sun (NOM)/(GEN)'
b.	**cìyíitìtit**	**cìyíitìtìtne**	'killdeer (NOM)/(OBJ)'
c.	**sìmíinèkem**	**sìmíinekèmpe**	'Lewiston, ID (NOM)/(LOC)'

Since the vowel in an accented syllable gets main stress, if it is long underlyingly, then it is realized as long.

It is essentially impossible to predict when a word will have accent. There are some tendencies that can be noted, but they are only tendencies. Proper names tend to be accented, especially place names. Many animal names are accented and so are a number

of borrowed words. Many verb roots also have lexical accent. When this is the case, stress cannot shift to the tense/affix suffixes or to other suffixes. In (68), the accented root **k'líl** 'be unable to pass' is seen and in (69) the accented root **k'óomay** 'be sick' is given.

(68)	a.	**k'ilílce** **k'líl-cee** be.unable.pass-INC 'I am unable to pass'		b.	**hik'lílcaqa** **hii-k'líl-cee-qa** 3-be.unable.pass- INC-REC 'He was unable to pass'
(69)	a.	**k'óomayca** **k'óomay-cee** be.sick-INC 'I am sick'		b.	**k'óomaytoqsa** **k'óomay-toq-see** be.sick-back-INC 'My pain comes back'

If these verbs had regular stress, the results would have been the following:

(70)	a.	**k'ilílce**		b.	***hik'lilcáaqa**
(71)	a.	***k'omáyca**		b.	***k'omaytóqsa**

(For more discussion of exceptional words, see Crook (1995)).

There are a number of bound morphemes that have accent. When an accented affix is added to a stem, it attracts primary stress to itself. With adjectives, the effects of affixation with an accented suffix are seen with the intensive suffix **-níx** in (72)-(73).

(72)	a.	**himéeq'is**	'big (NOM)'
	b.	**himeq'íisne**	'big (OBJ)'
	c.	**himeq'isníx**	'very big'
(73)	a.	**lammát'ic**	'bothersome (NOM)'
	b.	**lammat'íiski**	'bothersome (INST)'

	c.	**làmmat'ìsníx**	'extremely bothersome'
(74)	c.	**wáy'at**	'distant (NOM)'
	b.	**way'áatkax**	'distant (ALL)'
	c.	**way'àtníx**	'very distant'

See also Chapter 2.3.2 for more discussion of this suffix.

Within the range of verbal morphology, there are many accented morphemes. One example is the prefix **pee-** 'third person acting on third person' (3ON3).

(75) a. **hekíce**
hek-cee
see-INC
'I see'

b. **hakcáaqa**
hek-ceeqa
see-REC.PST
'I recently saw'

c. **páakcaqa**
pée-hek-ceeqa
3ON3-see-REC.PST
'he recently saw him'

The alternations in (75a,b) show that the verb 'see' has regular stress. In (75c), the accented prefix **pée-** has been added. Main stress is assigned to **pée-** rather than being assigned to the penultimate syllable as it is in (75a,b). Stress is attracted to this prefix because of accent and not because the prefix has a long vowel. It will be shown in §4.2.2.3. that long vowels do not attract primary stress away from syllables that receive stress because of accent or because they are penultimate.

The question arises as to what will happen when an accented affix is attached to a stem that is itself accented. When there is more than one accented syllable in a word, Nez

Perce chooses one of the syllables to be the most prominent. This is described in §4.5.3, where I explain the interaction of stress, accent, and morphology.

4.2.2.2. Edgemost Right and Non-Finality - a different ranking

In the discussion of accent, it was shown that an accented ultima could receive main stress, even though this is otherwise an unpreferred position for stress. There is a very small set of function words that have stress on the ultima for a different reason. With these words, the priority of the constraint Edgemost Right is greater than that of the constraint of Non-Finality. Because Edgemost Right outranks Non-Finality for this class of words, main stress is always on the last syllable of the word. This stress pattern can be seen in the following three forms of 'that':

(76) a. **konǎ**
ko-ne
that-OBJ 'there'

b. **kònmǎ**
kon-me
that-PL 'those ones'

c. **kònamǎ**
kon-ne-me
that-OBJ-PL 'those ones'

A different pattern of shifting stress emerges, one where primary stress moves as far to the right as possible. These effects are not created by accent, because the morphemes **-ne**

'objective case' and **-me** 'plural human' are not stressed in any other class of words (for more on these two suffixes, see Chapter 2.3.1.4 and 2.3.5.1).

The contrast between regular, penultimate stress and absolute final stress is illustrated in the following sets of examples. In the first two sets (77), (78), bisyllabic stems are contrasted with and without case inflection. With words that have regular stress (the (a) examples), main stress never shifts onto the case suffix. In fact, case suffixes are normally entirely stressless.

(77)	a.	**pískis**	**pìskísne**
		piskis	**piskis-ne**
		'door'	'door (OBJ)'
	b.	**kalá**	**kàlaná**
		kalá	**kalá-ne**
		'a certain amount'	'a certain amount (OBJ)'
(78)	a.	**tátlo**	**tatlóona**
		tatloo	**tatloo-ne**
		'ground squirrel'	'ground squirrel (OBJ)'
	b.	**yòx̂má**	**yòx̂maná**
		yox̂má	**yox̂má-na**
		'those (people)'	'those (people) (OBJ)'

In words with regular stress, Non-Finality is ranked above Edgemost Right. This keeps stress from being assigned to the last syllable of the word. When a word has Edgemost Right ranked above Non-Finality, as seen in the (b) examples here, it causes main stress to be located on the ultima of the uninflected stem and to move onto any case suffix that is added to the stem.

In a third set, I contrast single syllable stems. With a single syllable noun that has regular stress, main stress is assigned to the stem, whether or not it is inflected with a light case suffix. With the pronoun **'ii̍m** 'you (SG)', stress shifts onto the case suffix when the pronoun is inflected.

(79)	a.	**si̍is**	**si̍isnim**
		siis	**siis-nm**
		'stew'	'stew (ERG)'
	b.	**'iim**	**'imi̍m**
		'i̍im	**'i̍im-m**
		'you'	'you (ERG)'

This pronoun has the irregular form **-m** for the ergative (see Chapter 2.3.1.4). Insertion of the epenthetic short **i** is discussed in Chapter 3.4.2.

There is no way to predict which function words will have absolute final stress, and I have identified only six words with this unusual characteristic. My examples are either pronouns or demonstratives (there are no examples of nouns or verbs with this stress pattern). The six words are given in the following table, with each example uninflected, inflected with the ergative case, and inflected with the objective case.

(80)	a.	**'ipí**	**'ìpni̍m**	**'ìpné**	'he/she/it'
	b.	**'iim**	**'imi̍m**	**'ìmné**	'you (SG)'
	c.	**'imé**	**'iméem**	**'imùuné**	'you (PL)/they'
	d.	**kalá**	**kalánm**	**kàlaná**	'certain amount'
	e.	**(ko)**	**koni̍m**	**koná**	'that'
	f.	**yòx̂má**	**yòx̂máam**	**yòx̂maná**	'those (people)'

There is no uninflected form **ko** 'that'. The position of the uninflected form in the paradigm of the distal demonstrative is taken by the suppletive form **yox̂** (see Chapter 2.3.5.2). When derived with the human plural classfier **me** the form **yòx̂má** 'those (people)' has absolute final stress, as seen in (80f). What the set of unusual function words lacks in numbers, its few members surely make up in frequency of use in the language.

It is interesting to observe that in two situations, stress helps to enhance a contrast between a pair of parallel words: **'iim** 'you' versus **'iin** 'I' and **ko** 'that' versus **kii** 'this'. The second person singular **'iim** has absolute final stress (81). This stress pattern constrasts with that of the first person singular **'iin**, which has accent and so always has stress on the initial syllable (82).

(81) a. **'íim**
'you'

b. **'ìmené**
'iim-ne
'you (OBJ)'

c. **'imím**
'iim-nm
'you (ERG)'

d. **'imìmpé**
'iim-nm-pe
you-ERG-LOC
'at yours'

(82) a. **'íin**
'I'

b. **'íine**
'iin-ne
'me (OBJ)'

c. **'íinim**
'iin-nm
'I (ERG)

d. **'íinìmpe**
'iin-nim-pe
I-ERG-LOC
'at mine'

Other than in the stress pattern, second person singular and first person singular differ only in the coda consonant – **m** versus **n**.

Similar parallel paradigms exist between **kii** 'this' and **ko** 'that'. Again, a stress contrast helps to enhance the phonological difference between two words that are syntactically equivalent.

(83)

	'this'	'that'
Instrumental	**kínki**	**kònkí**
Ablative	**kínix**	**konîix**
Ergative	**kínm**	**konîm**
Plural genitive	**kínmem**	**kònmá**
Direct object	**kínye**	**kònyá**
Plural direct object	**kínmène**	**kònmaná**
Benefactive	**kín'yàyn**	**kòn'yáyn**
Plural benefactive	**kínmà'yàyn**	**kònmà'yáyn**

The stem of the proximate demonstrative is accented, so words in its paradigm have stress on the initial syllable. Because the distal demonstrative has the constraint Edgemost Right ranked above Non-Finality, stress is always on the last syllable.

This small set of words with an unusual stress pattern is significant because it helps to illustrate the role of constraints and the fact that ranking is essentially arbitrary. Reranking can create a striking contrast between one form and another. These words also demonstrate that constraints can be differently ranked in the same language for different classes of words, and that the classes can be rather arbitrary themselves.

4.2.2.3. Long vowels that do not shorten

It has been clearly established in §§4.2.1.2.-3. that in Nez Perce long vowels shorten when they do not receive primary stress. I have claimed that the Weight to Stress Principle (specifically WSP_3) is violated when a syllable with a long vowel is without primary stress, and that Nez Perce shortens those long vowels so there will not be a violation of that constraint. Although this is the case in the overwhelming majority of lexical items, there are a number of nouns, verbs,and bound morphemes that have long vowels which do not shorten when they are realized without main stress.

These non-shortening long vowels are significant for at least three reasons. They provide a phonetic contrast between long vowels with main stress and long vowels without main stress. They show conclusively that the Weight to Stress Principle is not ranked high enough in the constraint hierarchy to compel the assignment of main stress to a long vowel. They demonstrate another instance where constraints must be reranked.

Like the function words that have absolute final stress, long vowels that do not shorten are uncommon, although there are quite a few more examples of words with non-shortening longe vowels than there are words with the stress pattern discussed in the previous section. The items in (84) compose all the examples of nouns with non-shortening long vowels that are potentially morphologically simplex:

(84)	a.	**x̂áx̂àac**	**x̂áx̂àacpa**	'grizzly bear (NOM)/(LOC)'
	b.	**hímìin**	**hímìisne**	'wolf (NOM)/(OBJ)'
	c.	**tàamámno**	**tàamàmnóona**	'hummingbird (NOM)/(OBJ)'
	d.	**tèemísquy**	**tèemisqúuyki**	'tree sap (NOM)/(INST)'
	e.	**'ùuyíikem**	**'ùuyikéempe**	'shale (NOM)/(LOC)'

f.	**c'íłiłee**	**c'íłiłeene**	'weasel (NOM)/(OBJ)'
g.	**pìtpílùu**	**pìtpílùupe**	'calf of leg (NOM)/(LOC)'
h.	**mólàa**	**mólàana**	'mule (NOM)/(OBJ)'
i.	**yáqamòo**	**yáqamòopa**	'Yakima, WA (NOM)/(LOC)'
j.	**kùucpúu**	**kùucpúune**	'mink (NOM)/(OBJ)'
k.	**táaqmàał**	**táaqmàałki**	'hat (NOM)/(INST)'
l.	**wáaxlòo**	**wáaxlòopa**	'fleshy part of upper arm (NOM)/(LOC)'

While (84h) and (84i) are obviously borrowings, none of the other nouns are that I know of. Some or most of these noun stems may have at one time been morphologically analyzable, but the only ones now that I know of are possibly (b) and (j):

(85)	a.	**hímìin** 'wolf'	< **him'** 'mouth' + **hiin** 'attributive'
	b.	**kùucpúu** 'mink'	< **kuus** 'water' + **puu** 'person'

However, whenever I have discussed the etymologies of these examples with native speakers, they have been completely unimpressed. I do not believe that the internal structure of these words is in general accessible to speakers, at least not at a conscious level.

Non-shortening long vowels occur in several reduplicated adjective stems, most of which are color words. There is also one noun that fits the adjective pattern. Note that it is the long vowel in the initial syllable, the one that lacks primary stress that is exceptional.

(86)	a.	**yòosyóos**	**yòosyóosna**	'blue (NOM)/(OBJ)'
	b.	**pùuxpúux**	**pùuxpúuxne**	'gray (NOM)/(OBJ)'
	c.	**qèesqées**	**qèesqéesne**	'mottled (NOM)/(OBJ)'
	d.	**pàaxpáax**	**pàaxpáaxna**	'brown (NOM)/(OBJ)'

e. **tàax̂táax̂** **tàax̂táax̂na** 'thimble berry (NOM)/(OBJ)'

Several other examples can be supplied from the color vocabulary, all with stem final accent.

Several examples of verb stems with non-shortening long vowels are provided in (87). The stem is given followed by the verb inflected in the incompletive neutral aspect (for more on verb inflection, see Chapter 2.3.3). The non-shortening long vowel is the one without main stress. This list comprises a considerable proportion of the total set of such verb stems.

(87)	a.	**capiitii**	**càpìitiisa**	'I make an offensive gesture'
	b.	**cáwtiwaa**	**cáwtiwàasa**	'I decorate with shells'
	c.	**ceepéewi**	**cèepéewìse**	'I pick lice'
	d.	**cuq'úulii**	**cùq'úulìice**	'I circle around'
	e.	**lok'óolii**	**lòk'óolìica**	'I lie curled up'
	f.	**peeléey**	**pèeléeyce**	'I am getting lost'
	g.	**tmaanii**	**tìmàaniisa**	'I pick berries'

Perhaps at one time all of these stems were transparently analyzable morphologically, but none of them are now.

Non-shortening long vowels occur in a number of cases in bound morphemes. One example is the verb derivational suffix **-áapiik** (**-náapiik** following a C-stem verb) 'in an obstructive way' (see Chapter 2.3.4.3 for additional discussion of derivation verbsuffixes).

(88) a. **k'òmàynáapìiksa**
k'óomay-náapiik-see
be.sick.-stem-obstructive-INC
'I am sick, and as a result, I could not do certain things'

b. **pìq'ilàwnáapìiksìx**
pii-q'íilaw-náapiik-síix
RECIP-turn.head-stem- obstructive -INC
'They turn away from each other'

Among noun stem building morphemes there are the derivational suffixes **-puu** and **-pel'uu**, both of which form words that refer to groups of people (see Chapter 2.3.1.4.1).

(89) a. **nìmíipùu**
nimii-puu
real-person
'Nez Perce (person)'

b. **nìmipùutímt**
nimipuu-tímt
Nez.Perce- speech
'Nez Perce language'

(90) a. **páaps**
'red fir'

b. **páapspal'òo**
paaps-pel'uu
'red fir people (Colville Tribe) '

A few additional examples exist for both nouns and verbs.

Some morphemes ride the fence. In some cases, they have accent and in others they lack accent completely and have non-shortening long vowels. One example is the attributive suffix **-hiin**, which is either accented or has a non-shortening long vowel (see also Chapter 2.3.2 and 2.3.4.6).

(91) a. **tàlohíin**
taaloo-híin
testes-ATRB
'stud horse'

b. **'àlahíin**
'aalaa-híin
fire-ATRB
'steam locomotive'

c. **kùusíin**
kuus-híin
water-ATRB
'dewy'

(92)	a.	**háamìin** **haama-hiin** man-ATRB 'married woman'		b.	**mìya'ácìin** **miya'c-hiin** child-ATRB 'person with child'
	c.	**'ìléepqetìin** **'iléepqet-hiin** shoe-ATRB 'shod'			

Another example of a morpheme that can be either accented (93) or have a non-shortening long vowel (94) is the location/place name formant **-ees/-wees** (see also Chapter 2.3.4.6).

(93)	a.	**'èlwées**	**'èlwéespe**	'winter lodge (NOM)/(LOC)'
	b.	**wèyikées**	**wèyikéespe**	'crossing place (NOM)/(LOC)'
	c.	**tèw'yènikées**	**tèw'yènikéespe**	'settlement (NOM)/(LOC)'
(94)	a.	**páayniwàas**	**páayniwàaspa**	'Arrival-place (NOM)/(LOC)'
	b.	**wéeyèes**	**wéeyèespe**	'dance floor (NOM)/(LOC)'
	c.	**'èlwítèes**	**'èlwítèespe**	'girls' quarters (NOM)/(LOC)'
	e.	**tèméeyènwèes**	**tèméeyènwèespe**	'sweat bath (NOM)/(LOC)'
	f.	**téemèes**	**téemèespe**	'camas oven (NOM)/(LOC)'

The noun 'table' belongs to one set for some speakers and to the other set for others.

(95)	a.	**hípinwèes**	**hípinwèespe**	'table (NOM)/(LOC)'
	b.	**hìpìnwées**	**hìpìnwéespe**	

It is important to recognize that secondary stress cannot be expected to save the long vowels in the words and morphemes I have just described, because secondary stress does not do so for other long vowels in Nez Perce:

(96)	a.	**wéeptes**	**wèptéesne**	'eagle (NOM)/(OBJ)'

b.	**tèykúumkum**	**tèykùmkúumpe**	'icicle (NOM)/(LOC)'
c.	**méeẋsem**	**mèẋséemne**	'mountain (NOM)/(OBJ)'
d.	**núusnu**	**nùsnúune**	'nose (NOM)/(OBJ)'

Words with non-shortening long vowels are made even more interesting by the fact that a number of them have both a long vowel that shortens and one that does not. In the word for the Nez Perce people, **nìmíipùu**, the penultimate long vowel, which has stress in the nominative form, loses stress when the accented derivational suffix **-tímt** 'speech' is added to create the word for Nez Perce Language (97).[6]

(97)	a.	**nimíipùu** **nimíipuu** 'Nez Perce People'	b.	**nìmipùutímt** **nimíipu:tímt** 'Nez Perce Language'

In the underlying forms, the non-shortening long vowel is underlined. The accented vowel in the stem **nìmíipùu** undergoes reduction when it loses main stress to the accented derivational suffix, but the long vowel in **puu** does not shorten.

The three nouns in (98) exhibit reduction of a regular long vowel following a non-shortening long vowel. The regular long vowel receives stress through the regular algorithm.

(98)	a.	**tàamámno** **taamamnoo**	**tàamàmnóona** **taamamnoo-na**	'hummingbird (NOM)/(OBJ)'
	b.	**tèemísquy** **teemisquuy**	**tèemisqúuyki** **teemisquuy-ki**	'tree sap (NOM)/(INST)'

[6] An explanation for how the winner is determined between two accented morphemes is provided in sub-section 5.5.3.1.

c.	**'ùuyíikem**	**'ùuyikéempe**	'shale (NOM)/(LOC)'
	'uuyiikeem	**'uuyiikeem-pe**	

Except for the unusual behavior of the long vowels, these nouns are metrically unremarkable.

The same set of patterns is seen in verbs. In (99), the verb stem **lk'óolii** 'wrap up, curl up' is found. The first long vowel **oo** is accented and the second long vowel **ii** is non-shortening.

(99)	a.	**hilk'óoliica**	b.	**capáalk'oliiksa**
		hii-lk'óolii-cee		**cepée-lk'óoliik-see**
		3-curl-INC		PRESS-curl-INC
		'he lies curled up'		'I am coiling it up.'

Under regular inflection (99a), the accented long vowel receives stress and remains long. With the affixation of the accented derivational prefix **cepée-** 'do by pressing', stress shifts away from the accented long vowel of the stem (99b). This vowel shortens, but the non-shortening long vowel remains unchanged. The same behavior is seen for the verb **tmaanii** 'pick berries'

(100)	a.	**timaaníisa**	b.	**hipatmaanisáana**
		tmaanii-see		**hii-pe-tmaanii-see-ne**
		pick.berries-INC		3-PL-pick.berries-INC-RMT
		'I am picking berries.'		'They were picking berries.'

In the first example, both long vowels are long. However, when the regular long vowel loses stress in (100b), it shortens. This has no effect upon the non-shortening long vowel **aa**.

These unusual vowels are important for at least four reasons. First, they provide a clear phonetic contrast between long vowels with main stress, and short vowels with primary, secondary and zero stress. A long vowel with primary stress has much higher amplitude, higher pitch, and greater length than a long vowel that does not shorten, which has secondary stress. However, the non-shortening long vowel is still much longer than a short vowel, even one with primary stress.

The second reason that these special long vowels are important is that they clearly show that a long vowel in and of itself does not attract main stress. WSP_3 is clearly violated in examples like (101)-(103).

(101)	a.	**tàamámno** **taamamnoo**	**tàamàmnóona** **taamamnoo-ne**	'hummingbird (NOM)/(OBJ)'
(102)	b.	**tèemísquy** **teemisquuy**	**tèemisqúuyki** **teemisquuy-ki**	'tree sap (NOM)/(INST)'
(103)	c.	**'ùuyíikem** **'uuyiikeem**	**'ùuyikéempe** **'uuyiikeem-pæ**	'shale (NOM)/(LOC)'

Edgemost Right must outrank WSP_3 because it forces stress closer to the right, away from the long vowels.

The third reason that these special vowels are important is that they show that the constraint WSP_4 outranks Non-Finality. That constraint says that a super-heavy syllable must have secondary stress. In §4.3.2., I will show that while word final CVC is stressless word final CVVC and CVV always have at least secondary stress.

The fourth reason that words with long vowels that do not shorten are important is that they argue for an additional instance of reranking of constraints in the lexicon.

4.2.3. Analysis of regular and irregular forms

In §4.2.1.3., it the following constraints were established with ranking shown:

(104) Non-Finality » Edgemost Right

The tableaux in (43) and (44), repeated here, were seen to produce the forms in (105)

(105) a. **pískis** 'door'
b. **pìskísne** 'door (OBJ)'

(43)

/piskis/	Non-Finality	Edgemost Right
☞ **pískis**		*
pìskís	*!	

(44)

/piskisne/	Non-Finality	Edgemost Right
pískìsne		**!
☞ **pìskísne**		*
pìskìsné	*!	

However, for the function words described in §4.2.2.2., this ranking would chose the incorrect candidate ***konmána** in (106).

(106) (Incorrect result)

/konmana/	Non-Finality	Edgemost Right
☞ **konmána**		*
konmaná	*!	

For this small set of words, the opposite ranking of these two constraints must hold:

(107) Edgemost Right » Non-Finality

This produces the correct results, as seen in (108), where the first candidate loses because it violates Edgemost Right.

(108)

/konmana/	Edgemost Right	Non-Finality
kònmána	*!	
☛ **kònmaná**		*

The second candidate violates Non-Finality, but this is preferable because for this word Edgemost Right is ranked above Non-Finality.

A second kind of lexical exception are the vowels which do not shorten when they lack main stress. For a subset of these words, where neither long vowel reduces, reranking the Weight to Stress Principle (WSP_3) and faithfulness to vowel length Ident(V-Length) will achieve the correct results (109).

(109)	a.	**yòosyóos**	**yòosyóosna**	'blue (NOM)/(OBJ)'
	b.	**pùux̂púux̂**	**pùux̂púux̂ne**	'gray (NOM)/(OBJ)'
	c.	**qèesqées**	**qèesqéesne**	'mottled (NOM)/(OBJ)'
	d.	**pàax̂páax̂**	**pàax̂páax̂na**	'brown (NOM)/(OBJ)'

(110) Ident(V-Length) » WSP_3

(111)

/puuxpuux/	Ident(V-Length)	WSP_3
☛ a. **puuxpúux**		*
b. **puxpúux**	*!	

Because faithfulness to vowel length is more important than the WSP for this example, candidate (a) wins.

For these examples, it is not possible to get the correct stress placement simply by reversing the ranking of Edgemost Right and Non-Finality, as is the case with the set of function words described in §4.2.2.2. above. If these two constraints were simply reranked we would expect forms like ***puux̂puux̂né** 'gray (OBJ)' (compare with (109b)). Stress is assigned by accent in these words. The analysis of accent will be taken up at the end of this section.

It is not the case that all reduplicated forms have the reverse ranking of the WSP_3 and faithfulness to vowel length. Most reduplicated forms allow long vowels to shorten when they lack main stress:

(112)	a.	**hòq'hóoq'** **hooq'hooq'** 'pig'		b.	**lèx̂léeqs** **leeqleeqs** 'weeds'
	c.	**lìxlíiks** **liikliiks** 'fish scale'		d.	**qòlosqóolos** **qooloosqooloos** 'esophagus'

These examples would have the standard ranking: WSP_3 » Ident(V-Length).

For other words with long vowels that do not shorten, the reranking solution does not work very well. That is because these words contain both kinds of underlying long vowels – those that shorten and those that do not shorten.

(113)	a.	**tàamámno** **taamamnoo** hummingbird		b.	**tàamàmnóona** **taamamnoo-ne** hummingbird-OBJ

		'hummingbird'		'hummingbird (OBJ)'
(114)	a.	**tèemísquy** **teemisquuy** tree.sap 'tree sap'	b.	**tèemìsqúuyki** **teemisquuy-ki** tree.sap-INST 'with tree sap'
(115)	a.	**'ùuyíikem** **'uuyiikeem** shale 'shale'	b.	**'ùuyikéempe** **'uuyiikeem-pe** shale-LOC 'on shale'
(116)	a.	**tìmàaníise** **tmaanii-see** pick.berries-INC 'I am picking berries'	b.	**tìmàanisíix** **tmaanii-síix** pick.berries-INC.PL 'we are picking berries'

Each of these stems contains a vowel that remains long when it lacks main stress and a vowel that is realized with its underlying length only when it has main stress. To make reranking work, it must be done for individual syllables. I believe that adding this kind of power to the theory should be resisted, although it might be reasonable to allow it for cases of bound morphology.

An alternative approach is to exploit observations made in Chapter 3.2.2 about vowel hiatus. In that chapter it was shown that the loss of an intervocalic **w** or **h** creates a long vowel that does not shorten even when it lacks main stress:

(117)	a.	**watóoya** **watóo-e** wade-PTV 'I waded'	b.	**pòotóoya** **pe-watóo-e** PL-wade-PTV 'we waded'

(118)	a.	**haníisa**	b.	**hàaníisa**
		hanii-see		**hii-hanii-see**
		make-INC		3-make-INC
		'I am making'		'he is making'

The long vowels in the initial syllables of both (b) examples lack main stress, yet they do not shorten, and this is the same pattern seen in the morphologically simplex examples of non-shortening long vowels. The same constraint that preserves hiatus in the morphologically complex examples can be used here.

(119) <u>Preserve Hiatus:</u> "Preserve vowel hiatus"

This constraint must be ranked above the WSP_3. The WSP_3 forces vowels to shorten, but it cannot be allowed to shorten vowels in hiatus.

(120) Preserve Hiatus » WSP_3

Preserve Hiatus is unranked with respect to Non-Finality and Edgemost Right.

In the underlying representation, I will use an **h** as a notational device to represent hiatus. To make the analysis explicit, I include the constraint from Chapter 3.2.2. which causes deletion of intervocalic **h**. This constraint outranks WSP_3.

(121) *<u>VhV</u>

(122) *VhV » WSP_3

The interaction of these constraints produces the correct output in (123) for **tàamámnoo** **/tahamamnoo/** 'hummingbird' (I have not included Non-Finality because it is unnecessary to consider candidates with word final stress).

(123)

/tahamamnoo/	Edgemost Right	*VhV	Preserve Hiatus	WSP_3	Ident(V-Length)
☞ a. **taamámno**	*			*	*
b. **taamámnoo**	*			**!	
c. **tamámnoo**	*		*!		**
d. **tahamámno**	*	*!			*

Candidate (a) wins because although it violates WSP_3 it does not violate Preserve Hiatus or the constraint against intervocalic **h**. The word final long vowel is shortened, but that vowel is not one of the long vowels created by underlying hiatus. Candidate (b) preserves even the word final vowel, but it loses because the WSP_3 outranks Ident (V-Length). Candidate (c) loses because it violates Preserve Hiatus, which outranks the WSP_3. Candidate (d) loses because it violates the constraint against intervocalic **h**. It is important that the constraint against intervocalic **h** outranks the WSP_3, because otherwise candidate (a) would lose to candidate (d).

As I mentioned previously, examples like **tàamámno/tàamàmnóona** 'hummingbird' show that the WSP_3 is ranked lower than Edgemost Right. These examples have regular penultimate stress even though there is a long vowel which is not penultimate. If the ranking were as in (124), stress would be on the long vowel: ***táamamno**. This is shown in (125).

(124) WSP_3 » Edgemost Right

(125) (Incorrect output)

/taamamnoo/	WSP_3	Edgemost Right	Ident (V-Length)
☞ a. **táamamno**		*	*
b. **taamámno**	*!		*

Ranking the WSP_3 above Edgemost Right would cause stress to be assigned to the syllable with the long vowel that does not shorten (both candidates have one violation of Ident (V-Length) because of the loss of underlying vowel length in the last syllable).

The correct ranking is shown in (126) and illustrated in (127).

(126) Edgemost Right » WSP_3

(127)

/taamamnoo/	Edgemost Right	WSP_3	Ident(V-Length)
a. **táamamno**	*!		*
☞ b. **taamámno**		*	*

Because Edgemost Right is ranked above the WSP_3, main stress is assigned closer to the end of the word that the syllable with the long vowel that does not shorten.

The last kind of lexical exceptionality to be formalized is accent. Quite a large number of words exhibit the non-shifting stress pattern caused by accent, including some of the words with long vowels that do not shorten. The question arises as to what exactly is accent? In Nez Perce, a pitch peak or pitch plateau is the most consistent indicator of main stress, and accented syllables usually have main stress. It is well known that cross-linguistically that tones may be attached to syllables in the lexicon. Therefore, it is

tempting to say that accent consists simply of specifying in the lexicon that a syllable has a high vowel attached to it. It might then be argued that the high tone attracts the other indicators of stress which have been discussed for Nez Perce.

There are problems with such a view, however. Words have secondary stress as well as primary stress in Nez Perce, and although syllables with secondary stress almost never show the pitch peaks that syllables with primary stress have, they do have the other characteristics of stress in gradient measure. If the secondary stressed syllables do not have high tones, and it appears that they do not in any consistent way, then there is no reason to posit that syllables with primary stress require a high tone to attract stress.

Another problem with positing that accent consists of a lexical high tone is found when there is more than one accented syllable in the same word. Only one of the accented syllables comes out on top with primary stress, but that does not mean the other accented syllables lose out entirely. Accented syllables that do not receive primary stress normally receive secondary stress (words with multiple accents are treated in §4.3. and §4.5).

The grid in (3), repeated here, illustrates the fact that stress has different levels. Primary or "1" stress receives a high tone, as well as the other indicators of stress. Syllables with secondary stress receive differing degrees of the amplitude, duration, pitch height, and vowel reduction (or non-reduction), depending on the level of stress.

(3)

```
1   3  2 Ø 3 Ø
x
x      x
x    x x    x
x    x x x x x
péenmèkùnisène
```

The constraint which forces stress to be assigned to accented syllables appears to be gradient in nature, but vowels either have a high tone or they do not. To relate the gradient nature of accent directly to the binary nature of tone seems fundatmetally unnatural.

Instead, it is more straightforward to simply relate accent directly to grid height. This is done in the following constraint: [7]

(128) <u>Correspondence to Relative Prominence (CRP):</u>
"An accented syllable has the highest grid column in the prosodic word."

This constraint is also evaluated gradiently. When an accented syllable is demoted from having the highest grid column (i.e., Primary stress), it need not be reduced to the lowest (i.e., stresslessness). Nez Perce shows that even partial satisfaction of the CRP is better than none. In the example (129a), there is just one accented syllable, and it receives the highest grid column, satisfying the constraint Correspondence to Relative Prominence.

---

[7] I am particularly grateful to Donca Steriade for suggesting this alternative to the constraint "Faithfulness to Accent" that I had employed in an earlier analysis.

(129) a.

```
    x
  x   x
  x   x
hìpsíix
hip-síix
eat-INC.PL
'we eat'
```

b.

```
  x
  x x x
  x x x
wéeyìksìx
wéeyik-síix
cross-INC.PL
'we cross'
```

In the second example (129b), there are two accented syllables. Since only one syllable can have the highest grid column, one of the accents must be demoted. The first syllable is chosen to have the highest column, because it is not word final (for complete discussion of cases of multiple accents, see §4.3.3). However, the second accent does not become stressless. It still receives secondary stress.

We can represent violations of the CRP as one star for each grid column that is higher than the accented syllable. In (129a), there would be no violations of the CRP, as we see in (130), which also illustrates the ranking of CRP » Non-Finality.

(130) CRP » Non-Finality

hip-síix	CRP	Non-Finality
☞ a. **hipsíix**		*
b. **hípsix**	*!	

Candidate (a) wins because it does not violate the CRP.

When there are two accented syllables, they cannot both have the highest grid level. In (129b), there must be some violation of the CRP, but the question is how many violations and for which syllable? The following tableau shows that when the final syllable of **wéeyiksìx** is stressless it is worse than when when it has secondary stress. The tableau shows that the CRP outranks Non-Finality, because candidate (a) is better

than candidate (c). **wéeyiksìx** is better than ***wèeyiksíix**, because the former does not violate Non-Finality(candiates (a) and (b) are tied with respect to Non-Finality).

(131)

wéeyik-síix	CRP	Non-Finality
☞ a. **wéeyìksìx**	*	
b. **wéeyìksix**	**!	
c. **wèeyiksíix**	*	*

To make the analysis entirely explicit, we should show that Non-Finality Secondary is violated.

(49) <u>Non-Finality Secondary</u>: "The final syllable must not have secondary stress"

The tableau in (132) shows that Non-Finality outranks Non-Finality Secondary.

(132) Non-Finality » Non-Finality Secondary

wéeyik-síix	CRP	Non-Finality	Non-Finality Secondary
☞ a. **wéeyìksìx**	*		*
b. **wéeyìksix**	**!		
c. **wèeyiksíix**	*	*!	

Candidate (a) only violates the lower ranked Non-Finality Secondary while candidate (c) violates the higher ranked Non-Finality. If the ranking were not as it is expressed here, then ***wèeyiksíix** would either be equal to or better than **wéeyiksìx** is better than. I will return to matters of secondary stress, accent, and constraints in §4.3 and §4.5.2-3.

Correspondence to Relative Prominence (CRP) is highly ranked. It is ranked above the WSP_3, because it causes stress to be assigned to syllables that have short vowels even when there are other syllables with long vowels (133). CRP also causes

stress to be assigned to syllables that are word final (134) and antepenultimate (135), as well as in other positions (136), so it must be ranked above Non-Finality and Edgemost Right.

(133)	a.	**x̂áx̂àasna**	'grizzly bear (OBJ)'
	b.	**nìmipùutímt**	'Nez Perce language'
(134)	a.	**qàasí'**	'bumblebee'
	b.	**'ìníit**	'house'
(135)	a.	**qósàlat**	'buck goat'
	b.	**híisèmtùks**	'sun'
(136)	a.	**péenmèkùnisène**	'he saw her as she was approaching'
	b.	**wìyéetùsepètwèce**	'I mix in as I pound'

It may be worth repeating that when main stress is assigned to long vowels such as **'níit** 'house' and **híisemtuks** 'sun' that this is not because of the WSP_3. As previously described, stress alternations in words like **tàamámno, tàamàmnóona** 'hummingbird (NOM)/(OBJ)' show that the WSP_3 is ranked lower than Edgemost Right. The long vowels in 'house' and 'sun' are realized because they are in an accented syllable.

The ranking of CRP over Edgemost Right is shown in (137) for the noun **'álok'at** 'bighorn sheep ram'.

(137)

'álok'at	CRP	Non-Finality	Edgemost Right
☛ a. **'álok'at**			**
b. **'alók'at**	*!		*
c. **'alok'át**	*!	*	

Because CRP outranks Edgemost Right, stress is assigned to the antepenult instead of the penult (Non-Finality is not violated in the winning candidate). The next example **qàasí'** 'bumble bee' demonstrates the fact that CRP outranks both Non-Finality and the WSP_3. This word has a non-shortening long vowel.

(138)

qaasí'	CRP	Non-Finality	Edgemost Right	WSP_3
☞ **qàasí'**		*		*
qáasi'	*!		*	

Even though the form **qàasí'** violates Non-Finality, it is still the best candidate because CRP outranks Non-Finality.

The interaction of these constraints is seen in better detail for the example **himeq'isníx** 'very big' in (139).

(139)

/himeeq'iis-níx/	CRP	Non-Finality	Edgemost Right	WSP_3	Ident(V-Length)
☞a. **himeq'isníx**		*			**
b. **himeq'íisnix**	*!		*		*
c. **himéeq'isnix**	*!		**		*
d. **himeq'iisníx**		*		*!	*
e. **himeeq'iisníx**		*		*!*	

Even though candidate (a) violates Non-Finality and and Faithfulness to Vowel Length, it still wins. It does not violate CRP and it also does not violate the WSP_3, because the long vowels in the stem have shortened. The violation of this second constraint is the reason

why candidates (d,e) lose, even though they do not violate CRP. Candidates (b,c) both lose because they violate CRP.

In (140) the constraint Ident(V-Length) is shown preserving vowel length in the accented syllable.

(140)

’iníit	CRP	Non-Finality	Ident(V-Length)
☞ ’iníit		*	
’inít		*	*!

Both of the candidates satisfy CRP and they both violate Non-Finality. It is the lower ranked constraint, Ident (V-Length), that determines that the winner preserves vowel length.

The basic constraints which account for the placement of primary stress have now been covered, along with three of the most important kinds of exceptionality. Accent is the most important of the exceptions, and I will return to it in the discussion of secondary stress (§4.3) and in the discussion of morphology and stress (§4.5). The reranking of Non-Finality illustrated the essentially arbitrary nature of ranking. The set of long vowels that do not shorten illustrated the fact that the WSP is ranked below Edgemost Right.

4.3. Secondary stress

The occurrence of secondary stress in Nez Perce can follow from several factors. In §4.3.1, I introduce some additional constraints that are needed to account for secondary stress. In §4.3.2, I discuss strings of unaccented syllables which do not involve reduplication. In reduplicated words, identity between the two parts of the stem can force syllables to have secondary stress that would otherwise lack it. I discuss cases involving reduplication in §4.3.3. In words that have more than one accented syllable, only one of the accented syllables can receive primary stress. When this happens, a gradient satisfaction of CRP causes an accented syllable to have at least secondary stress. I discuss such cases in §4.3.4. In §4.3.5., I discuss levels of secondary stress.

4.3.1. Constraints and secondary stress

The following constraints all play a role in determining which syllables in a word may have secondary stress: CRP, Non-Finality, Edgemost Right, The Weight to Stress Principle, Edgemost Left, *Lapse, *Clash, and Identity. In this section, I will define the new constraints.

CRP, Non-Finality, Edgemost Right, and the Weight to Stress Principle have already been defined in §4.2. I showed in that section that the relevant WSP constraint plays no role in the assignment of primary stress in Nez Perce. It is ranked so low with respect to other constraints which determine placement of main stress that the WSP is

never the determining factor. The role of the WSP_3 seen in those data was to cause long vowels to reduce when they lacked main stress.

In §4.2, the WSP was defined as a family of constraints, of which the overall WSP effects were summarized by the statement that the heavier the syllable is and the less stress that it has, then the worse the violation. I subsequently defined the family of WSP constraints in (47).

(47) WSP_1 "A CVC syllable has main stress."

WSP_2 "A CVC syllable has secondary stress."

WSP_3 "A super-heavy syllable has main stress."

WSP_4 "A super-heavy syllable has secondary stress."

Each of the constraints in can be independently ranked with respect to other constraints such as Edgemost Right and Non-Finality Secondary.

(49) Non-Finality Secondary: "The final syllable must not have secondary stress"

(50) WSP_4 » Non-Finality Secondary » WSP_2

The WSP_4 outranks Non-Finality Secondary, because syllables with long vowels that do not shorten always receive at least secondary stress in word final position. Some examples have been given and addtional evidence will be provided below (see §4.3.2.1 below).

WSP_2 on the other hand is ranked below Non-Finality Secondary with the result that word final CVC is stressless unless some other constraint causes it to have stress (e.g., Correspondence to Relative Prominence, discussed in §4.3.2.2). The difference in

ranking between the two WSP constraints can be seen in the following set of examples, the first of which has a non-shortening long vowel:

(141)	a.	**'ìmíitkìn'ikàay**	b.	**mímqas**
		'imíit-kin'ikaay		**mimqas**
		inside-area		orange
		'inside (the house)'		'orange'

In (a), the secondary stress on the ultima is required by WSP_4, which outranks Non-Finality. The CVC ultima in (b) lacks secondary stress because Non-Finality outranks WSP_2.

I discussed Correspondence to Relative Prominence in §4.2.2.1, showing that it was undominated by other constraints such as Non-Finality and Edgemost Right. There are many cases in which there is more than one accented syllable in the same word. The way in which Nez Perce chooses which accented syllable will receive primary stress is presented in §4.5., the discussion of stress and morphology. In §4.3.4., I show specifically how CRP causes a syllable to receive secondary stress even if it cannot receive primary stress. A pair of brief examples here will be helpful, however.

(142)	a.	**hèxnú'**	b.	**sèpíinèwiyú'**
		hek-nú'		**sepíinewi-ú'**
		see-IRR		measure-IRR
		'I will see'		'I will measure'

In (142a), the irrealis aspect suffix **-ú'** receives main stress because it is the only accented syllable in the word. In (142b), it has to compete with another accented suffix, and the irrealis suffix looses. However, the suffix still gets secondary stress because CRP outranks Non-Finality Secondary.

Non-Finality and Edgemost Right are defined in §4.2.1.1. above. I showed in that section how together these two constraints create penultimate primary stress in words that lack accent. In words with accent, they conspire to cause the penult to receive secondary stress.

(143) a. **'óykàla** 'all'
b. **'óykalàna** 'all (OBJ)'

The accented initial syllable in 'all' prevents stress from moving, but secondary stress can still be assigned to the penult.

Edgemost Right is the constraint that Nez Perce has ranked highly enough that it affects the placement of main stress. This does not mean that the counterpart constraint Edgemost Left does not exist. In languages like Sanskrit and Moses-Columbian Salish, Edgemost Left outranks Edgemost Right. Examples of these languages and the effects of Edgemost Left are presented in §4.5.3.1.2.

Edgemost Left must be ranked below Edgemost Right in Nez Perce, or else primary stress would be found at the left edge in words with regular stress assignment. It is the claim of Optimality Theory that constraints are part of universal grammar and that languages simply rank them in different ways (Prince and Smolensky 1993). It is also claimed that constraints that are lowly ranked can play a determining role in choosing candidates either when the higher ranked constraints are tied or are irrelevant to a particular alternation. In Nez Perce, Edgemost Left causes word initial syllables to be stressed.

(144) a. **hìqùyswíiye** 'he became rich'

b. **hìpekúuye** 'they went'
c. **tòkàpaláhsay** 'raise your hand!'

Word initial stress occurs even with clash.

Not all CV syllables that are not word final have secondary stress. There are cases of weak beats between strong beats. I define the following constraint of *Clash:

(145) *Clash: "Adjacent syllables must not be stressed"

This constraint must be ranked below the constraint WSP_2 that requires a CVC syllable to have secondary stress because CVC syllables have secondary stress even when they are adjacent to other stressed syllables.

(146) WSP_2 » *Clash

This is seen in the word **híisèmtùks** 'sun' where the stressed medial CVC syllable **sem** clashes with syllables on both sides and yet still has secondary stress. *Clash must also be ranked below the constraint which is violated by cases of lapse.

Lapse is defined as occuring when there is a string of two stressless syllables. *Lapse is violated by these occurrences. Members of the WSP set of constraints already require that heavy syllables not be stressless, so the effects of *Lapse are seen in strings of light syllables.

(147) *Lapse: "A series of two stressless syllables may not occur."

(148) *Lapse » *Clash

In many cases, the best candidate satisfies both *Lapse and *Clash, but there are cases where a choice has to be made between the two of them, and in these cases I find that *Lapse is ranked above *Clash in Nez Perce.

The two constraints of *Clash and *Lapse can produce most of the effects of foot structure when the effects of the WSP constraints are factored in. One effect they cannot produce as defined is headedness. Consider a string where two light syllables are found between two stressed heavy syllables: CV̀X<u>CVCV</u>CV̀X. For speakers who have the ranking *Lapse » *Clash, then all things being equal, one of the two syllables must be stressed. The question is which one? In an iambic system, the second light syllable will be stressed. In a trochaic system, the first syllable will be stressed. Nez Perce follows the trochaic pattern.

The problem of headedness can yield itself to greater articulation of the constraint *Clash. Instead of one constraint, two can be posited – *Right Clash and *Left Clash. *Right Clash and *Left Clash cannot be defined over a string of only two syllables, because there is no non-arbitrary way of determining which syllable is the left one or the right one. However, the clash constraints can be defined from the orientation of an unstressed syllable.

(149) *Right Clash: "The series CVCV̀CV̀X is a violation of Right Clash"

(150) *Left Clash: "The series CV̀XCV̀CV is a violation of Left Clash"

By ranking *Right Clash above *Left Clash, the series of two light syllables found between two heavy stressed syllables will be resolved in favor of the following trochaic pattern: CV̀XCV̀CVCV̀X. In Nez Perce, this is the correct resolution for those individuals who rank *Lapse above *Clash:

(151)	a.	**'ìmíitkìn'ikàay**	'inside'
	b.	**nìkéewsèlikù'**	'I hold by pulling'
	c.	**tòkàpaláhsay**	'raise (your hand)!'

This is the only configuration in Nez Perce that requires a means of deriving headedness. For this reason and because in most cases a pair of light syllables between heavy syllables are stressless, I will usually refer a generalized constraint *Clash.

Finally, reduplicated words have special properties with respect to stress. There is a constraint of Identity following McCarthy and Prince (1995):

(152) Ident-BR(Stress): "Corresponding syllables in base and reduplicant must have equal levels of stress"

Ident-BR(Stress) causes the patterns of stress seen in (153).

(153)	a.	**ɬíɬipɬíɬìp**	'ribbon'
	b.	**ɬìte'ɬíte'**	'flat'

Word final CVC syllables are normally stressless. In (153a), a word final CVC syllable in the second of a pair of reduplicated stems has secondary stress in correspondence with the main stressed CVC syllable in the previous stem. Word medial CVC syllables normally have stronger secondary stress than CV syllables. In (153b), the first CV syllable in the word has strong secondary stress and the following CVC syllable comprizes a much weaker beat. I present additional examples of reduplicated words along with a formal analysis in §4.3.3.

I will now present the patterns of secondary stress. I begin with unaccented syllables (§4.3.2), describing first the heavy syllables (§4.3.2.1) and then the light ones (§4.3.2.1). An analysis of the data with tableaux follows the descriptions (§4.3.2.3).

4.3.2. Unaccented syllables and secondary stress

Secondary stress in unaccented syllables can be summarized as follows:

1) Super heavy syllables - CVV, and CVVC - always receive at least secondary stress, even in clash with another stressed syllable.

2) CVC receives secondary stress even in clash unless it is word final. Word final CVC is stressless.

3) CV syllables receive secondary stress depending upon several factors. All word initial syllables ordinarily receive at least secondary stress. Word final CV syllables are never stressed. Word medial CV syllables are stressed if they are penultimate. Word medial CV syllables are stressed to prevent instances of lapse (i.e., a string of two or more unstressed syllables). A constraint against stress clash (i.e., adjacent stressed syllables) prevents all CV syllables from being stressed and sometimes results in destressing. There is optional destressing of CV syllables which clash with main stress to the left or right.

4.3.2.1. Unaccented heavy syllables and secondary stress

The superheavy syllables CVV, and CVVC always have at least secondary stress, even when they follow another stressed syllable. This holds when the syllables are word final, word intial, and word medial.

(154) Word final CVV

a. **c'íiiìee** 'weasel'

b.	**pìtpílùu**	'calf of leg'
c.	**mólàa**	'mule'
d.	**yáqamòo**	'Yakima, WA'

(155) Word final CVVC

a.	**x̂áx̂àac**	'grizzly bear'
b.	**hímìin**	'wolf'
c.	**táaqmàaɬ**	'hat'
d.	**wéeyèes**	'medicine dance floor'

(156) Word initial CVV

a.	**tàamámno**	'hummingbird'
b.	**qàasí'**	'bumble bee'
c.	**tèemísquy**	'tree sap'

(157) Word initial CVVC

a.	**kùucpúu**	'mink'
b.	**tàax̂táax̂**	'thimble berry'
c.	**yòosyóos**	'blue'

(158) Word medial CVV

a.	**hìtmàaníisa**	'he is picking berries'
b.	**hìcèepéew'ye**	'he chose'

(159) Word medial CVVC

a.	**wìlèexnew'éet**	'superintendent'
b.	**k'òmàynáapìiksa**	'I being sick am kept away'

The WSP_4 causes the superheavy syllables to have at least secondary stress, regardless of their position and regardless of clash.

Word initially and medially, a CVC syllable has secondary stress, whether or not it is in clash (some reduplicated words are exceptions to this generalization and are addressed in §4.3.3).

(160) Word initial CVC

a.	**pìtpílùu**	'calf of leg'
b.	**sìstó's**	'harpoon'
c.	**hì'nisíix**	'they are giving'
d.	**wìcx̂emée̓emkt**	'spike elk'
e.	**kàkmám**	'full'
f.	**làymíiwt**	'youngest one'
g.	**càpk'íicay**	'biscuit root cookies'

(161) Word medial CVC preceding main stress

a.	**cìlìmyòxpá'c**	'eyelash'
b.	**hìpè'néhmùne**	'they requested'
c.	**q'àlàmtìtq'á**	'poison oak'
d.	**hìpàwyámxne**	'they peeled'

(162) Word medial CVC following main stress

a.	**cèpée'lètp'et**	'picture'
b.	**qìllúuwèwye**	'I sang a serenade'
c.	**híisèmtùks**	'sun'
d.	**mímqàspa**	'orange (LOC)'
e.	**yáwwìnma**	'rapid river'

In word final position, CVC syllables are stressless. This fact is clearly shown by the secondary stress alternations in the following examples. The stems have an accented syllable on the penult, so stress does not shift. In the uninflected form, the word final CVC is stressless. When a suffix is added that makes a CVC syllable to be no longer word final, the syllable has secondary stress.

(163)	a.	**mímqas**	**mímqàspa**	'orange (NOM)/(LOC)'
	b.	**láwyix**	**láwyìxna**	'useless (NOM)/(OBJ)'
	c.	**táx̂cpol**	**táx̂cpòlna**	'beaver (NOM)/(OBJ)'
	d.	**tíim'es**	**tíim'èski**	'paper (NOM)/(INST)'

The alternations seen in (163) may be explained in terms of Non-Finality and the WSP, specifically the constraint WSP_2 that says CVC must have secondary stress. If WSP_2 is ranked below Non-Finality, then word final CVC will be stressless. Addition of a case suffix allows the formerly word final CVC to be stressed without violating Non-Finality Secondary. WSP_4, that says a superheavy syllable has secondary stress, outranks Non-Finality Secondary. The result is that superheavy syllables receive secondary stress even when they are word final. This analysis will be made explicit and illustrate with tableaux in §4.3.2.

Regarding the status of CVCC, I have argued in Chapter 2.1.3, that these strings consist of a series of a CVC syllable plus a final syllabic consonant. The final syllabic consonant in the following examples prevents a violation of Non-Finality Secondary, allowing the CVC syllable to have secondary stress:

(164) <u>Word final CVC.C</u>

a.	**sáaslàq.s**	'moose'
b.	**híisèmtùk.s**	'sun'
c.	**x̂óyx̂à'.x̂**	'javelin'

In §4.4.1., I will provide evidence that Nez Perce only has one complex coda, namely **x̂s/x̂c**. I discuss an extensive set of epenthesis alternations that provide a strong argument

that word final CVCC strings consist of a CVC syllable followed by a stray consonant that prevents a stressed syllable from otherwise violating Non-Finality.

4.3.2.2. Unaccented light syllables and secondary stress

In Nez Perce, unaccented light syllables provide a varied set of secondary stress patterns. The relevant constraints were defined above in §4.3.1, and the analysis of the patterns in terms of tableaux is provided in §4.3.2.3 below. The constraints and their results for strings of light syllables may be summarized as follows:

1) The result of the constraint Edgemost Left is that almost all initial syllables have at least secondary stress.

2) The constraint *Lapse is violatd by strings of two stressless syllables. Because it is ranked above *Clash, instances of stress clash often occur.

3) The constraint *Clash is violated by clash between stressed syllables, and produces rhythmically weak positions in strings of CV syllables.

4) Non-Finality prevents assignment of secondary stress to final light syllables.

5) Edgemost Right, in conjunction with Non-Finality, causes light penultimate syllables to have secondary stress, if they do not receive primary stress.

6) Speakers optionally destress CV syllables in clash.

The patterns are summarized in the following tables. I have no reliable examples that contain more than four light syllables in a string word initially and word finally, and I

have no good examples of strings longer than three CV syllables in word medial position. I have rejected examples of strings of CV syllables where a CV syllables has secondary stress due to its being underlyingly accented.

(165)	Word initial strings	Optional destressing
	#CV̀	#CV
	#CV̀CV	
	#CV̀CV̀CV	
	#CV̀CVCV̀CV	

(166)	Word final strings	Optional destressing
	CV#	
	CV̀CV#	CVCV#
	CVCV̀CV#	
	CV̀CVCV̀CV#	CVCVCV̀CV#

(167)	Word final CVC	Optional destressing
	CVC#	
	CV̀CVC#	CVCVC#

(168) CVC followed by a case marker

CV̀C-**ne**
CVCV̀C-**ne**

(169)	Word medial strings	Optional destressing
	CV̀XCV̀CVCV̀X	CV̀XCVCVCV̀X
	CV̀XCVCV̀CVCV̀X	

Optional destressing typically takes place when secondary stress is in clash with main stress.

Examples of stress in word initial syllables:

#CV̀ **cèmíitx** 'huckleberries'

	hìpèkyú'	'they will go'
	tèméeyènwèes	'mud bath'

Optional destressing:

#CV	**cemíitx**	'huckleberries'
	hipèkyú'	'they will go'
	teméeyènwèes	'mud bath'
#CV̀CV	**cèmitéxne**	'huckleberries (OBJ)'
	hìpekúuye	'they went'
	tèqelúuse	'I swim'
	wàtawíikse	'I wade'
#CV̀CV̀CV	**tèmènikìnwées**	'garden'
	wàl'àtaqáay	'dishpan'
	tòkàpaláhsay	'raise!' (i.e., your hand)
	wìwàqitúhuc	'old time matches'
#CV̀CVCV̀CV	**hìpekùlewíitipù'**	'they will eat supper'
	tèmenìkew'éet	'farmer'
	hìtemènew'éet	'student'
	wìwaqìtuhúcki	'old time matches (INST)'

The following items exemplify word final strings following main stress:

CV#	**tátlo**	'ground squirrel'
	qáya	'hawk'
CV̀CV#	**'óykàla**	'all'
	'èsepéetwèce	'I mix it'
	'ìpsiméet'ète	'go wash!'
	tìtóolàya	'I forgot'
	tàlapóosàca	'I worship'

Optional destressing

CVCV#	**'óykala**	'all'

	'èsepéetwece	'I mix it'
	tìtóolaya	'I forgot'
	tàlapóosaca	'I worship'
CVCV̀CV#	**'óykalàna**	'all (OBJ)'
	sèpíinewìse	'I measure'
	'àsapáatwacàqa	'I mixed it'
	'àláwyalàca	'I gaff it'
	tàlapóosacàqa	'I was worshipping'
CV̀CVCV̀CV#	**hìsepíinèwiqàna**	'she used to measure'
	'àláwyàlacàqa	'I gaffed it'
Optional destressing:		
CVCVCV̀CV#	**hìsepíinewiqàna**	'she used to measure'
	'àláwyalacàqa	'I gaffed it'

The following examples include CVC alternating as light-heavy depending on whether it is word final or not.

CVC#	**míimqas**	'orange'
	táx̂cpol	'beaver'
CVC-ne	**míimqàsna**	'orange (OBJ)'
	táx̂cpòlna	'beaver (OBJ)'
CV̀CVC#	**píc'qùyet**	'monkey'
	cìyíitìtit	'killdeer'
	kéetwèn'es	'salt'
Optional destressing:		
CVCVC#	**píc'quyet**	'monkey'
	cìyíititit	'killdeer'
	kéetwen'es	'salt'

CVCV̀C-ne#	**pic'quyètne**	'monkey (OBJ)'
	ciyiitiitìtne	'killdeer (OBJ)'
	kéetwen'èsne	'salt (OBJ)'

The following examples of word medial strings are provided.

CV	**capáayawàwksa**	'I melt (something)'
	hìtkúupsepìinewìse	'she hand measures'
CV̀CV	**wàpáayàtaw'áat**	'helper'
	'ìmiitkìn'ikàay	'inside'
	nìkéewsèlikù'	'I hold by pulling'
	'ìmamáacàpakàyksix	'they clean themselves'
	sèpéetùlehìmkè's	'threshing machine'
Optional destressing:		
CVCV	**wàpáayataw'áat**	'helper'
	'ìmamáacapakàyksix	'they clean themselves'
CVCV̀CV	**hìtkupèlikéecèse**	'she signs her name'
	sèpx̂ulèke'í	'hubbard squash'

In the next section, I provide an analysis of these patterns.

4.3.2.3. Analysis of secondary stress in unaccented syllables

The essential observations are summarized as follows:

Superheavy syllables always have at least secondary stress even word finally.

(170)	a.	**x̂áx̂àac**	'grizzly bear'
	b.	**ciłłèe**	'weasel'
	c.	**sáaslàqs**	'moose'

CVC syllables at least have secondary stress unless they are word final.

(171)	a.	**tíim'es**	**tíim'èsne**	'paper (NOM)/(OBJ)'
	b.	**ɬíisèmtùks**		'sun'

CV syllables have secondary stress word initially, when they are penultimate, and when it is necessary to prevent lapse. CV syllables are optionally destressed in clash.

The constraints needed to account for these patterns are the WSP set of constraints, Non-Finality, Edgemost Right, Edgemost Left, *Lapse, and *Clash. The last constraint can be broken into *Right Clash and *Left Clash.

Accounting for heavy syllables is relatively straightforward. Two WSP constraints are ranked above and below Non-Finality. All three are reiterated here for comparison, along with their ranking. Preserve Hiatus (see §4.2.3) is included to account for long vowels which do not shorten when they lack main stress.

(172)	WSP_2	"A CVC syllable has secondary stress."
	WSP_4	"A super-heavy syllable has secondary stress."
(173)	Non-Finality Secondary	"A word final syllable is stressless"

(174) Preserve Hiatus » WSP_4 » Non-Finality Secondary » WSP_2

The interaction of these constraints can now be compared for a word final superheavy syllables versus just a heavy CVC syllable. All of the words have accent on the stem's penult so that the secondary stress status of word final syllables can be examined in isolation from primary stress. It is assumed that CRP outranks the relevant constraints so that stress does not shift in these examples.

In (175), candidate (a) has violated Non-Finality Secondary, but it is most optimal because it has not violated WSP_4. Violation of WSP_4 is the reason that candidate (b) has lost. The constraint Preserve Hiatus is more highly ranked than either of these constraints, and accounts for the retention of vowel length.

(175)

/x̂áx̂aac/	Preserve Hiatus	WSP_4	Non-Finality Secondary	WSP_2
☞ a. x̂áx̂àac			*	
b. x̂áx̂aac		*!		
c. x̂áx̂ac	*!			

In (176), the highly ranked WSP_4 does not play a role because the ultima is not super-heavy. Instead, it is the lower ranked WSP_2, which applies to CVC syllables. Since WSP_2 is outranked by Non-Finality, the candidate (a) is chosen.

(176)

/tíim'es/	WSP_4	Non-Finality Secondary	WSP_2
☞ a. tíim'es			*
b. tíim'ès		*	

When **tíim'es** 'book' undergoes affixation with the objective case suffix, it allows the stem final CVC syllable to receive secondary stress, as shown in (177).

(177)

/tíim'esne/	WSP_4	Non-Finality Secondary	WSP_2
☞ a. tíim'ènse			
b. tíim'esne			*!

WSP_2 can be satisfed without violating Non-Finality.

By their definition, WSP constraints play no role in assigning stress to CV syllables. Instead, the constraints Non-Finality, Edgemost Right, Edgemost Left, *Lapse, and *Clash account for stress assignment in strings of light syllables.

(178) Edgemost Right: "Stress must be at the right edge of the word"

(179) Edgemost Left: "Stress must be at the left edge of the word."

(180) *Lapse: "A series of two stressless syllables may not occur."

(181) *Clash: "Adjacent syllables must not be stressed"

The Nez Perce rankings for these constraints are as follows:

(182) *Lapse » *Clash
Edgemost Left » *Clash
Non-Finality » Edgemost Right
Edgemost Right » Edgemost Left

I have no candidates where either Non-Finality, Edgemost Right, or Edgemost Left come into conflict with *Lapse, so it is unnecessary to specify a ranking. None of these constraints outranks CRP or Preserve Hiatus.

Note that WSP_2, which requires CVC to be stressed, also outranks *Clash as the tableau in (184) illustrates for the word **híisèmtùks** 'sun' (the ranking of WSP_4 above WSP_2 has already been established).

(183) WSP_2 » *Clash

(184)

/híisemtuks/	WSP_4	WSP_2	*Clash
☛ a. **híisèmtùks**			**
b. **híisemtùks**		*!	
c. **híisèmtuks**	*!	*	

Even though the winning candidate has two clash violations, it is preferable to leaving a non-final CVC syllable unstressed.

The constraint *Clash causes patterns of alternating stress in strings of CV syllables. Beginning with a simple, word initial CVCV string in **hìciluúse** 'he is boiling (something)', the tableau in (185) shows why secondary stress is assigned to the initial syllable and only the initial syllable. Secondary stress in candidate (a) satisfies *Clash, *Lapse, and Edgemost Left.

(185)

/hiciluúse /	Edgemost Left	*Lapse	*Clash
☛ a. **hìciluúse**			
b. **hìcìluúse**			*!
c. **hiciluúse**	*!	*	
d. **hicìluúse**	*!		*

Candidate (b) does not violate *Lapse, but it does violate *Clash. Candidate (c) avoids violating *Clash, but it violates both *Lapse and *Edgemost Left. Candidate (d) does not violate *Lapse, but it violates both *Clash and Edgemost Left. All the candidates compared satisfy the highly ranked constraint of CRP. Any candidate that did not have main stress on the accented syllable **lúu** would be ruled out by this constraint. The tableau in (185) shows that the correct results for this example can be obtained without Edgemost Left, but this constraint will be needed for other examples.

In the next example **hìpekùlewíitipù'** 'they will eat supper', I illustrate the importance of the constraint *Lapse. *Clash and Edgemost Left cannot by themselves

obtain the correct result. The winning candidate violates none of the constraints presented in the tableaux. Candidate (b) is the one which makes it clear that *Lapse is needed for this example. Without the violation of *Lapse, candidates (a) and (b) would be tied.

(186)

/hipekulewíitipú'/	Edgemost Left	*Lapse	*Clash
☞ a. **hìpekùlewíitipù'**			
b. **hìpekulewíitipù'**		*!	
c. **hipèkulèwíitipù'**	*!		*
d. **hipèkulewíitipù'**	*!	*	
e. **hìpèkùlèwíitipù'**			*!***

*Clash and *Lapse can be used by themselves apart from Edgemost Left to rule out the permutations of stress in candidates (c-e).

In the next example **tèmènikées** 'garden', I illustrate the importance of the constraint Edgemost Left. The constraints *Clash and *Lapse by themselves obtain incorrect results. In a word initial string of three light syllables, both the first and second syllables get secondary stress: candidate (a) in (187).

(187)

/ temenikées /	Edgemost Left	*Lapse	*Clash
☞ a. **tèmènikées**			
b. **temènikées**	*!		
c. **tèmenìkées**			*!
d. **tèmènìkées**			*!**
e. **tèmenikées**		*!	*

If stress is assigned only to the middle of the three light syllables, Edgemost Left is violated. If only the constrainst *Clash and *Lapse were applicable, the ungrammatical ***temènikées** would be the optimal form (188a).

(188)

/ **temenikées** /	CRP	*Lapse	*Clash
☛ a. **temènikées**			
b. **tèmenikées**		*!1	
c. **tèmènikées**		*	*!
d. **tèmènikées**			*!**

The role of Edgemost Left is substantiated in these examples.

I have found that word initial CV syllables usually have at least secondary stress, even when they are in clash, and I explain this in terms of the constraint Edgemost Left. This is an occasion when the distribution of stress as predicted by Optimality Theory makes a claim that is different from that made by foot structure. If the basic constituent of stress in Nez Perce were the moraic trochee, then we would expect an initial CV syllable to be stressless when it is in clash with a following heavy syllable, but that does not conform to the Nez Perce data.

(189) a. **wèhéeyqt** 'necklace'
b. **tòkàpaláhsay** 'raise (your arm)!'

In general, all word initial syllables, have high pitch, high amplitude, and unreduced vowel allophones, all consistant hallmarks of stress. Phonetically, initial syllables constitute beats that are simnply much stronger than what would be expected of an unstressed syllable. I take it to be the null hypothesis that if syllables in a certain position

normally have the indicators of stress then that position is a stressed one. An additional argument that intial CV is stressed may be made from destressing. It is found at the end of this section.

In word medial contexts where the left edge is not in question, stress is placed in the middle of the string of three light syllables.

(190) a. **hìtkupèlikéecèse** 'she signs her name'
b. **sèpx̂ulèke'í** 'hubbard squash'

Locating stress in the middle of the string allows the output to satisfy *Lapse without violating *Clash.

(191)

/ **sepx̂uleke'í** /	*Lapse	*Clash
☞ a. **sèpx̂ulèke'í**		
b. **sèpx̂ùleke'í**	*!	*
c. **sèpx̂ulekè'í**	*!	*
d. **sèpx̂uleke'í**	*!*	

This strategy cannot work for word medial CVCV strings. There must be stress clash because *Lapse outranks *Clash. In Nez Perce, the clash is always on the left.

(192) a. **wàpáayàtaw'áat** 'helper'
b. **'ìmíitkìn'ikàay** 'inside'

This pattern of clash can be described by positing two different kinds of clash:

(193) *Right Clash: "The series CVCV̀CV̀X is a violation of Right Clash"

(194) *Left Clash: "The series CV̀XCV̀CV is a violation of Left Clash"

The following ranking is needed:

(195) *Right Clash » *Left Clash

The interaction of the constraints is shown in (196) for **wàpàayàtaw'áat** 'helper'.

(196)

/ wapaayataw'áat /	*Lapse	* Right Clash	*Left Clash
☞ a. wàpáayàtaw'áat			*
b. wàpàayatàw'áat		*!	
c. wàpàayataw'áat	*!		
d. wàpàayàtàw'áat		*!	*

There is no way to produce the correct output without violating one of the three constraints, but because *Lapse and *Right Clash are ranked above *Left Clash, candidate (a) wins. There are cases in which a word medial CVCV string is unstressed, creating a case of lapse. I will discuss these cases below long with destressing that affects word final strings.

The last set of cases are strings of word final light syllables. It has already been shown that word final, unaccented CV is stressless, as is word final CVC. Only super-heavy syllables have stress when they are word final. On the other hand, penultimate syllables almost always have some level of stress because of the combined effects of Non-Finality and Edgemost Right.

When a word has an accented syllable, it may mean that main stress can never be assigned to the penult. This is the case with **'óykàla** 'all'. This does not mean that the principle of Edgemost Right has in ceased to exist and that it cannot be satisfied to some degree by the realization of secondary stress. I believe that the placement of secondary stress on the penult in **'óykàla** helps to partially satisfy Edgemost Right.

We can make the hypothesis concrete by positing the existence of an additional constraint "Edgemost Right - Secondary":

(197) Edgemost Right - Secondary: Secondary stress must be at the right edge.

(198) Edgemost Right - Secondary » *Clash

(199) Non-Finality Secondary » Edgemost Right - Secondary

It will be evaluated by checking syllables from the right edge to find the one that has stress. Edgemost Right - Secondary Stress differs from Edgemost Right in that the latter constraint only checks for primary stress, while the former checks for both primary and secondary stress. The outworking of these constraints is seen in (200).

(200)

/'óykala/	Non-Finality	Edgemost Right Secondary stress	Edgemost Right	*Clash
☛ a. 'óykàla		*	**	*
b. 'óykala		*!*	**	
c. 'óykalà	*!			

Ranking of the different versions of Edgemost Right with respect to each other is unimportant. That Edgemost Right -Secondary Stress is also outranked by Non-Finality is seen in the fact that word final secondary stress never occurs on unaccented light syllables, so candidate (c) is ruled out. With candidate (b), the grammar checks from the right edge until it finds a stressed syllable, the one with accent. There are two violations of Edgemost Right and two violations of Edgemost Right - Secondary Stress. Candidate (a) is a better candidate than (b) because even though it ties with respect to Edgemost Right, it has only one violation of Edgemost Right - Secondary Stress.

The redundancy in this solution of having two versions of Edgemost Right is a weakness. Intuitively, having secondary stress on the penult is better than no stress at all, and it seems more likely that there is one principle of Edgemost Right, which evaluates violations in a gradient manner, including different levels of stress. Given the present formalism, however, the solution given above presents the problem in a straightforward manner.

Returning to the problem of word final strings of light syllables in Nez Perce, the correct output for strings of three light syllables follows naturally from the constraints discussed so far. Penultimate stress is assigned in accordance with Edgemost Right - Secondary Stress and Non-Finality, and there is no clash in the winning candidate. This is seen in (201) for **'óykalàna** 'all (OBJ)'.

(201)

/**'óykalana**/	Non-Finality Secondary	Edgemost Right Secondary stress	Edgemost Right	*Clash
☞ a. **'óykalàna**		*	***	
b. **'óykàlana**		**!	***	*
c. **'óykalanà**	*!		***	
d. **'óykalana**		**!*	***	

When there is a word final series of four light syllables, the constraint *Lapse is needed to obtain the correct result. This is shown in (202) for **láwyàlacàqa** 'I gaffed recently'. I imply no ranking between *Lapse and Edgemost Right - Secondary Stress in this tableaux.

(202)

/láwyalacaqa/	Non-Finality Secondary	Edgemost Right Secondary stress	*Lapse	*Clash
☞ a. **láwyàlacàqa**				*
b. **láwyalacàqa**			*!	

Even though candidate (a) has a violation of *Clash, it is better than candidate (b), because the second candidate has a violation of the higher ranked *Lapse.

The two constraints *Lapse and *Clash can obtain the effects of word final secondary stress independent of Edgemost Right - Secondary Stress. Penultimate stress is obtained in the examples **'óykàla** 'all' and **'óykalàna** 'all (OBJ)' because this is the best way to prevent lapse without violating Non-Finality.

(203)

/'óykala/	Non-Finality Secondary	*Lapse	*Clash
☞ a. **'óykàla**			*
b. **'óykala**		*!	
c. **'óykalà**	*!		

(204)

/'óykalana/	Non-Finality Secondary	*Lapse	*Clash
☞ a. **'óykalàna**			
b. **'óykàlana**			*!
c. **'óykalanà**	*!	*	
d. **'óykalana**		*!*	

When there are three light syllables, the correct result can be obtained without violaing *Clash.

The last set of data that must be accounted for regarding strings of light syllables are cases of destressing. Destressing is found primarily when the target CV syllable is in clash with main stress. It can occur in word initial CV syllables (205), word final strings (206) and word medial strings (207). An utterance without destressing is given before one with destressing.

(205) a. **hìnáasapàhawàxqàna** 'it used to give them visions'
[hinaːsəpahəwəxqanə]

hináasapàhawàxqàna
[hɪnaːsəpahəwəxqanə]

b. **sàpáatyòx̂n'as** 'amplifier'
[sapaːtyɔχn'əs]

sapáatyòx̂n'as
[səpaːtyɔχn'əs]

(206) a. **'óykàla** 'all'
['oykalə]

'óykala
['oykələ]

b. **láwyàlacàqa** 'I gaffed recently'
[lawyaləcaqə]

láwyalacàqa
[lawyələcaqə]

(207) a. **wàpáayàtaw'áat** 'helper'
[wapaayatəw'aat]

wapáayataw'áat
[wəpaayətəw'aat]

b. **'ìmamáacàpakàyksix** 'they clean themselves'
['iməmaacapəkayksɪx]

'ìmamáacapakàyksix
['iməmaacəpəkayksɪx]

I have given the phonetic transcriptions which illustrate the vowel allophony, which is one of the most important clues to stress in CV syllables.

The fact that destressing occurs with CV syllables in clash suggests that it involves reranking of the constraints *Lapse and *Clash. The analysis of destressed **'óykala** 'all' is presented in (208).

(208)

/**'óykala**/	Non-Finality Secondary	*Clash	*Lapse
a. **'óykàla**		*!	
☛ b. **'óykala**			*
c. **'óykalà**	*!		

Because both constraints can be satsfied in a series of three light syllables, destressing does not occur in the example **'óykalàna** 'all (OBJ)' (phonetically [**'oykəlanə**]).

(209)

/'óykalana/	Non-Finality Secondary	*Clash	*Lapse
☞ a. **'óykalàna**			
b. **'óykàlana**		*!	
c. **'óykalanà**	*!		*
d. **'óykalana**			*!*

Initial CV syllables are destressed by some speakers in clash, particularly when it is clash with a main stressed syllable.

(210) a. **hiw'áaw'àsa** 'he is fishing'
b. **sapáatyòx̂n'as** 'amplifier'

Obtaining destressing effects in word initial light syllables can be accomplished simply by reranking Edgemost Left below *Clash. The constraint *Lapse is not violated in these situations, so reranking between it and *Clash would not effect the outcome.

(211)

/ hiw'áaw'àsa /	*Lapse	*Clash	Edgemost Left
☞ a. **hiw'áaw'àsa**			*
b. **hìw'áaw'àsa**		*!	

There is variation between speakers with respect to destressing and in particular initial syllable destressing. The variation seems to run along generational lines. Younger speakers seem to rank *Clash more highly than do older speakers. It is also the case with initial syllable destressing that it is more likely to happen with main stress than with secondary stress. As was the case with the WSP and with Edgemost Right, *Clash can be made into a constraint set as in (212).

(212) *Clash with main stress » *Clash with secondary stress.

The different clash constraints could then be ordered differently to achieve different kinds of destressing.

The effects of destressing are not robust, and one of the problems of studying it is its optionality. It seems to be tied to rate of speach as well as to generational differences. This suggests that it may be an effect of economy of effort. It seems not unlikely that clash itself may be reducible to ecomony of effort at some level.

4.3.3. Reduplicated words and secondary stress

Reduplicated words violate some of the previously discussed generalizations because of identity between the two stems. In the following set of words (213), main stress is on the last syllable of the first stem of the reduplicated word. The corresponding position in the second stem is a word final CVC syllable. However, instead of being stressless, as is expected of a word final CVC syllable, these syllables have secondary stress.

(213)	a.	**łiłípłiłìp**	'ribbon'
	b.	**so'óyso'òy**	'collapsed, flat (like a tire)'
	c.	**suk'úysuk'ùy**	'dark brown'
	d.	**siw'íiwsiw'ìw**	'light brown'
	e.	**quyéesquyès**	'stellar's jay'
	f.	**peléeypelèy**	'confused, stupid'

Identity with the location of main stress causes the word final CVC syllable to receive secondary stress even though a word final CVC would otherwise be stressless.

In the following set of words, main stress is on a CV penult and the word final CVC is stressless. This results in a stressless or nearly stressless CVC syllable in the antepenultimate position, because of correspondence with the stressless word final CVC. The word initial CV syllable has a higher level of secondary stress in its correspondence with the main stressed penult, than an initial CV syllable would normally have when in clash with a following CVC. Word initial CV syllables that are in clash with a following CVC syllable usually have weak secondary stress. However, when the CV syllable is in correspondence with a main stressed syllable, it will have a higher level of secondary stress than would otherwise be expected.

(214)	a.	**ɬìte'ɬíte'**	'flat'
	b.	**qòlosqólos**	'esophagous'
	c.	**qùlusqúlus**	'dandruff'
	d.	**còqoycóqoy**	'tipi'
	e.	**pìlespíles**	'bed bug'
	f.	**wèt'etwéet'et**	'nettles'
	g.	**tèlestéeles**	'fern species'
	h.	**nìcka'níicka'**	'strawberry'

The last example (214h), has four CVC syllables, but the same pattern of strength and weakness.

When stress is assigned to the antepenult of a reduplicated word, like those in (213), it does not shift. Such syllables are accented:

(215)	a.	**ɬiɬípɬiɬìp**	**ɬiɬípɬiɬìpki**	'ribbon (NOM)/(INST)'
	b.	**quyéesquyès**	**quyéesquyèsne**	'stellar's jay (NOM)(OBJ)'

In reduplicated words that have penultimate stress in the uninflected form, stress can shift.

(216)	a.	**qòlosqólos**	**qòlòsqolóospa**	'esophagous (NOM)/(LOC)'
	b.	**qùlusqúlus**	**qùlùsqulúusne**	'dandruff (NOM)/(OBJ)'
	c.	**pìlespíles**	**pìlèspiléesne**	'bedbug (NOM)/(OBJ)'
	d.	**tèlestéeles**	**tèlèsteléesne**	'fern species (NOM)/(OBJ)'

When main stress shifts, secondary stress is assigned to the CVC syllable that was stressless in the uninflected form.

The effects of reduplication upon stress can be analyzed by employing a constraint that enforces identity between the two reduplicated parts of a word. Following McCarthy and Prince (1995), I provide the following Base-reduplicant constraint:

(217) Ident-BR(Stress): "Corresponding syllables in base and reduplicant must have equal levels of stress"

The constraints must have the following rankings:

(218) Ident-BR(Stress) » Non-Finality Secondary

Ident-BR(Stress) » WSP_2

Culminativity » Ident-BR(Stress)

Culminativity is needed to prevent reduplicated syllables from both having stress with the highest grid level. Although reduplicated syllables have stress that is as close to identical as possible, there is never more than one syllable that has the highest level of stress in Nez Perce.

In the following tableaux, we see that Ident-BR(Stress) requires secondary stress to be on the ultima, even though this generates a violation of Non-Finality. Candidate (b) satisfies Non-Finality, but it violates Ident-BR(Stress).

(219)

/quyéesquyees /	Culminativ.	Ident-BR(Stress)	Non-Finality	Ident (V-Length)
☛ a. quyéesquyès			*	*
b. quyéesquùyes		*!		*
c. quyéesquyées	*!		*	

There cannot be two syllables with primary stress. Culminativity rules out the third candidate.

In (220), we find that Ident-BR(Stress) requires a medial CVC to be stressless in correspondence with the word final CVC. The final syllable must be stressless to comply with Non-Finality, so candidate (c) is ruled out. Candidate (a) is the most optimal because it satisfies identity and does not violate Non-Finality.

(220)

/ pileespílees /	Ident-BR(Stress)	Non-Finality Secondary	WSP_2
☛ a. pìlespíles			**
b. pilèspíles	*!		*
c. pìlèspílès		*	*
d. pìlèspíles	*!		

4.3.4. Accented syllables and secondary stress

In the discussion of accented syllables in §4.2., I showed that the constraint CRP causes accented syllables to receive main stress. In those examples, only words with a

single accented syllable were included. When there is more than one accented syllable in a word, only one of the accented syllables can have main stress. This does not mean that accented syllables that do not receive main stress lose out completely. In this section, I will show that accented syllables that do not receive primary stress receive secondary stress. I will also show that when the accented syllables is word final, the syllable is sometimes destressed.

The grid in (3), repeated here, illustrates the fact that stress has different levels. Primary or "1" stress receives a high tone, as well as other indicators of stress. Syllables with secondary stress receive differing levels of indicators, depending on the level of stress.

(3)

```
1   3  2 Ø 3 Ø
x
x      x
x   x  x    x
x   x  x  x  x  x
péenmèkùnisène
```

I proposed in §4.2.3. that lexical stress or accent consists of an indication in the underlying representation that a particular syllable has "1" or primary stress. CRP was defined as follows, and it is evaluated gradiently as in (128).

(128) <u>Correspondence to Relative Prominence (CRP):</u>
"An accented syllable has the highest grid column in the prosodic word."

Unaccented verbs show the regular pattern of penultimate stress (221a,b), unless they are inflected with the incompletive plural **-síix** or the irrealis **-ú'** (221c,d). Both of these aspect markers are accented, and so they attract main stress by virtue of CRP.

(221) a. **hipíse**
hip-see
eat-INC
'I am eating'

b. **hìpsáaqa**
hip-saaqa
eat-REC
'I recently ate'

c. **hìpsíix**
hip-síix
eat-INC.PL
'we were eating'

d. **hìpú'**
hip-ú'
eat-IRR
'I will eat'

The following tableaux shows why primary stress must be assigned to the final syllable of **hipú'** 'I will eat'. As I showed in §4.2.3., CRP outranks Non-Finality.

(222)

/ **hip-ú'** /	CRP	Non-Finality
☛ a. **hipú'**		*
b. **hípu'**	*!	

In contrast to the unaccented S-verb stem **hip** 'eat', the C-verb stem **láwyala** 'gaff' is accented (for more on the verb stem classes see Chapter 2.3.4.1.1). When a verb stem is accented, it prevents primary stress from being assigned to a suffix's word final accented syllable.

(223) a. **láwyalàca**
láwyala-cee
gaff-INC
'I am gaffing'

b. **láwyàlacàqa**
láwyala-caaqa
gaff-REC
'I gaffed recently'

c. **láwyàlacìx**
láwyala-cíix
gaff-INC.PL
'we are gaffing'

d. **láwyàlanò'**
láwyala-nú'
boil-IRR
'I will gaff'

In the following tableaux , where only main stress is indicated, we can see why an accented stem keeps an accented suffix from receiving main stress. No matter which accented syllable is stressed, a violation of CRP will occur. Because of the tie on this highly ranked constraint, the decision is made by the lower constraint Non-Finality, and candidate (a) with the non-final main stressed syllable wins.

(224)

/ **lawyala-nú'** /	Culminativity	CRP	Non-Finality
☞ a. **láwyalano'**		*	
b. **lawyalanó'**		*	*!
c. **láwyalanó'**	*!		*

The data in (223c,d) show that even though the word final accented syllables do not win main stress, they still receive a consolation prize in the form of secondary stress. This allows the derivation to partially satisfy the highly ranked constraint of CRP.

(225)

/ **lawyala-nú'** /	CRP	Non-Finality
☞ a. **láwyàlanò'**	*	*
b. **láwyalàno'**	**!	

Even though candidate (a) violates Non-Finality, this is better than causing a full violation of CRP (one asterisk versus two).

4.4. *Stress and the skeleton: Epenthesis and Syncope*

Nez Perce words undergo changes to the skeleton of vowels and consonants motivated by stress. Epenthesis breaks up word final clusters in order to create a locus for main stress that is closer to the right edge of the word without being word final (§4.4.1). The analysis of epenthesis forms one of the strongest arguments that with one exception the Nez Perce syllable lacks complex codas. There is also a syncope alternation which is driven by stress shift (§4.4.2). When these changes to words are seen in terms of stress placement and the constraints, it is found that the alternations are motivated by the need to create better stress forms.

4.4.1. Stress driven epenthesis

I described one kind of epenthesis that is motivated by syllable structure in Chapter 2.1.3. In those examples, stem initial clusters are broken up because Nez Perce words can only begin with a single consonant.

(226)	a.	**tìmàaníisa**	b.	**hìtmàaníisa**
		timaanii-see		**hii-tmaanii-see**
		pick.berries-INC		3-pick.berries-INC
		'I am picking berries'		'he is picking berries'

In this section, I describe and analyze epenthesis that occurs at the end of a stem.

(227)	a.	**tùpé'c**	b.	**tùpe'ésne**
		tupe'c		**tupe'c-ne**
		rib		rib-OBJ
		'rib'		'rib (OBJ)'

In these cases, epenthesis is motivated by stress assignment. Nez Perce breaks up stem final clusters in nouns with regular stress assignment in order to locate stress closer to the end of the word without it being word final. The optimal form better satisfies Edgemost Right without violating Non-Finality.

4.4.1.1. Stress driven epenthesis - the data

Nez Perce nouns may end in C, CC, and (occasionally) CCC. Under suffixation, nouns that end in a cluster either undergo epenthesis with stress shifting to the epenthesized vowel (228) or they do not (229).

(228)	a.	**wálc**	**wàlásna**	'knife (NOM)/(OBJ)'
	b.	**mú'pc**	**mù'písne**	'yearling fawn (NOM)/(OBJ)'
	c.	**'ítx̂**	**'itúx̂ne**	'dirt (NOM)/(OBJ)'
(229)	a.	**'áps**	**'ápsna**	'flint (NOM)/(OBJ)'
	b.	**póx̂c**	**póx̂sna**	'ancestor (NOM)/(OBJ)'
	c.	**'íitx̂**	**'íitx̂ne**	'woman's sister's child (NOM)/(OBJ)'

The epenthesized vowel may be a copy of the preceding vowel (228), it may be the high front vowel **i** (228b), or occasionally neither vowel (228c).

I will describe and illustrate the basic principles of this kind of epenthesis before formalizing the analysis (§4.4.1.2). I will show that what we see in these words is epenthesis and not syncope (i.e., there is no underlying vowel that is deleted). I will show that epenthesis is motivated primarily by the constraint Edgemost Right, that epenthesis is blocked by CRP, and that epenthesis is not motivated by a need to break up clusters. I

will show that words with epenthesis also undergo vowel shortening to satisfy Weight to Stress (WSP_3).

There are parallel words that have regular, shifting stress which do not undergo alternation of a vowel position.

(230)	a.	**qánis**	**qànísna**	'man's younger sister'
	b.	**qáhas**	**qàhásna**	'milk'
	c.	**qícex̂**	**qìcéx̂ne**	'fur'
	d.	**sú'um**	**sù'úmne**	'pet'

The examples in (230), that do not alternate the vowel position, show that the following words with epenthesis do not have underlying vowels that are deleted.

(231)	a.	**tíms**	**tìmísne**	'cherry'
	b.	**púhs**	**pùhúsne**	'inner skin'
	c.	**sítx̂**	**sìtéx̂ne**	'mud'
	d.	**tùpé'c**	**tùpe'ésne**	'rib'

The underlying representation of 'man's younger sister' is /**qanis**/ and of 'pet' /**su'um**/.

(232)	a.	**qánis**	**qànísna**	'man's younger sister'
		/qanis/	**/qanisne/**	
	d.	**sú'um**	**sù'úmne**	'pet'
		/su'um/	**/su'umne/**	

The underlying representation of 'cherry' is /**tims**/ and 'rib' /**tupe'c**/.

(233)	a.	**tíms**	**tìmísne**	'cherry'
		/tims/	**/timsne/**	

d.	**tùpé'c**	**tùpe'ésne**	'rib'
	/tupe'c/	**/tupe'cne/**	

If it were the case that the underlying representation of **tím̓s** 'cherry' were **/timis/**, it would be unexplained why the second vowel deletes but the corresponding vowel in **qánis** 'man's younger sister' does not.

As I showed in (229), there are words with final clusters that do not undergo epenthesis. Additional examples are provided in (234).

(234)	a.	**yú'c**	**yú'sne**	'poor, pitiful'
	b.	**x̂óyx̂à'c**	**x̂óyx̂à'sna**	'javelin'
	c.	**cát'ox̂c**	**cát'ox̂sna**	'wild hyacith'
	d.	**múx̂s**	**múx̂sne**	'cattail'
	e.	**qóyx̂c**	**qóyx̂sna**	'blueback salmon'
	f.	**'òyáyp**	**'òyáypna**	'Weippe, Idaho'
	g.	**mástàps**	**mástàpsna**	'deaf person'

The non-epenthesizing nouns contrast with examples that have epenthesis.

(235)	a.	**máqs**	**màqásna**	'gall'
	b.	**péqs**	**pèqésne**	'bunch grass'
	c.	**pílx̂**	**pìléx̂ne**	'back of head'
	d.	**písx̂**	**pìséx̂ne**	'tick'
	e.	**p'álx̂**	**p'àláx̂na**	'perfume'
	f.	**qáws**	**qàwásna**	'biscuit root'
	g.	**sám'x̂**	**sàm'áx̂na**	'shirt'
	h.	**tásx̂**	**tàsáx̂na**	'grease'
	i.	**tíkc**	**tìkícpe**	'bridge'
	j.	**tíks**	**tìkíspe**	'hip'
	k.	**tím̓s**	**tìmísne**	'cherry'
	l.	**wálc**	**wàlásna**	'knife'
	m.	**tá'c**	**tà'ásna**	'good'

n.	**nàcó'x̂**	**nàco'óx̂na**	'salmon'
o.	**sèewí's**	**sèewi'ísne**	'mussel'
p.	**sìstó's**	**sìsto'ósne**	'harpoon'
q.	**tàtó's**	**tàto'ósne**	'some'
r.	**tìké's**	**tìke'ésne**	'baby board'
s.	**tùpé'c**	**tùpe'ésne**	'rib'
t.	**wàptó's**	**wàpto'ósna**	'braids'
u.	**kìké't**	**kìke'étne**	'blood'
v.	**lálx̂**	**làláx̂na**	'coffee, seeds'
w.	**lílps**	**lìlpísne**	'meadow mushroom'

The epenthetic vowel is always a copy following glottal stop (235m-t). It is almost always a copy following a low vowel, but there is an exception in the case of 'tongue' **péews, pewísne**, listed with the epenthetic words that have long vowels in (241e) below. The unpredictable epenthetic vowels generally follow a non-epenthetic high front vowel (235c,d) and (235i,j) below.

Nouns with epenthesis considerably outnumber nouns with final clusters that lack epenthesis. It is also the case that nouns with regular, shifting stress outnumber nouns with accent. I propose that accent is the crucial difference between the two kinds of nouns that end in clusters: Nouns with epenthesis are unaccented (and so have regular, shifting stress assignment), while nouns without epenthesis are accented (and so have non-shifting stress). Nez Perce tries to assign main stress as close to the right edge of the word if possible without violating Non-Finality. For words with regular stress, this means epenthesizing a vowel into a cluster to form a position that is closer to the end of the word. For words with accent there is no motivation to epenthesize a vowel, because

stress has to stay fixed on the accented syllable. Moving stress closer to the right edge would entail a violation of CRP.

The two examples with final clusters in (236) clearly have accent, because in the inflected form, stress is assigned to the antepenult. Antepenultimate stress only occurs with accented words, as I demonstrated in §4.2.3.

(236)	a.	**mástàps**	**mástàpsna**	'deaf person'
	b.	**x̂óyx̂à'c**	**x̂óyx̂à'sna**	'javelin'

In (237) and (238), I contrast the underlying representations of accented and unaccented words.

(237)	a.	**x̂óyx̂à'c** **/ x̂óyx̂a'c/**	**x̂óyx̂à'sna** **/ x̂óyx̂a'cne/**	'javelin'
	b.	**mástàps** **/mástaps/**	**mástàpsna** **/mástapsne/**	'deaf person'
	c.	**yú'c** **/yú'c/**	**yú'sne** **/yú'cne/**	'poor, pitiful'
(238)	a.	**máqs** **/maqs/**	**màqásna** **/maqsne/**	'gall'
	b.	**sám'x̂** **/sam'x̂/**	**sàm'áx̂na** **/sam'x̂ne/**	'shirt'
	c.	**nàcó'x̂** **/naco'x̂/**	**nàco'óx̂na** **/naco'x̂ne/**	'salmon'
	d.	**tíks** **/tiks/**	**tìkísne** **/tiksne/**	'hip'

To be completely clear on the fact that epenthesis is not motivated by a need to break up consonant clusters, we may consider the words in (239).

(239)	a.	**pálx̂c**	**pálx̂sna**	'showshoe rabbit'
	b.	**títèw'xc**	**títèw'xcne**	'chisselmouth fish'

In these examples, a CCCC cluster is formed under affixation, but epenthesis does not occur. If epenthesis were motivated by a violation caused by the clusters, then we would expect to see it in these examples. Examples like ***títèw'x̂ìsne** or ***múx̂ùsne** (cf., **múx̂sne** (234)) would be expected that have both non-shifting stress and epenthesis. However, epenthesis never occurs without assigning main stress to the epenthetic vowel.

In §4.2.1.2, I showed that underlying long vowels shorten when they are not assigned primary stress. Three examples are repeated here.

(240)	a.	**táamsas**	**tàmsáasna**	'wild rose'
	b.	**wéeptes**	**wèptéesne**	'eagle'
	c.	**łéepłep**	**łèpłéepne**	'butterfly'

Words with stress driven epenthesis also exhibit shortening of long vowels.

(241)	a.	**páaps**	**pàpásna**	'red fir'
	b.	**píips**	**pìpíski**	'bones'
	c.	**máayx**	**màyáxna**	'sand
	d.	**páasx̂**	**pàsáx̂na**	'sunflower'
	e.	**péews**	**pèwísne**	'tongue'
	f.	**sáayx**	**sàyáxna**	'Pleides'
	g.	**síiks**	**sìkísne**	'nest'
	h.	**'éeyx̂**	**'èyéx̂ne**	'white salmon'
	i.	**cèmíitx**	**cèmitéxne**	'huckleberries'
	j.	**càwíitx**	**càwitáxna**	'wild carrot
	k.	**qìláasx̂**	**qìlasáx̂na**	'otter

l. **tìsaáyx̂** **tìsayáx̂pa** 'East Kamiah, Idaho'

This is another sign that these words follow the regular stress properties. The underlying representations of words with regular stress and underlying long vowels may be compared in (242) and (243). The second set differs essentially in the fact that the words have final clusters.

(242)	a.	**táamsas**	**tàmsáasna**	'wild rose'
		/ta:msa:s/	**/ta:msa:s-næ/**	
	b.	**wéeptes**	**wèptéesne**	'eagle'
		/wæ:ptæ:s/	**/wæ:ptæ:s-ne/**	
	c.	**łéepłep**	**łèpłéepne**	'butterfly'
		/łæ:płæ:p/	**/łæ:płæ:p-ne/**	
(243)	a.	**páaps**	**pàpásna**	'red fir'
		/paaps/	**/paapsne/**	
	b.	**cèmíitx**	**cèmitéxne**	'huckleberries'
		/cemi:tx/	**/cemi:txne/**	
	c.	**qìláasx̂**	**qìlasáx̂na**	'otter
		/qila:sx̂ne/	**/qila:sx̂ne/**	

A word with a final clusters that is accented neither undergoes the shortening of a long vowel nor epenthesis:

(244)	a.	**cíiks**	**cíiksne**	'sister-in-law'
	b.	**wèwéexp**	**wèwéexpne**	'spring'
	c.	**'éeks**	**'éeksne**	'man's sister'
	d.	**tàsíipx**	**tàsíipxna**	'cow elk'
	e.	**qòqaálx̂**	**qòqáalx̂na**	'buffalo'

f.	**'ìsée̓ps**	**'ìsée̓psne**	'bundle'
g.	**cíickan**	**cíickànna**	'blanket'
h.	**yàtóoyn**	**yàtóoynna**	'Arrow, Idaho'
i.	**sáaslàqs**	**sáaslàqsna**	'moose'

The underlying representations of 'buffalo, 'blanket', and 'moose' contrast with the nouns that undergo epenthesis in (245) with respect to accent.

(245)	a.	**qòqaálx̂** **/qoqá:lx̂/**	**qòqáalx̂na** **/qoqá:lx̂ne/**	'buffalo'
	b.	**cíickan** **/cí:ckan/**	**cíickànna** **/cí:ckanne/**	'blanket'
	c.	**sáaslàqs** **/sá:slaqs/**	**sáaslàqsna** **/sá:slaqsne/**	'moose'

In the next section, I will show how the epenthesis patterns are accounted for by the interaction of previously defined constraints along with two additional constraints.

4.4.1.2. Analysis of stress driven epenthesis

The analysis of stress motivated epenthesis depends on the constraints Non-Finality and Edgemost Right, as previously defined. Two additional constraints are also required: Dep-V and Ident-V, following McCarthy and Prince (1995). The first constraint is violted by epenthesis. This constraint is required to prevent unmotivated instances of epenthesis.

(246) Dep-V: "All vowel positions in the output occur in the underlying representation"

I will show that Edgemost Right must outrank this new constraint.

(247) Edgemost Right » Dep-V

Following McCarthy and Prince (1995), we may use Max-V.

(248) Max-V: "All vowel positions in the underlying representation must be included in the output."

This constraint is necessary because Nez Perce does not allow free deletion of vowels.

It will also be important to clarify how clusters are evaluated by Edgemost Right and Non-Finality. Specifically, I will show that with one exception the Nez Perce syllable ends in only a single consonant. The only coda cluster allowed is **x̂s/x̂c**. Other clusters are evaluated as a simplex coda followed by a consonant that is either syllabic or extra-syllabic. The extra consonant in examples like **tùpé'c** 'rib' prevents the occurrence of a Non-Finality violation. The extra consonant also potentially creates an additional violation of Edgemost Right, which is why epenthesis is needed to generate the form **tùpe'ésne** 'rib (OBJ)' rather than ***tùpé'cne**, where stress is farther from the right edge.

The following sets of examples illustrate the essential contrasts. In (249), both examples have regular, shifting stress, and the one with an underlying final consonant cluster has epenthesis. In (250), neither example has shifting stress, and neither example has epenthesis.

(249)	a.	**tùpé'.c**	**tùpe'ésne**	'rib'
		/tupe'c/	**/tupe'cne/**	
	b.	**sú'um**	**sù'úmna**	'pet'
		/su'um/	**/su'umne/**	

(250) a. **yú'.c** **yú'.s.ne** 'poor one'
/yú'c/ /yu'cne/

b. **x̂óyx̂à'.c** **x̂óyx̂à'.s.na** 'javelin'
/x̂óyx̂a'c/ /x̂óyx̂a'cne/

Note that the final CC clusters contain syllabic C's as described in Chapter 2.1.4. and above in §4.2.1.1.

In the uninflected form of **tùpé'.c** 'rib', epenthesis does not occur, because it does not make the uninflected word more optimal. In candidate (b), where stress is placed on the epenthesized vowel, a Non-Finality violation occurs. In candidate (c), insertion of the epenthetic vowel does not cause stress to be closer to the right edge. Candidate (a) wins because it places stress as close as possible to the right edge without violating Non-Finality. It is crucial that in the word final string **pe'.c** that the final **c** prevents a violation of Non-Finality. Otherwise, we would expect stress to be placed on the preceding syllable (i.e., candidate (d)).

(251)[8]

/ **tupe'c** /	Non-Finality	Edgemost Right	Dep-V
☞ a. **tupé'.c**		*	
b. **tupe'éc**	*!		*
c. **tupé'ec**		*	*!
d. **túpe'.c**		**!	

[8] Only main stress will be indicated in the tableaux since it is primary stress and not secondary stress that motivates epenthesis.

Candidate (d) loses because placing stress on the syllable **tu** causes an extra violation of Edgemost Right. Candidate (c) loses because it ties with (a) with respect to Edgemost Right but it has a violation of Dep-V. It is of course possible to evaluate Edgemost Right just in terms of segments rather than syllables. On that measure also, candidate (a) would still be superior to (e). However, I will provide evidence immediately below which shows that Edgemost Right is evaluated in terms of syllables.

In the inflected form of 'rib', epenthesis allows for a more optimal form of the word. Without the epenthetic vowel, stress is farther from the right edge, so candidate (a) loses. Candidate (b) violates Dep-V, but since this constraint is ranked lower than Edgemost Right, epenthesis creates a more optimal form. Stress is located closer to the right edge without being word final. It is crucial that in the string **pe'.s.ne** the intervening consonant **s** between the syllables **pe'** and **ne** count as an additional violation of Edgemost Right. Otherwise, candidates (a) and (b) would tie on this constraint and the grammatical candidate (b) would lose by virtue of its violation of Dep-V. The cost of violating Dep-V can only be recovered by diminishing the degree of violation of the higher ranking constraint Edgemost Right.

(242)

/ **tupe'cne** /	Non-Finality	Edgemost Right	Dep-V
a. **tupé'.s.ne**		**!	
☞ b. **tupe'ésne**		*	*
c. **tupe'.s.né**	*!		
d. **tupé'esne**		**!	*

Candidate (c) shows us that it is impossible to shift stress further to the right without epenthesis. To do so creates a violation of Non-Finality. Candidate (d) illustrates the fact that there is no advantage to the word's undergoing epenthesis without shifting stress. To do so causes stress to be located farther from the right edge without increasing optimality.

Stress driven epenthesis is important evidence that, in general, the Nez Perce coda is at maximum a single C and not CC or greater. If a syllable can have a complex CC coda, and if Edgemost Right evaluates candidates purely in terms of syllable structure, then ***tupé'sne** should be better than **tupe'ésne** 'rib (OBJ)'. If a syllable can have a complex CC coda, and if Non-Finality evaluates candidates purely in terms of syllable structure, then ***túpe'c** should be better than **tùpé'c**, because the latter example should be a violation of Non-Finality. It could be argued that Edgemost Right evaluates candidates in terms of segments such that the more segments that intervene between the right edge and main stress the greater the violation. Non-Finality would have to be somewhat arbitrarily defined as being violated if stress is separated by zero to one segments from the right edge and not violated if stress is separated from the right edge by two or more segments. These interpretations of the constraints will handle the data introduced thus far; however, there is a set of words that indicate that the definitions given interms of syllables are correct. Members of this small set of words actually have a complex coda, and a word final syllable with a complex coda in one of these cases is treated like a syllable with a simple coda by Non-Finality and Edgemost Right.

There is some inter-speaker variation with these words. There are four examples that do not have variation (253), plus an additional three words that have a complex coda for at least some speakers (for other speakers these words have accent on the initial syllable, so it is impossible to tell how the coda is evaluated by Non-Finality and Edgemost Right). Stress alternates between the two vowels of the stem, both of which are underlying, and there is no epenthesis.

(253)	a.	**pí̓yex̂s**	**pìyéx̂sne**	'rawhide rope'
	b.	**sí̓stex̂s**	**sìstéx̂sne**	'crotch'
	c.	**sí̓tex̂s**	**sìtéx̂sne**	'liver'
	d.	**'óoq'ox̂c**	**'òq'óox̂sna**	'ankle'
(254)	a.	**'í̓spex̂s / 'ispéx̂s**	**'ìspéx̂sne**	'groin'
	b.	**'éx̂sex̂s**	**'éx̂sex̂sne / 'ex̂séx̂sne**	'dentalium'
	c.	**cát'ox̂c**	**cát'ox̂sna / cat'óx̂sna**	'wild hyacinth'

All examples have stem final **x̂s/x̂c**. By constrast, somewhat analogous final clusters such as **sx̂**, **ks**, and **kc** occur in words with epenthesis (e.g., **qilá̓asx̂**, **qìlasáx̂na** 'otter'; **tí̓ks**, **tìkí̓sne** 'hip'; **tí̓kc**, **tikí̓cpe** 'bridge'), but the cluster **x̂s/x̂c** never occurs in words with epenthesis. If **x̂s/x̂c** is the only complex coda that Nez Perce allows, the stress patterns in (253) would follow from that fact. Examples like (255a) would be essentially the same as regular words with alternating penultimate stress treated in (255b) (see §4.2.1.1).

(255)	a.	**pí̓yex̂s**	**pìyéx̂sne**	'rawhide rope'
	b.	**'ásqap**	**'àsqápna**	'man's younger brother'

It may also be noted that examples such as **píyexs** 'rawhide rope' and **sístexs** 'liver' have competely stressless final syllables, as indicated by vowel allophony. Stresslessness is expected if Non-Finality applies to these positions, and Non-Finality outranks WSP_2, the constraint that requires that a CVC syllable have secondary stress.

If **xs/xc** is the only complex coda, then **'c, sx, ks, kc, ps, qs** etc. do not constitute complex codas. Instead, the following words, along with others that undergo epenthesis, all end in a CVC or CVVC syllable followed by a C (i.e., CVC.C or CVVC.C) in their uninflected forms.

(256)	a.	**tùpé'c**	**tùpe'ésne**	'rib'
	b.	**tíks**	**tìkísne**	'hip'
	c.	**tíkc**	**tìkísne**	'bridge'
	d.	**páaps**	**pàpásna**	'red fir'
	e.	**qìláasx**	**qìlasáxna**	'otter'
	f.	**máqs**	**màqásna**	'gall'

It could be claimed that these stem final consonants are syllabified on their own or that they are simply extra-syllabic. It is only essential that they not be part of the preceding syllable. It is because of this that word final CC (except for **xs/xc**) prevents a violation of Non-Finality in the uninflected form in (256a). Likewise, a word medial CC just before a final syllable requires epenthesis by potentially causing an extra violation of Edgemost Right in the inflected form (257b).

(257)	a.	**tùpé'.c**	b.	**tùpe'ésne**	'rib'
(258)	a.	**sísteẋs**	b.	**sìstéẋsne**	'crotch'
(259)	a.	**'ásqap**	b.	**'àsqápna**	'younger brother'

Words that end in the only allowed complex coda **ẋs/ẋc** violate Non-Finality if stress is placed on the stem final vowel in the uninflected form (a). Thus, stress must be retracted by one vowel position, and the words ending in **ẋs** mirror the pattern of words that end in a single consonant (a). By the same token, words ending in the complex coda **ẋs** do not have an extra violation of Edgemost Right in the inflected form (258b), so stress shifts to the right and epenthesis does not occur. This explanation is formalized in the following tableaux:

(260)

/ **sisteẋs** /	Non-Finality	Edgemost Right	Dep-V
☞ a. **sísteẋs**		*	
b. **sistéẋs**	*!		

In the first tableaux, stress cannot be assigned to the vowel in **teẋs** because this string counts as a single syllable, and stress on this position would violate Non-Finality (candidate (b)). In the following tableaux, stress can be assigned to the vowel in **teẋs**, and so candidate (a) is most optimal. Candidate (c) has epenthesis, but this does not improve the derivation, because candidate (c) is tied with (a) with respect to violations of Edgemost Right. Candidate (c) loses because there is no advantage to its undergoing epenthesis.

(261)

/ **sisteɛ̂sne** /	Edgemost Right	Dep-V
☛ a. **sistéɛ̂sne**	*	
b. **sísteɛ̂sne**	**!	
c. **sisteɛ̂ésne**	*	*!

Candidate (b) loses because stress is retracted needlessly far to the left.

Having clarified the evaluative nature of the constraints Non-Finality and Edgemost Right, I return to other cases where epenthesis does not occur. In some cases, there is no alternation of vowel positions because there are underlying vowels in the optimal positions. In other cases, accent prevents stress from being assigned closer to the right, which is the motivation for this kind of epenthesis.

The word **sú'um** / **su'úmne** 'pet' does not have epenthesis becauses there is an underlying vowel in the relevant position. The fact that such a vowel in this position cannot be deleted is enforced by the constraint Max-V. In (262), candidate (b) loses by virtue of its violation of Non-Finality. Candidate (c) loses because it has a needless violation of Max-V. Max-V need not be ranked above Edgemost Right as long as candidates (a) and (c) are evaluated as equal violations of the latter constraint.

(262)

/ **su'um** /	Non-Finality	Max-V	Edgemost Right	Dep-V
☛ a. **sú'um**			*	
b. **su'úm**	*!			
c. **sú'm**		*!	*	

The following tableaux simply demonstrate how stress shifts rightwards as expected in the inflected form of 'pet'.

(263)

/ su'umne /	Non-Finality	Max-V	Edgemost Right	Dep-V
☛ a. **su'úmne**			*	
b. **sú'umne**	*!		**	
c. **sú'mne**		*!	**	

Regarding nouns that end in clusters other than **x̂s** but do not undergo epenthesis, I have claimed that they have accent. That fact that stress cannot be moved without violating the highly ranked constraint CRP means that there is no motivation for epenthesis. This is demonstrated in the following two tableaux for **x̂óyx̂a'.c**, **x̂óyx̂a'.s.na** 'javelin (NOM)/(OBJ)'

(264)

/ x̂óyx̂a'c /	CRP	Non-Finality	Edgemost Right	Dep-V
☛ a. **x̂óyx̂a'.c**			**	
b. **x̂oyx̂á'.c**	*		*	
c. **x̂oyx̂a'ác**	*!	*		*

For the uninflected form of 'javelin' **x̂óyx̂à'c**, epenthesis is not expected. It never occurs in uninflected nouns, and it would only violate Dep-V in the case of candidate (b) or both CRP and Dep-V in the case of candidate (c).

It is in the inflected form of 'javelin (OBJ)' **x̂óyx̂à'sna** that epenthesis might be expected. However, epenthesis comes at the cost of violating Dep-V. This can only be recovered if an output can be formed with epenthesis that satisfies a higher constraint. However, if stress is shifted to take advantage of this epenthetic position, as in candidates (b,c), CRP is violated and the candidate is ruled out.

(265)

x̂óyx̂a'sna	CRP	Edgemost Right	Dep-V
☞ a. x̂óyx̂a'.s.na		***	
b. x̂oyx̂á'.s.na	*!	**	
c. x̂oyx̂a'ásna	*!	*	*
d. x̂óyx̂a'asna		***	*!

If CRP is not violated, as in candidate (d), then the violation of Dep-V provides no benefit, and that candidate is ruled out.

4.4.2. Syncope

Like epenthesis, syncope is linked to stress shift, but unlike epenthesis, syncope is motivated by secondary stress rather than primary stress. In the examples that I will present, a short vowel is syncopated word medially.

4.4.2.1. Syncope - the data

Syncope is clearly linked to regular penltimate stress described in §4.2.1. Words that undergo syncope also undergo stress shift.

(266)	a.	**kìmíle**	**kìmléene**	'tamarrack'
	b.	**kì'íla**	**kì'láana**	'gaff'
	c.	**làmáta**	**làmtáana**	'White Bird, Idaho'

Words with syncope usually have the following underlying form: /CVCVCVV/. When the word is uninflected, stress is assigned to the second vowel of the stem, and the word

final vowel is realized as short: /CVCV́CV/. When a case suffix like **-ne** 'OBJ' is added, stress shifts to the stem final long vowel, and the medial vowel is syncopated: /CVCCV́V-**ne**/. The underlying representations of the examples in (267) are given in (268):

(267)	a.	**kìmíle** **/kimilee/**	**kìmléene** **/kimilee-ne/**	'tamarrack'
	b.	**kì'íla** **/ki'ilaa/**	**kì'láana** **/ki'ilaa-ne/**	'gaff'
	c.	**làmáta** **/lamataa/**	**làmtáana** **/lamataa-ne/**	'White Bird, Idaho'

None of these words have accented syllables. Additional examples are provided in (268).

(268)	a.	**tù'úynu**	**tù'ynúune**	'tail'
	b.	**'ìléx̂ni**	**'ìlx̂níipe**	'many'
	c.	**qè'éyix**	**qè'yíixne**	'elk calf'
	d.	**qìlílu**	**qìllúune**	'rawhide'
	e.	**qò'ópas**	**qò'páasna**	'tripe'
	f.	**tìm'íne**	**tìm'néene**	'heart'
	g.	**tì'íla**	**tì'láana**	'crawfish'
	h.	**x̂ìcíyu**	**x̂ìcyúune**	'star'
	i.	**yè'émes**	**yè'méesne**	'black-tailed doe'
	j.	**'àsáqa**	**'àsqáana**	'Asahka, ID'

Even though stress usually shifts to a position that has an underlying long vowel, I have two examples where stress shifts to a position where the vowel is underlying short:

(269)	a.	**pèqélis**	**pèqlísne**	'paternal grand child'
	b.	**tàtáp'ay**	**tàtp'áyna**	'white-tailed doe'

In only a few special cases, syncope affects a syllable position which is not immediately following the initial syllable:

(270)	a.	**càycayál'as**	**càycàyl'áasna**	'rattle snake rattle'
	b.	**pòxpokál'ac**	**pòxpòkl'áasna**	'screech owl'
	c.	**pòxpok'ála**	**pòxpòk'láana**	'ball'

All three of these special cases involve reduplication. Reduplicative identity requires equal levels of secondary stress to be on the reduplicated syllables (see §4.3.3).

There are a number of conditions which exclude syncope. Syncope does not occur when there is no shift of primary stress. Example (271b) has shift of secondary but not main stress.

(271)	a.	**'àpolámt**	**'àpolámtna**	'bride'
	b.	**qósàlat**	**qósalàtna**	'buck goat'
	c.	**tè'éx̂et**	**tè'éx̂etùne**	'teenage boy'

Syncope does not occur when the initial syllable is already CVC:

(272)	a.	**'ìmnáha**	**'ìmnaháana**	'Imnaha River, Oregon'
	b.	**tà'cáway**	**tà'cawáyna**	'roasting stick'
	c.	**wàx̂p'ál'as**	**wàx̂p'al'áasna**	'Adam's apple'
	d.	**'ìstúk'es**	**'ìstuk'éesne**	'guest'
	e.	**'ìstíp'i**	**'ìstip'íine**	'mother-of-pearl'
	f.	**'àlpáha**	**'àlpaháana**	'Alpowa Creek, WA'

The syncopated position is never one of an underlying long vowel.

(273)	a.	**p'ìn'íises**	**p'ìn'iséesne**	'snout'
	b.	**qèqéey'et**	**qèqey'éene**	'in-law'
	c.	**sèw'íise**	**sèw'iséene**	'Tom Beall Creek, Idaho'
	d.	**sìlúuqs**	**sìluqúsne**	'saliva'
	e.	**tèwlíikt**	**tèwlikítne**	'tree'

	f.	**cèmíitx**	**cèmitéxne**	'huckleberry'
	g.	**kèléemet**	**kèleméetne**	'peace pipe'
	h.	**tìlíipus**	**tìlipúusne**	'bladder'

Syncope never occurs unless stress shifts from the syncopated position to the following position. In the following examples without syncope, stress shifts, but it is not from the position immeidately following the initial syllable.

(274)	a.	**'ìpelíikt**	**'ìpèlikítpe**	'cloud'
	b.	**hìm'iqáalam**	**hìm'ìqaláamna**	'armpit'
	c.	**hìn'awíita**	**hìn'àwitáana**	'Six Mile Creek, ID'

The inflected form of the word finds main stress separated from the initial syllable by two syllables.

One might argue that instead of syncope, the alternation I am describing is another kind of epenthesis. If Edgemost Right did evaluate candidates in terms of segments rather than syllables (contrary to the evidence presented in §4.4.1.2), then epenthesizing a vowel into a word medial cluster would create a stress locus that is closer to the right edge. This explanation doe not make the right prediction, however. There are many examples that illustrate stress shift between a short vowel and a long vowel over an intervening consonant cluster.

(275)	a.	**tátlo**	**tàtlóona**	'ground squirrel'
	b.	**cílmi**	**cìlmíine**	'tree squirrel'
	c.	**písqu**	**pìsqúune**	'leaf, cabbage, tea'
	d.	**píswe**	**pìswéene**	'stone'
(276)	a.	**hímtux̂**	**hìmtúux̂ne**	'whiskers'
	b.	**k'ípcuc**	**k'ìpcúucne**	'claw'

c.	**mácqoy**	**màcqóyna**	'chipmunk'
d.	**páptic**	**pàptíisna**	'muskrat'

If syncope were really epenthesis, we would expect (275a) to be something like ***tatálo** and (276a) to be ***himítux̂**.

4.4.2.2. Analysis of syncope

The observations regarding syncope can be summarized as follows: The syncope alternation requires stress shift: stress alternates between the position that syncopates and the following syllable. Syncope creates a word initial CVC syllable. In the three cases where an initial CVC was not created by syncope (270), the syllable that benefited from syncope was identified with the initial syllable through reduplication. Otherwise, syncope does not occur when a word already has an initial CVC syllable. The syncopated position is never that of an underlying long vowel, and in all but one example the syncopated position is one which has primary stress in the word's uninflected form.

Intuitively, syncope strengthens the (usually) initial syllable at the expense of the following syllable. It also occurs in a position between two strongly stressed syllables: The syllable position following the syncopated vowel always has primary stress, and the syllable position preceding the syncopated vowel has a very high level of secondary stress. Initial syllables that are not in clash with a following main stressed syllable have the highest levels of secondary stress.

It can be instructive to consider examples that have underlying long vowels in the position corresponding to the short syncopating vowel in words with syncope. A long vowel is never syncopated, but Nez Perce still finds a way to strengthen an initial CV syllable with a high level of secondary stress. We see in example sets (277)-(278), that the consonant following the initial vowel is lengthened, while the formerly long vowel reduces to schwa when it is a low vowel (277b). Note the difference in the level of secondary stress on the initial syllable between the (277a) and (277b) examples.

		4 1 Ø		2 Ø 1 Ø	
(277)	a.	**kɛ̀lɛ́əmət**	b.	**kɛ̀lˑəmə́etki**	
		'peace pipe'		'peace pipe (INST)'	
		4 1		2 Ø 1 Ø	
(278)	a.	**cə̀mí̓itx**	b.	**cə̀mˑitə́xnə**	
		'huckleberries'		'huckleberries (OBJ)'	

As the initial and third syllable become stronger syllables, the second syllable becomes a very weak position. : *σ̀əσ́.

I suggest that Nez Perce economizes on the reduced vowel in the weak position to the point of deleting it. Since long vowels are never syncopated, two Max-Vowel constraints will be needed, plus an economy constraint to delete the vowel.

(279) Max (Short Vowel): "All short vowel positions in the input must have a corresponding vowel position in the output."

(280) Max (Long Vowel): "All long vowel positions in the input must have a corresponding vowel position in the output."

(281) *σ̀əσ́ : "A stressless vowel must not occur between a syllable with primary stress and one with high secondary stress"

The ranking must be as follows:

(282) Max (Long Vowel) » *σ̀əσ́ » Max (Short Vowel)

The following tableaux show how this analysis works for the example **lamtáapa** 'White Bird, ID (LOC)' (since the assignment of main stress is not at issue here, I have not provided cells for evaluating Edgemost Right and Non-Finality):

(283)

/ **lamataa-pe** /	Max (Long Vowel)	*σ̀əσ́	Max (Short Vowel)
☛ a. **làmtáapə**			*
b. **làmətáapə**		*!	

The first candidate wins because it does not violate *σ̀əσ́, at the cost of syncopating the short vowel and violating Max (Short Vowel).

The fate of an underlying long vowel is different, as the next tableaux illustrates. To syncopate an underlying long vowel results in a violation of Max (Long Vowel).

(284)

/ **keleemeet-ki** /	Max (Long Vowel)	*σ̀əσ́	Max (Short Vowel)
☛ a. **kèləméetki**		*	
b. **kèlméetki**	*!		

That the uninflected form of 'White Bird, ID' need not undergo syncope is illustrated in the following tableaux. There is no violation of Clash Economy to motivate the deletion of the short vowel.

(285)

/ **lamataa** /	Max (Long Vowel)	*σ̀əσ́	Max (Short Vowel)
☞ a. **làmáta**			
b. **lámta**			*!

A weakness of my analysis is that it does not really capture the dynamic relationship of primary stress shifting away from the vowel position that syncopates except in the fact that the initial vowel goes from a low level of secondary stress to a very high one.

I also note that the stressless vowel in **kèləméetki** 'peace pipe' is not as reduced as a truly stressless vowel in positions such as those at the end of the word.

4.5. Morphology and stress

Until this point, the constraints used to analyze Nez Perce stress have not needed to refer to morphological structure. However, morphology interacts with stress in several important ways. In the first set of cases, I will show that there is a constraint which requires stress to be assigned to the stem of nouns and adjectives rather than to an affix (§4.5.1). This constraint does not hold for verbs. In the second case, there are compound nouns, there is a constraint which requires stress to be assigned to the modifying member of the compound rather than to the head (§4.5.2). In the third set of cases, verb morphology there is a constraint that requires stress to be assigned to the morpheme attached to the lexical head (§4.5.3).

4.5.1. Stress the stem

The constraints used to analyze the penultimate pattern of stress in Nez Perce have not needed to refer to the structure of the word. In this section, I will provide data which show that in nouns stress must be assigned to the stem. This will require a new constraint Stress the Stem:

(286) Stress the Stem: "Primary stress must be assigned to the stem"

This constraint must be ranked above Edgemost Right for nouns but not for verbs:

(287) Stress the Stem » Edgemost Right

It need not be ranked with respect to Non-Finality because the two constraints never come into conflict. I will first provide the stress paradigms and then the analysis.

4.5.1.1. Assignment of main stress to the stem

In §4.2.1, I discussed the penultimate pattern of shifting stress seen in the examples in (288).

(288)	a.	**mácqoy**	**màcqóyna**	'chipmunk (NOM)/(OBJ)'
	b.	**sílu**	**sìlúupe**	'eye (NOM)/(LOC)'
	c.	**wéeptes**	**wèptéesnim**	'eagle (NOM)/(ERG)'

Non-Finality prevents stress from being assigned to the last syllable of the word. Edgemost Right forces stress to be as close to the end as possible. Because Non-Finality outranks Edgemost Right, stress is assigned to the penult – the closest syllable to the right edge that is not final. In the examples given up to this point, I have provided suffixes that are only one syllable in length. If Non-Finality and Edgemost Right are the only relevant constraints, then it is predicted that stress must move from the stem to the suffix when the suffix is longer than two syllables. However, this is not the case.

In addition to the monosyllabic case suffixes described above, there are several bisyllabic and polysyllabic case suffixes and bound post-positions. Some examples are provided in (289).

(289)	a.	**-kin'ix**	'ABL'
	b.	**-kin'ikaay**	'next to'
	c.	**-laykin**	'in the vicinity of'

If Nez Perce stress is governed just by Non-Finality and Edgemost Right, then primary stress should shift to the penultimate syllables of these suffixes when they are affixed to a

noun or adjective (e.g., ***màcqòykín'ix** or ***màcqòyláykin**). Contrary to what is predicted, when nouns are suffixed with these items, stress is not assigned to the case suffix. Instead, it is assigned to the last syllable of the noun.. This is seen in (290):

(290)	a.	**mácqoy**	'chipmunk (NOM)'
	b.	**màcqóyna**	'chipmunk (OBJ)'
	c.	**màcqóykìn'ikàay**	'next to a chipmunk'
	d.	**màcqóylàykin**	'near a chipmunk'
	e.	**màcqóykìn'ix**	'from a chipmunk'

Stress is penultimate in the bare form (290a), and in with the objective case (290b). However, in the example with the longer suffixes, the penultimate stress pattern is lost.

The additional constraint Stress the Stem is needed to account for these data. It is more important to satisfy this constraint than to satisfy Edgemost Right. Therefore, stress can only be assigned as far right as the last syllable of the stem.

A series of examples follows showing how primary stress is penultimate in the bare form and with a monosyllabic case suffix but is pre-penultimate with longer suffixes. These examples show that stress moves to the last syllable of the noun regardless of what kind of underlying vowels the noun has (291)-(293) and regardless of whether the noun is reduplicated or not (294).

(291)	a.	**pískis**	**pìskísne**	'door (nom)/(obj)'
		pìskískin'ix		'from door'
	b.	**pátan**	**patána**	'bushes (nom)/(obj)'
		patánlàykin		'near bushes'

(292)	a.	**sík'em**	**sik'éemne**	'horse (nom)/(obj)'
		sik'áamlàykin		'near a horse'
	b.	**tílel**	**tiléelne**	'cliff (nom)/(obj)'
		tiláalàykin		'near a cliff'
(293)	a.	**méex̂sem**	**mèx̂séemne**	'mountain (nom)/(obj)'
		mèx̂séemkìn'ix		'from mountain'
	b.	**húusus**	**husúusne**	'head (nom)/(obj)'
		husúuskìn'ix		'from the head'
(294)	a.	**tax̂tax̂**	**tàx̂tax̂na**	'woodpecker (NOM)/(OBJ)'
		tàx̂tax̂kìn'ikàay		'next to a woodpecker'
	b.	**k'àyk'áyoc**	**k'àyk'ayóocna**	'raccoon (nom)/(obj)'
		k'àyk'ayóoclàykin		'near a raccoon'
	c.	**wèx̂wéqt**	**wèx̂weqétne**	'frog (NOM)/(OBJ)'
		wèx̂weqétkìn'ikàay		'next to frogs'

By contrast, the principle of Stress the Stem does not have an effect in verbs. Stress may be assigned to a syllable of a tense/agreement suffix that follows the stem.

(295)	a.	**haníisa**	b.	**hànisáaqa**
		hanii-see		**hanii-see-qa**
		make-INC		make-INC-REC
		'I am making something'		'I was making s.t.'
(296)	a.	**càpatíca**	b.	**càpàtcáaqa**
		capat-cee		**capat-cee-qa**
		move.lengthwise-INC		move.lengthwise-INC-REC
		'I move lengthwise'		'I was moving lengthwise'

This implies that Stress the Stem is ranked below Edgemost Right in verbs.

4.5.1.2. Analysis of the stem effect

To account for the fact that stress does not shift past the last suffix of the stem, the additional constraint "Stress the Stem" can be posited. This constraint is violated by an output where stress has been assigned to an affix rather than the stem. For nouns, it must be ranked higher than "Edgemost Right". The consequences for the noun **pìskískìn'ix** 'from the door' are seen in (297). Only primary stress will be indicated for the candidates since this is the crucial aspoect of grammaticality the tableaux determine.

(297) Non-Finality, Stress the Stem » Edgemost Right

/piskis-kin'ix/	Non-Finality	Stress the Stem	Edgemost Right
a. **pískiskin'ix**			**!*
☛ b. **piskískin'ix**			**
c. **piskiskín'ix**		*!	*
d. **piskiskin'íx**	*!	*	

Candidate (d) loses, as expected, because it violates Non-Finality. Candidate (a) loses, because it violates the constraint Edgemost Right more times than the winning candidate (b). The important contrast is between candidates (b) and (c). Candidate (c) loses to (b) only because it violates the higher ranking constraint Stress the Stem. If this constraint were not considered, then candidate (b) would lose to (c) because (b) violates Edgemost Right twice to the single violation of (c).

In contrast to nouns, Stress the Stem for verbs must be ranked lower than Edgemost Right. This is shown for the example **hànisáaqa** 'I was making recently'.

(298) Edgemost Right » Stress the stem

hanii-saaqa	*Final Stress	Edgemost Right	Stress the stem
a. **hánisaqa**		**!*	
b. **haníisaqa**		**!	
☛ c. **hanisáaqa**		*	*
d. **hanisaqá**	*!		*

The tableaux in (298) is analogous to the previous one. However, in this case, it is candidate (c), with penultimate stress that wins. Because Stress the Stem is ranked below than Edgemost Right, the second candidate with two violations of Edgemost Right loses.

Different constraint rankings have already been shown to be necessary to account for function words that have stress that is always on the last syllable (§4.2.2.2). This is an example where reranking maut be drawn along categorial lines.

4.5.2. Compound stress

The position of primary stress in most Nez Perce words is determined by the following constraints in the given ranking:

(299) CRP » Non-Finality » Edgemost Right

To account for compound stress in nouns, it is necessary to add to the set of constraints an additional 0ne:

(300) Stress the modifier: "Place primary stress on the modifier "

The following ranking is required:

(301) Stress the modifier » CRP, Edgemost Right

The ranking expressed in (301) remains unchanged; Stress the modifier and Non-Finality never come into conflict in nouns because Nez Perce compound nouns are head final. In verbs, some derivational modifiers do follow the head, but they are never word final because of the addition of inflectional morphology. Hence, the ranking between Stress the modifier and Non-Finality can remain undefined.

Nez Perce compound nouns fall into two sets: Those that have the ranking in (301) and those that do not. For those that do not, Stress the modifier plays no role at all, and main stress is determined by CRP, Non-Finality, and Edgemost Right. For those that do have Stress the modifier as in (302), the position of stress in the modifying noun is determined by CRP and Edgemost Right. When stress is on the modifier, it cannot be final, so Non-Finality plays no role. The two basic sets with their sub-sets are represented in (302) with the relevant constraint rankings.

(302)

Set I: Stress the modifier » CRP » Edgemost Right

Sub-Type A Modifier is accented - CRP determines
Sub-Type B Modifier is unaccented - Edgemost Right determines

Set II: CRP » Non-Finality » Edgemost Right

Sub-Type A Head is accented - CRP determines
Sub-Type B Head is unaccented - Non-Finality and Edgemost Right determine

It turns out that Set I outnumbers Set II by approximately 2-to-1 (88 Set I examples to 35 Set II examples), and that just two nouns account for the head nouns of half of the members of Set II (16 of the 35 examples). This suggests that Set I is the default for

compound nouns, and that when a noun gets into the exceptional set, it is often by analogy with an established paradigm.

There is also a very small number of compounds in each of the two sets that have characteristics that are unpredicted by the underlying representations of the component nouns and the constraint hierarchies in (302). Most of these examples conform to a separate paradigm that applies to terms for human beings. There is ultimately a certain degree of unpredictability in Nez Perce compound noun formation, and the most fundamental aspect of this unpredictability is not knowing which set a new compound will belong to.

I will begin by presenting the data and the different sets and sub-sets in the first section (§4.5.2.1). I will then provide a formal analysis with tableaux (§4.5.2.2).

4.5.2.1. Patterns of compound stress

To study the nature of compound stress, I developed a corpus of 123 compound nouns from Aoki's *Nez Perce Dictionary* and from my own field work. Nez Perce compounding is head final. The modifying noun precedes and qualifies the head noun (303).

(303) [modifier [head]]

Examples are provided in (304) and (305). The examples in (304) illustrate Set I, the most common metrical pattern. Primary stress falls on the modifier, usually on its last syllable.

(304)	a.	**hìníisetey**	b.	**càwitáxsìis**
		[hinii [setey]]		**[cawiitax [siis]]**
		[chest [hair]]		[carrot [soup]]
		'chest hair'		'carrot soup'
		híni, hìníine		**càwíitx, càwitáxna**
		sétey, setéyne		**síis, síisne**

When giving a compound noun for the first time, I will provide the citation form and the form inflected with object case for each stem, just as in (304).

The examples in (305) illustrate the pattern of Set II, where stress falls on the head noun.

(305)	a.	**sèlìxtiké's**	b.	**lèpwe'ískit**
		[séelix [tike's]]		**[leepwey ['iskit]]**
		[Salish [baby board]]		[Lapwai [trail]]
		'Salish-style baby board'		'Lapwai trail'
		séelix, séelìxne		**léepwey, léepwèyne**
		tìké's, tìke'ésne		**'ískit, 'ìskítne**

As was shown in §4.2., long vowels are realized if they are both underlying and receive main stress.

The factor that determines what the metrical nature of a compound noun will be is whether Stress the modifier is ranked as in (306) or whether it is ranked below Edgemost Right.

(306) Stress the modifier » CRP, Edgemost Right

Once this is known, then the location of main stress can be determined, as well as the realization of underlying long vowels. With Set I compound nouns, primary stress is on

the modifier, but the constraint Stress the modifier does not say where on the modifier primary stress must fall. Where on the modifier primary stress it is assigned is determined by the stress properties of that noun. If the modifier is accented, then stress goes on the accented syllable as required by CRP. If the modifier is unaccented, then Edgemost Right requires that stress goes on the rightmost syllable of the modifier.

The following nouns have accent (307), and when they are the modifiers in a compound noun, main stress is assigned to their accented syllables (Set I: Sub-TypeA).

(307)	a.	**háama**	**háamana**	'man (NOM)/(OBJ)'
	b.	**táyam**	**táyampa**	'summer (NOM)/(LOC)'
	c.	**qáamsit**	**qáamsitki**	'biscuit root (NOM)/(INST)'

Example (308) compounds an irregular form of the word 'summer', but it still has the accentual properties of the free noun (308b).

(308)	a.	**háamamyà'c** **[háama [mya'c]]** man child 'grown son' **háama, háamàna** **mìyá'c, mìya'ásna**	b.	**háamamyà'sna** 'grown son (OBJ)'
(309)	a.	**táya'nìit** **[táya ['nìit]]** summer house 'summer house' **táyam, táyamna** **'ìnìit, 'ìnìitne**	b.	**táya'nìitpa** 'summer house (LOC)'

(310)	a.	**qáamsìtsìis** **[qáamsit [siis]]** biscuit.root stew 'biscuit root stew'	b.	**qáamsìtsìiski** 'biscuit root stew (INST)'
		qáamsit, qáamsitna **síis, síisne**		

In these examples, Stress the modifier is satisfied, so the location of main stress is detemined by CRP, which outranks Edgemost Right.

When the modifier is not accented, CRP plays no role in Set I compounds. Stress the modifier requires stress to be on the modifying noun, but when that is satisfied, then Edgemost Right requires stress to be as close to the right edge as possible. The following nous have regular, penultimate stress, showing that they are not accented (311).

(311)	a.	**k'àssáyno**	**k'àssàynóona**	'elbow (NOM)/(OBJ)'
	b.	**píswe**	**piswéene**	'rock (NOM)/(OBJ)'
	c.	**méeχsem**	**mèχséempe**	'mountain (NOM)/(LOC)'

When stress is assigned to these nouns as modifiers, it is placed as close to the right edge as possible. However, even when the compound is inflected, stress cannot shift to the right because that would violate Stress the modifier.

(312)	a.	**k'àssàynóomyà'c** **[k'assaynoo [mya'c]]** elbow child 'elbow child'[9]	b.	**k'àssàynóomyà'sna** 'elbow child (OBJ)'

[9] 'Elbow child' is a myth character that grew out of Coyote's elbow.

k'àssáyno, k'àssàynóona
mìyá'c, mìya'ásna

(313) a. **pìswé'nìit**
[piswee ['nii̖t]] [10]
rock house
'rock house'

b. **pìswé'nìitpe**
'rock house (LOC)'

pí̖swe, piswéene
'ìni̖it, 'ìni̖itne

(314) a. **mà̖xsáamtàlam**
[meexseem [taalaam]
mountain tip
'mountain top'

b. **mà̖xsáamtalàmpa**
'mountain top (LOC)'

méexsem, mèxséemne
táalam, tàláamna

This kind of compound (Set I: Sub-Type B) is the most common pattern found among all compound nouns.

The second major type of compound noun does not show the effects of Stress the modifier. Either this constraint is ranked so low that it has no appreciable effect, or it does not exist for these words. The head noun receives stress either because it is accented or because the constraints Non-Finality and Edgemost Right force stress to be placed on the penult. The words in (315) are accented, as can be seen by the fact that primary stress does not shift.

---

[10] Long vowels are usually shortened before glottal stop in derivational concatenation.

(315)	a.	**téeqis**	**téeqìsne**	'elder (NOM)/(OBJ)'
	b.	**'ìníit**	**'ìníitne**	'house (NOM)/(OBJ)'

Compounds formed with these words have primary stress on the accented syllable of the head (Set II: Sub-Type A).

(316)	a.	**'ìpsùstéeqis** **['ipsuus [téeqis]]** finger elder 'thumb'	b.	**'ìpsùstéeqìsne** 'thumb (OBJ)'
		'ípsus, 'ìpsúusne **téeqis, téeqìsne**		
(317)	a.[11]	**pìswè'níit** **[piswee ['níit]]** rock house 'rock house'	b.	**pìswè'níitpe** 'rock house (LOC)'

Most of the examples of this kind are formed with accented, bound stem **wéeku's** 'lookalike'. This stem is commonly used to form neologisms.

(318)	a.	**tàhàywáako's** **[tahay [wéeku's]]** crust.snow look.a.like 'sugar'	b.	**tàmsàswáako's** **[taamsaas [wéeku's]]** wild.rose look.a.like 'tomato'
		táhay, tahàyna		**táamsas, tàmsáasna**

[11] This is an alternative pronunciation of ().

c.	**tèhèswéeku's** **[tehes [wéeku's]]** ice look.a.like 'glass'	d.	**tèemìsqùywéeku's** **[teemisquyy [wéeku's]]** tree.sap look.a.like 'molasses'
	téhes, tèhésne		**tèemísquy, tèemisqúuyne**

When Stress the modifier does not play a determining role, and the head noun is unaccented, then the resulting compound noun has shifting penultimate stress. This is the only time that a compound noun has shifting stress. The following nouns have regular shifting stress, as shown by their behavior under suffixation.

(319)	a.	**táalo**	**tàlóona**	'testes (NOM)/(OBJ)'
	b.	**'íit'it**	**'ìt'íitpe**	'end (NOM)/(LOC)'
	c.	**tìké's**	**tìke'éspe**	'baby board (NOM)/(LOC)'

The following compounds have the nouns from (320) as head nouns, and the regular stress pattern of the compound follows from the nature of the head noun.

(320)	a.	**'àlatálo** **['aalaa [taaloo]]** [fire [testes]] 'yellow jacket wasp'	b.	**'àlàtalóona** 'yellow jacket wasp (OBJ)'
		'áala, 'àláana **táalo, tàlóona**		
(321)	a.	**'èx̂we'íit'it** **['ex̂wee ['iit'iit]]** [foot [end]] 'heel'	b.	**'èx̂wè't'íitnim** 'heel (ERG)'
		'éx̂we, 'èx̂wéene **'íitit, 'ìtíitne**		

(322)	a.	**sèlìxtiké's**	c.	**sèlìxtìke'éspe**
		[sé:eix [tike's]]		
		[Salish [baby.board]]		
		'Salish-style baby board'		'Salish-style baby board (LOC)'

When a head noun has shifting stress, it does not follow that the resulting compound will have shifting stress. In example (314) above, both component stems have regular stress, but the compound belongs to Set I, where Stress the modifier determines the stress nature of the derived word. Additional examples are given in (323)-(324), where both components of each compound have regular stress, but the derived compound has stress that can be no closer to the right edge than the last syllable of the modifier.

(323)	a.	**híni**	**hìníipe**	'chest (NOM)/(LOC)'
	b.	**sétey**	**sètéyne**	'hair (NOM)/(OBJ)'
	c.	**hìníisètey**	**hìníisetèype**	'chest hair (NOM)/(LOC)'
(324)	a.	**'ùuyíikem**	**'ùuyikéemne**	'shale (NOM)/(OBJ)'
	b.	**píswe**	**pìswéene**	'rock (NOM)/(OBJ)'
	c.	**'ùuyikéempìswe**	**'ùuyikéempìswèpe**	'shale rock (NOM)/(LOC)'
(325)	a.	**tíks**	**tìkíspe**	'hip (NOM)/(LOC)'
	b.	**núkt**	**nùkútne**	'meat (NOM)/(OBJ)'
	c.	**tìkísnùkt**	**tìkísnùktne**	'haunch (NOM)/(OBJ)'

Acompound can only have shifting stress is main stress is on the head noun and that noun has regular stress in its non-compound form.

The most important aspect of unpredictability in compound nouns is determining which of the two main sets a compound will belong to – Set I, with Stress the Modfier, or Set II without. Over two-thirds of the compounds in the corpus are Set I compounds. In

addition, nearly half of Set II compounds in my corpus are formed with the bound stem **wéeku's** 'lookalike' or **'ískit** 'trail'. This set of facts suggests that Set I is the default, and that nouns tend to enter Set II by analogy with other members of their paradigm. There are no exceptions to the 'lookalike' paradigm; all ten members have primary stress on **wéeku's**. There is only one exception to the **'ískit** paradigm, which consists of seven examples.

Non-Finality has an effect upon Set I nouns in an indirect way. There are no Set II compound nouns that have a head noun that consists of just a single syllable. There are examples like (326),(327) but none like (328).

(326)	a.	**càwíitx**	**càwitáxna**	'wild carrot (NOM)/(OBJ)'
	b.	**síis**	**síisne**	'stew (NOM)/(OBJ)'
	c.	**càwitáxsis**	**càwitáxsisna**	'wild carrot stew (NOM)/(OBJ)'
(327)	a.	**'ìlɛ́x̂ni**	**'ìlx̂níine**	'many (NOM)/(OBJ)'
	b.	**kúus**	**kúuspe**	'water (NOM)/(LOC)'
	c.	**'ìlx̂níikùus**	**'ìlx̂níikùuspe**	'Thousand Springs, ID (NOM)/(OBJ)'
(328)	a.	***cawitxsíis**		
	b.	***'ilx̂nikúus**		

Non-Finality seems to play a role in keping compounds from being lexicalized as belonging to Set II, but once that is done, Non-Finality is no longer relevant. When a noun belongs to Set I, it does not shift stress. Perhaps Optimality plays a more important role in lexicalization than it does in production.

4.5.2.2. Analysis of compound stress

The two basic kinds of compounds with each sub-type are represented below, along with representative examples. I have provided the examples in both inflected and uninflected forms to show that stress shift occurs only in the fourth sub-type.

Set I: Stress the modifier » CRP » Edgemost Right

Sub-Type A Modifier is accented - CRP determines

(329) a. **háamatnon**
[háama [tnúun]]
man divorcee
'divorced man'

háama, háamàna
tìnúun, tìnúunna

b. **háamatnonpa**
'divorced man (LOC)'

Sub-Type B Modifier is unaccented - Edgemost Right determines

(330) a. **hày'óoxchàcwal**
[héey'uuxc [háacwal]
cottontail boy
'cottontail boy'

héey'ux̂c, hey'úux̂sna
háacwal, háacwàla

b. **hày'óoxchàcwàlpa**
'cottontail boy (LOC)'

Set II: CRP » Non-Finality » Edgemost Right

Sub-Type A Head is accented - CRP determines

(331) a. **'ìpsùstéeqis**
['ipsuus [téeqis]]
finger elder
'thumb'

b. **'ìpsùstéeqìspe**
'thumb (LOC)'

Sub-Type B Head is unaccented - Non-Finality and Edgemost Right determine

(332) a. **sèlìxtiké's**
[**se:lix** [**tike's**]]
Salish baby.board
'Salish-style baby board'

b. **sèlìxtìke'éspe**
'Salish-style baby board (LOC)'

In this last example, the accent on the modifier **séelix** 'Salish' has been erased. I will show why this is necessary below.

I will now demonstrate the effects of the constaints on stress assignment with tableaux. Only primary stress is represented in the tableaux. Differences in vowel length between the underlying representations and the candidates follow from the discussion of vowel shortening in §4.2.1.2. Changes consisten with vowel harmony are also made.

The first kind of compound shows the effects of the constraint Stress the modifier, outranking the other constraints. Stress the modifier is satisfied regardless of where stress is placed on the modifier, so other, lower ranking constraints determine the location of stress on the modifier. In the following tableaux, the winning candidate for **háamatnon** 'divorced man' is (333a). Candidate (b) loses because even though it satisfies Stress the modifier, it violates CRP twice. Candidate (a) violates CRP once, just as candidate (c) does.

(333)

[**háama** [**tnúun**]]	Stress the modifier	CRP	Non-Finality	Edgemost Right
☛ a. **háamatnon**		*		**
b. **hamátnon**		**!		*
c. **hamatnóon**	*!	*	*	

The fact that it is Stress the modifier and not non-Finality that determines the winner can be seen by comparing the next tableaux. Even when a suffix makes the syllable **nuun** to be penultimate, stress is located on the accented syllable of the modifier.

(334)

[**háama** [**tnúun**]]**pe**	Stress the modifier	CRP	Non-Finality	Edgemost Right
☞ a. **háamatnonpa**		*		***
b. **hamátnonpa**		**!		**
c. **hamatnóonpa**	*!	*		*

Both the modifier and the head are accented, but Stress the modifier outranks Edgemost Right, so primary stress must be located on the modifier. CRP determines that main stress goes to the modifier's accented syllable.

In the next example, the modifier lacks accent. The compound **hày'óoxchàcwal** 'cottontail boy' is the name of a character from the traditional mythology (see Aoki 1979, Aoki and Walker 1989). The modifier has regular shifting stress (335), while the head is accented:

(335) a. **héey'uxc** b. **hèy'úuxsne** 'cottontail (NOM)/(OBJ)'[12]

(336) a. **háacwal** b. **háacwàlpa** 'boy (NOM)/(LOC)'

Candidate (a) wins because Stress the modifier is satisfied and because it has fewer violations of Edgemost Right than does candidate (b).

---

[12] The coda **xs/xc** is the only complex coda allowed in Nez Perce, and thus stressing the first syllable of this word constitutes only a single violation of Edgemost Right. For more on complex codas and epenthesis see discussion in §5.4.1.

(337)

[heey'uuxc [háacwal]	Stress the modifier	CRP	Non-Finality	Edgemost Right
☞ a. **hay'óoxchacwal**		*		**
b. **háy'oxchacwal**				***!
c. **hay'oxcháacwal**	*!			*
d. **hay'oxchacwál**	*!	*	*	

Candidates (c) and (d) both lose by virtue of violations of Stress the modifier. Even though candidate (c) satisfies CRP, it is ruled out by its violation of Stress the modifier.

The same effects without violation of CRP can be seen in the following tableaux, where both components are unaccented.

(338) a. **méex̂sem** b. **mèx̂séempe** 'mountain (NOM)/(LOC)'

(339) a. **táalam** b. **tàláampa** 'tip (NOM)/(LOC)'

In the compound **màx̂sáamtàlam** 'mountain top', CRP is not an issue.

(340)

[meex̂seem [taalaam]	Stress the modifier	CRP	Non-Finality	Edgemost Right
☞ a. **max̂sáamtalam**				**
b. **máax̂samtalam**				***!
c. **max̂samtáalam**	*!			*
d. **max̂samtaláam**	*!		*	

Stress the modifier causes primary stress to be assigned to the modifier, and Edgemost Right chooses the rightmost candidate among the modifier's syllables.

As the tableaux in (337), (340) show, in order to get the correct result, it is not necessary to erase accent from the head when Stress the modifier is ranked above the

other constraints. I will show in the discussion below that when Stress the modifier is not a factor that it is necessary to erase accent from the modifier to get the right results in some cases.

In the second kind of compound, Stress the modifier does not influence the assignment of stress. To make this concrete, I give the following ranking that can be posited for these compounds:

(341) CRP, Non-Finality, Edgemost Right » Stress the Head

In the first example **'ìpsùstéeq'is** 'thumb', the head is accented. CRP, the highest ranked constraint, determines that the correct candidate is (a).

(342)

['ipsuus [téeqis]]	CRP	Non-Finality	Edgemost Right	Stress the modifier
☛ a. 'ipsustéeqis			*	*
b. 'ipsusteqís	*!	*		*
c. 'ipsúusteqis	*!		**	

Candidate (c) loses because Stress the modifier is ranked below the CRP for this class of compound. The fact that candidate (b) loses is not due to the Non-Finality violation but rather to the violation of CRP. This is made plain in the following tableaux where the winning candidate has primary stress on the antepenult.

(343)

['ipsuus [téeqis]] pe	CRP	Non-Finality	Edgemost Right	Stress the modifier
☛ a. 'ipsustéeqispe			**	*
b. 'ipsusteqíspe	*!		*	*
c. 'ipsúusteqispe	*!		***	

The accented syllable on the head of the compound has to receive primary stress.

The next example is the only sub-type of compound that has regular shifting stress. This follows from the nature of the head noun, which itself has regular stress.

(344) a. **tìké's** b. **tìke'éspe** 'baby board (NOM)/(LOC)'

Because this word undergoes epenthesis when it shifts stress, the constraint Dep-V has been included in the tableaux for clarity. In the following tableaux, candidate (d) satisfies Stress the modifier, but the candidate loses because for this word that constraint is outranked by Edgemost Right. Non-Finality still outranks Edgemost Right, so candidate (b) loses; there is no overall cost savings to epenthesis if it means a candidate violates Non-Finality.

(345)

[se:lix [tike's]]	CRP	Non-Finality	Edgemost Right	Dep-V	Stress the modifier
☛ a. **selixtiké's**			*		*
b. **selixtike'és**		*!		*	*
c. **selixtíke's**			**!		*
d. **selíxtike's**			***		

Candidate (c) has stress retracted too far, because the word final s prevents a violation of Non-Finality when stress is assiged to the last vowel (see discussion of fnal clusters and epenthesis in §4.4.1). Thus, candidate (a) wins by having the fewest violations of Edgemost Right without violating Non-Finality.

When 'Salish-style baby board' is suffixed, stress shifts rightwards so that the minimum violations of Edgemost Right can be maintained. Candiate (a) is the winner by this measure, even though it bears the cost of epenthesizing a vowel.

(346)

[se:lix [tike's]] pe	CRP	Non-Finality	Edgemost Right	Dep-V	Stress the modifier
☞ a. **selixtike'éspe**			*	*	*
b. **selixtiké'spe**			**!		*
c. **selixtíke'spe**			**!*		*
d. **selíxtike'spe**			**!**		

Again, the last candidate satisfies Stress the modifier, but that is not a crucial factor given the reranking of constraints required for this type of compound.

It should be noted that the modifier **séelix** 'Salish' is accented.

(347) a. **séelix** b. **séelìxne** 'Salish (NOM)/(OBJ)'

This accent must be erased, or otherwise it would force stress to be assigned to the wrong position given the rankings proposed above.

(348) (Incorrect output)

[sé:lix [tike's]]	CRP	Non-Finality	Edgemost Right	Stress the modifier
☞ a. **séelixtike's**			****	
b. **selixtiké's**	*!		*	*

CRP outranks Edgemost Right, and so if the accent were not erased, we would expect the word to be ***séelixtike's**. It might be proposed that just for examples like these that CRP is ranked below Edgemost Right. However, this would be the only set of words where

The text for this page is missing.

(352)	a.	**tè'éx̂et** 'teenage boy'	b.	**tè'éx̂etùne** **te'éx̂etuu-ne** 'teenage boy (OBJ)'
	c.	**tà'àx̂atóomyà'c** **[te'ex̂etoo [mya'c]]** 'teenage son'		
(353)	a.	**pit'ǐin'** 'girl'	b.	**pìt'ǐinìne** **pit'ǐinii-ne** 'girl (OBJ)'
	c.	**pìt'inǐimyà'c** **[pit'iinii [mya'c]]** 'young daughter'		
(354)	a.	**tìm'áay'** 'teenage girl'	b.	**tìm'áayìna** **tim'áayii-ne** teenage girl (OBJ)'
	c.	**tìm'ayǐimyà'c** **[tim'aayii [mya'c]]** 'teenage daughter'		
(355)	a.	**'áayat** 'woman'	b.	**'áayatòna** **'áayatoo-ne** 'woman (OBJ)'
	c.	**'àyatóomyà'c** **['aayatoo [mya'c]]** 'grown daughter'		

The inflected form of each kinship term has an irregular form that includes a stem final long vowel that is realized as short when it does not have primary stress (i.e., when the word is inflected with a case suffix).

When a compound is formed with the head noun **miyá'c /mya'c/** 'child', the grammar uses the inflected form of the word, but in doing so the accent is erased. Erasure of accent allows stress to be assigned closer to the right edge but still on the modifier.

(356)	a.	**hàcwaláamyà'c**	'young son'
	b.	**tà'àx̂atóomyà'c**	'teenage son'
	c.	**pìt'inîimyà'c**	'young daughter'
	d.	**tìm'ayîimyà'c**	'teenage daughter'
	e.	**'àyatóomyà'c**	'grown daughter'

Accent is erased only in creating the compound noun. If accent were erased in the inflected form, we would expect examples like ***te'ex̂etúune** and ***'áyatóona**. There is a single exception to the paradigmatic pattern of accent erasure:

(357)	a.	**háama** 'man'	b. **háamana** **háama-ne** 'man (OBJ)'
	c.	**háamamyà'c** **[háama [mya'c]]** 'grown son'	

In this one case, accent is not erased, and CRP requires main stress to be assigned to the accented syllable.

The following tableaux contrast the underlying representations of **'àyatóomyà'c** 'grown daughter' and **háamamyà'c** 'grown son'. In the first case, accent has been erased and is not found in the underlying representation. These are Set I compounds, so

Stress the modifier rules out the output with main stress on the penult (Candiate (c)). Candidate (a) wins because it has stress closer to the right edge and thus only two violations of Edgemost Right.

(358)

['aayatoo [mya'c]]	Stress the modifier	CRP	Non-Finality	Edgemost Right
☛ a. **'ayatóomya'c**				**
b. **'áayatomya'c**				***!
c. **'ayatomyá'c**	*!			

In the case of 'grown son', accent is not erased. CRP is violated in candidate (b) and rules it out because it is more important to satisfy CRP than Edgemost Right.

(359)

[**háama** [mya'c]]	Stress the modifier	CRP	Non-Finality	Edgemost Right
☛ a. **háamamya'c**				***
b. **hamámya'c**		*!		**
c. **hamamyá'c**	*!			

Candidate (c) loses because it violates Stress the modifier.

This special subset of compounds shows that it is necessary to have a means of erasing accent. It also shows that erasure takes place in response to lexicalization of a form by analogy with an existing paradigm.

It is not correct to say that in general compounds include the bound forms of nouns. A Nez Perce compound takes the underlying representation of a noun and the constraint system determines what form of that component is optimal. The result can be a component that corresponds with the uninflected form, the inflected form, or neither of

these. In the word, **mà̓xsáamtàlam** 'mountain top', the component **ma̓xsáam** corresponds to the inflected form of the word, and **talam** corresponds to neither:

(360)	a.	**méex̓sem**	b.	**mèx̓séempe**	'mountain (NOM)/(LOC)'
(361)	a.	**táalam**	b.	**talá̓ampa**	'tip (NOM)/(LOC)'

It follows from the analysis of long vowel reduction given in §4.2., that both underlying long vowels in 'tip' must be realized as short in 'mountain top', because primary stress is not assigned to this component. In the compound **selixtiké's** 'Salish-style baby board', the component **selix** does not correspond to either the inflected or uninflected forms of 'Salish', while the form of the second component corresponds to either the inflected or uninflected form depending on whether the compound is inflected or not.

(362)	a.	**séelix** 'Salish'	b.	**séelìxne** 'Salish (OBJ)'
(363)	a.	**tìké's** 'baby board'	b.	**tìke'éspe** 'baby board (OBJ)'
(364)	a.	**selixtiké's** 'Salish-style baby board'	b.	**selixtike'éspe** 'Salish-style baby board (OBJ)'

Usually, there is a single underlying representation for a noun, and the constraints determine which output from this representation is optimal. However, in the case of all but one of the terms compounded with **mìyá'c** 'child', there do exist separate inflected and uninflected forms of the noun. The existence of multiple underlying forms is most

typical of terms for humans. The exception is **háama** 'man', which has only one underlying representation and retains its accent under compounding.

There is one further case of an unpredictable underlying form. The phonological form of compounds can even be affected by sociolinguistic factors. Based on the surface forms of the two components, the compound **'àlatálo** 'yellow jacket wasp' has four underlying long vowels

(365)	a.	**'áala**	b.	**'àláapa**
		'aalaa		**'aalaa-pe**
		'fire'		'fire (LOC)'
(366)	a.	**táalo**	b.	**tàlóona**
		taaloo		**taaloo-ne**
		'testes'		'testes (OBJ)'

However, no long vowels are found in the isolation form of the compound, particularly not on the syllable with main stress (367a). One long vowel surfaces under affixation at the end of the stem (367b).

(367)	a.	**'alatálo**	b.	**'alatalóona**
		['ala [talo:]]		**'alatalo:-ne**
		[fire [testes]]		yellow.jacket-OBJ
		'yellow jacket wasp'		'yellow jacket (OBJ)'

This requires loss of vowel length from at least the second vowel in the component **'áala**, **'aláapa** 'fire'. It was explained to me by a male elder when I had mispronounced this compound that one did not say ***'àlatáalo**, the form I expected. Even though people would know what I meant, it would cause the older ladies to giggle.

4.5.3. Morphology and stress in verbs

Because of the complexity of their morphology, Nez Perce verbs constitute the domain of greatest challenge for an analysis of stress and morphology. In this section, I will address the data at three levels of complexity. I will begin with the most straightforward cases in which Non-Finality, Edgemost Right, and CRP are able to account for the forms (§4.5.3.1). In these cases, there are either zero, one, or two accented syllables. When there are no accented syllables, just Non-Finality and Edgemost Right decide the optimal form. When there is one accented syllable, the highest ranked constraint CRP decides. When there are two accented syllables, either one can be assigned primary stress and CRP will be violated, so a lower constraint decides.

The second set of data include accented prefixes and suffixes will be introduced, creating the potential for a verb stem to have several underlying accented syllables (§4.3.3.2). To account for accented prefixes which move stress away from the right edge of the word, I will employ the constraint *Stressed Lexical Head, to prevent assignment of stress to . I will argue for a special constraint ranking that places *Stressed Lexical Head above the other constraints when there are accented prefixes and suffixes. I will argue against stipulating that accented prefixes deaccentuate other accents.

In the last section (§4.3.3.3), I will provide two sets of data that require that some internal morphological structure be visible to the grammar. The first set of cases involves verbs that have both accented prefixes and accented suffixes. The accented suffixes receive main stress by virtue of Edgemost Right, since they tie with the prefixes on the

other constraints. However, the grammar has to be able to see the suffixes in order for them to tie with the prefixes with respect to other the constrains other than Edgemost Right. The second set of special cases involves verbs that do not allow stress shift. I call them hyper-accented verb stems, and their evaluation will also require the existence of internal morphological structure.

4.5.3.1. Basic principles: Edge effects and accent

The constraints that underlie the basic patterns in verbs are the same ones that determine stress in other categories – Non-Finality, Edgemost Right, and CRP. Unaccented verbs have the regular, shifting penultimate stress pattern. When a suffix with accent is affixed to an unaccented verb stem, primary stress is assigned to the accented syllable, even when that syllable is word final. Verbs with accented stems do not allow stress shift; stress stays fixed on the accented syllable of the stem.

Nez Perce nearly is the mirror image of a language like Sanskrit, which is described by Kiparsky and Halle's (1977) Basic Accentuation Principle. In Sanskrit, Edgemost Left outranks Edgemost Right, and when there are no accented syllables, main stress is assigned to the initial syllable. When there are accented syllables, the leftmost one wins. In Nez Perce, it is the rightmost non-final accent that receives primary stress when there is more than one accented syllable. If there is only one accented syllable, then that one wins, even if it is word final.

4.5.3.1.1. Regular stress and accent in Nez Perce verbs

In §4.2.1., I showed that the regular penultimate stress pattern holds for verbs, as well as for other categories in Nez Perce. However, verbs lack the effects of the constraint Stress the Stem in seen in nouns and adjectives (see §4.5.1). This is an another example of the re-ranking of constraints that is required to account for the Nez Perce data. In verbs with regular stress, primary stress is assigned to the penult, whether that syllable is on the stem (368a) or a suffix (368b-d), depending on the aspect. Verbs with regular stress undergo epenthesis in the incompletive neutral aspect (368b) (§4.4.1). [13]

(368)	a.	**hípe** **hip-e** eat-PTV 'I ate'	b.	**hìpíse** **hip-see** eat-INC 'I am eating'
	c.	**hipsáaqa** **hip-saaqa** eat-REC 'I recently ate'	d.	**hiptéetu** **hip-teetu** eat-HAB 'I typically eat'

These patterns are the same, whether the verb is an S-stem or C-stem (for more on stem classes, see Chapter 2.3.4.1.1).

(369)	a.	**héxne** **hek-ne** see-PTV 'I saw'	b.	**hekíce** **hek-cee** see-INC 'I see'

---

[13] The incompletive neutral of both S-stem and C-stem verbs epenthesizes **i** immediately following the stem: **hip-í-se, hek-í-ce**. This particular cae of epenthesis only happens with this aspect marker. Note that there is no motivation for epenthesis in the incompletive plural,because stress is attracted to the suffix and therefore cannot be penultimate.

c.	**hakcáaqa**	d.	**hektéetu**
	hek-caaqa		**hek-teetu**
	see-REC		see-HAB
	'I recently saw'		'I typically see'

In these examples, as in others previously presented, Edgemost Right causes stress to be assigned as close to the right edge as possible, and Non-Finality prevents primary stress from being assigned to the ultima.

The constraint CRP outranks Non-Finality. When a suffix ends in an accented syllable, primary stress is assigned to the ultima if the verb stem is unaccented. The irrealis **-ú'/-nú'** and the incompletive plural **-síix/-číix**, are both accented, so they receive primary stress in the following examples, where they are combined with unaccented stems.

(370)	a.	**hipú'**	b.	**hìpsíix**
		hip-ú'		**hip-síix**
		eat-IRR		eat-INC.PL
		'I will eat'		'we are eating'
(371)	a.	**hèxnú**	b.	**hèkcíix**
		hek-nú'		**hek-číix**
		see-IRR		see-INC.PL
		'I will see'		'we see'

Many verb stems are accented. For these verbs, stress does not shift following the normal pattern of penultimate stress.

(372)	a.	**kíwyèkse**	b.	**kíwyàksàqa**
		kíwyek-see		**kíwyek-saaqa**
		feed-INC		feed-REC
		'I am feeding (something)'		'I recently fed'

(373)	a.	**híitèmyèkse** **híitemyek-see** sweat-INC 'I am sweating'	b.	**híitàmyàksàqa** **híitemyek-saaqa** sweat-REC 'I recently sweated'
(374)	a.	**k'ìlílce** **k'líl-cee** be.unable.pass-INC 'I am unable to pass'	b.	**k'ìlílcàqa** **k'líl-caaqa** be.unable.pass- REC 'I was unable to pass'
(375)	a.	**k'óomàyca** **k'óomay-cee** be.sick-SG.PROG 'I am sick'	b.	**k'óomàycàqa** **k'óomay-caaqa** be.sick-back-SG.PROG 'I was sick'

If these verbs had regular stress, the expected results would be as follows:

(376)	a.	***kiwyékse**	b.	***kiwyaksáaqa**
(377)	a.	***hitemyékse**	b.	***hitamyaksáaqa**
(378)	a.	**k'ilílce** (correct output)	b.	***k'ililcáaqa**
(379)	a.	***k'omáyca**	b.	***k'omaycáaqa**

When these accented verb stems are affixed with an accented suffix such as the irrealis **-ú'/-nú'** or the incompletive plural **-síix/-cíix** , a choice must be made as to which accented syllable will receive main stress. Since assigning main stress to the ultima violates Non-Finality and this constraint outranks Edgemost Right, it is the accented syllable which is not word final that receives main stress.

(380)	a.	**kíwyekù'** **kíwyek-ú'** feed-INC 'I will feed (something)'	b.	**kíwyèksìx** **kíwyek-síix** feed-REC 'we are feeding'

(381)	a.	**híitèmyèkù'** **híitemyek-ú'** sweat-IRR 'I will sweat'	b.	**híitàmyàksìx** **híitemyek-síix** sweat-INC.PL 'we are sweating'
(382)	a.	**k'ìlílnù'** **k'líl-nú'** be.unable.pass-IRR 'I will be unable to pass'	b.	**k'ìlílcìx** **k'líl-cíix** be.unable.pass- INC.PL 'we are unable to pass'
(383)	a.	**k'óomàynò'** **k'óomay-nú'** be.sick-IRR 'I will be sick'	b.	**k'óomàycìx** **k'óomay-cíix** be.sick-back-INC.PL 'we are sick'

These claims can be made explicit with tableaux. In the first case, **héxne** 'I saw', penultimate stress is derived by avoiding a violation of Non-Finality in the first candidate.

(384)

hek-ne	Non-Finality	Edgemost Right
☞ **héxne**		*
hexné	*!	

The second candidate is less optimal, even though it satisfies Edgemost Right. When a longer suffix is added, stress shifts to the right: **hàkcáaqa** 'I recently saw'. The first candidate in (385) has stress as close to the right edge as it can be without violating Non-Finality. Neither this example not the previous one has an accented syllable, so violating CRP is not an issue.

(385)

hek-caaqa	Non-Finality	Edgemost Right
☛ hakcáaqa		*
hákcaqa		**!
hakcaqá	*!	

This example shows that the constraint Stress the Stem is not ranked above Edgemost Right for verbs.

With an accented verb like **kíwyek** 'feed', stress cannot shift without violating CRP. Primary stress can be assigned quite far from the right edge, as in the verb **kíwyàksàqa** 'I recently fed' with pre-antepenultimate stress. Any candidate that does not satisfy CRP loses:

(386)

kíwyek-saaqa	CRP	Non-Finality	Edgemost Right
☛ kíwyaksaqa			***
kiwyaksáaqa	*!		*
kiwyáksaqa	*!		**

When an accented suffix is affixed to an unaccented verb, main stress goes to the accented syllable, even if it is the ultima. To do other wise would result in a violation of CRP. Hence, we have the form **hèkcíix** 'we see' (387).

(387)

hek-cíix	CRP	Non-Finality	Edgemost Right
☛ hekcíix		*	
hékcix	*!		*

Even though the first candidate in (387) violates Non-Finality, it wins, because it does not violate CRP while the second candidate does.

If there is more than one accented syllable in the verb, then there will be one or more violations of CRP, no matter which accented syllable is chosen. Candidates that tie with respect to this highly ranked constraint must then be differentiated by a lower ranked constraint. Thus Non-Finality determines that the winner is **kíwyèksìx** 'we are feeding' rather than ***kiwyeksíix**.

(388)

kíwyek-síix	CRP	Non-Finality	Edgemost Right
☞ **kíwyeksix**	*		**
kiwyeksíix	*	*!	

An accented ultima only wins when it is the only accented syllable in the word.

4.5.3.1.2. Sanskrit and Salish

Sanskrit and Moses-Columbian Salish have very similar stress systems to that of Nez Perce. The main difference is that these languages have Edgemost Left ranked highly, and Edgemost Right is ranked low. Stress goes as close to the beginning of the word as possible. Kiparsky and Halle captured the behavior of such languages in the form of their Basic Accentuation Principle for Indo-European Accent (formulated for Sanskrit):

(389) **Basic Accentuation Principle** – If a word has more than one accentuated vowel, the first of these gets the word accent. If a word has no accented vowel, the first vowel gets the word accent (Kiparsky and Halle, 1977) (p. 209).

The following Sanskrit examples show this effect (examples are from Kiparsky and Halle 1977):

(390)	a.	**áśv-á-vant-ī-nā́m** →	**áśvavantīnām**	'having horses'
		horse-n.decl.-poss-fem-		
	b.	**pad-vant-ī-nā́m** →	**padvantīnā́m**	'having feet'
		foot-poss-fem-		
	c.	**pumāṃs-am** →	**púmāṃsam**	'man'
		man-accusative singular		

In (390a), 'having horses' has three accented syllables, and the leftmost receives the word accent. We don't know, of course, what the exact nature of Sanskrit stress-accent was. Kiparsky and Halle believe it was pitch-accent. However, the result of the Sanskrit accentual system was that one syllable in the word was most prominent. In (390b), there is only one accented syllable, and although it is syllable farthest from the left edge, it is most prominent. In (390c), there is no accented syllable, so the first syllable in the word, the one closest to the left edge is most prominent.

Czaykowska-Higgins (1991) describes the same effects for Moses-Columbian Salish. Main stress is assigned to the leftmost accented syllable, and otherwise to the first syllable. The examples in (391) parallel the Sanskrit examples in (390).

(391)	a.	**k'ɬ-ʔáy-xí̓t-n** →	**k'ɬʔáyxtn**	'I returned it'
		-return-redirec-1stsg		
	b.	**haw'y-xí̓t-n** →	**haw'ixí̓tn**	'I made it'
		make-redirec-1stsg		

c. **k'əm-lqst-xn** → **k'ə́məlqstxən** 'lower leg'
surface-shin-leg

Sanskrit and Salish are actually somewhat simpler than Nez Perce. For these languages, there are only two relevant constraints – CRP and Edgemost Left. There is no effect of a constraint that mitigates against initial stress: a "Non-Initial" as the counterpart to Non-Finality. The ranking of the two important constraints is given in (392).

(392) CRP » Edgemost Left

In the first example, the Sanskrit (b) 'having feet', the only accented syllable becomes most prominent because failure to make it the primary syllable would violate CRP.

(393)

/ pad-vant-ī-nā́m /	CRP	Edgemost Left
☞ padvantīnā́m		***
pā́dvantīnām	*!	

In the next example, 'having horses' (a), there are three accented syllables to choose from. Whichever choice is made, there will be two violations of CRP. In such cases, the constraint Edgemost Left determines the winner.

(394)

UR: áśv-á-vant-ī-nā́m	CRP	Edgemost Left
☞ áśvavantīnām	**	
aśvávantīnām	**	*!
aśvavantīnā́m	**	*!***

In the last example, 'man (accusative singular)' (390c), there is no accented syllable, so the determination is made purely in terms of directionality:

(395)

UR: **pumāṃs-am**	CRP	Edgemost Left
☛ **púmāṃsam**		
pumā́ṃsam		*!

One Salish example will be sufficient to illustrate that the identical analysis applies in this language.

(396)

UR: **k'ɬ-/áy-xít-n**	CRP	Edgemost Left
☛ **k'ɬ/áyxtn**	*	
k'ɬ/ayxítn	*	*!

The Sanskrit and Salish examples can be contrasted with the analysis of Nez Perce **kíwyeksix** 'we are feeding' (397) repeated here.

(397)

kíwyek-síix	CRP	Non-Finality	Edgemost Right
☛ **kíwyeksix**	*		**
kiwyeksíix	*	*!	

In this case, it is Non-Finality that determines which candidate with which accented syllable is optimal.

In Sanskrit and Salish, the winning accent is chosen purely in terms of directionality – the one closest to the left edge. I have shown that in Nez Perce the determining edge constraint is the mirror of that in Sanskrit and Salish (i.e., Edgemost

right versus Edgemost Left). I have also shown that Non-Finality is an important factor in Nez Perce.

4.5.3.2. *Stressed Lexical Head and CRP

An additional difference between Nez Perce and Sanskrit and Salish is that in a certain set of cases the constraint *Stressed Lexical Head plays a determining role in Nez Perce.

I have discussed the constraint Stress the Modifier for compound nouns. The constraint is illustrated it in terms of the data in §4.5.2. Four compound nouns are repeated here, all of which show the effects of *Stressed Lexical Head.

(398)	a.	**háamamya'c**	b.	**táya'niit**
		[háama [mya'c]		**[táya ['níit]]**
		man child		summer house
		'grown son'		'summer house'
(399)	a.	**màx̂sáamtàlam**	b.	**hày'óoxchàcwal**
		[meex̂seem [taalaam]]		**[heey'uuxc [háacwal]]**
		mountain tip		cottontail boy
		'mountain top'		'cottontail boy'

The examples in (398) have accented modifiers, and the examples in (399) have unaccented modifiers. The (a) examples in both sets have unaccented head nouns. The (b) examples in both sets have accented head nouns. Because Stress the Modifier is highly ranked for these four compounds, all of them have primary stress on the modifier, regardless of the accentual nature of either the head or the modifier. Other constraints can only determine where main stress will be located on the modifier. In compound nouns,

*Stressed Lexical Head causes primary stress to be assigned in such a way that it moves away from the right edge.

The problem with using the constraint Stress the Modifier in the verb data, is it is not alwas clear what item is the modifier and what is not. It can be argued that affixes, rather than modifiers are the syntactic heads of the morphological constructions. I will therefore use a more neutral term and define the following constraint:

(400) *Stressed Lexical Head: "Main stress must not be assigned to the lexical head"

*Stressed Lexical Head plays an important role in determining the location of primary stress with accented prefixes in verb morphology. This constraint is not needed to get the correct result with suffixes. It must apply in the case of derivational suffixes that are accented.

In Chapter 2.3.4.3, I described derivational prefixes and suffixes and the ways that they expand the Nez Perce lexicon of verbs. The following scheme is reproduced from that section, illustrating the positions of derivational prefixes, the verb root, and derivational suffixes:

(401) *Inflec*...–[Caus. [[**Derivational Prefix [Root] Derivational suffix**]] ONLY] – ...*Inflec.*

There are over 100 derivational prefixes and about 20 derivational suffixes. In concatenation with a derivational prefix, a verb's stem sometimes changes its stem class; although S-stems always remain S-stems, some C-stems become S-stems. This is seen in the following examples, repeated here from Chapter 2.3.4.2.2. For both (402) and (403), the verb root is a C-stem, but under affixation with derivational prefixes, the verb becomes an S-stem.

(402)	a.	**tìn'kíce**	b.	**'ilíwtìn'kse**	c.	**tèextín'kse**
		tin'uk-cee		**'ilíw-tin'uk-cee**		**teex-tin'uk-see**
		die-INC		fire-die-INC		cold-die-INC
		'I am dying'		'I am starving'		'I am freezing'
(403)	a.	**talqíca**	b.	**mìstálqsa**	c.	**silímtàlqsa**
		talq-cee		**ms-talq-see**		**silím-talq-see**
		stop-INC		hear-stop-INC		with.eyes-stop-INC
		'I stop'		'I listen'		'I stare'

Some prefixes like **'ilíw-** 'fire' and **sílim-** 'with eyes' (403b) are accented, and some like **teex-** 'cold' and **ms-** 'hear'(403b) are unaccented.

The derivational suffixes provide meanings that often have a basis in some directional sense, although sometimes in only a very abstract way. Several of these suffixes change argument structure, and they always determine the stem type of the newly derived verb.

(404)	a.	**k'óomayca**	b.	**k'óomàytòqsa**
		k'óomay-cee		**k'óomay-toq-see**
		be.sick-INC		be.sick-back-INC
		'I am sick'		'I get sick again' or
				'my sickness comes back'
	c.	**k'òmaynáapìiksa**		
		k'óomay-náapii-k-see		
		sick-away-SF-INC		
		'I being sick am kept away (e.g., from work)'		

Some directional suffixes are accented, like **-áapii/-náapii** (404c), and some are unaccented like **-toq** (404b). Both of these examples in (404) derive S-stem verbs,

regardless of the verb they attach to. When a derivational suffix like **-áapii** 'back' begins in a vowel following an S-stem, then it begins with **n** following a C-stem: **-náapii**.

In the following discussion, I will show that suffixes can be handled without *Stressed Lexical Head, and that for unaccented suffixes *Stressed Lexical Head must not apply (i.e., it must be ranked below Edgemost Right). I will show that accented prefixes, both derivational and inflectional, require *Stressed Lexical Head. By contrast, unaccented prefixes require that *Stressed Lexical Head does not apply. The essential generalization is that accented prefixes need *Stressed Lexical Head to attract stress away from an accent that is to closer to the right edge of the word, but that for other morphology *Stressed Lexical Head is either not needed or it gives the wrong result.

It may at first seem that it is a shortcoming of the analysis to invoke both accent and a special constraint ranking in order to assign primary stress to a prefix. However, I will also argue that this apparent shortcoming has a felicitous result. In the following section §4.5.3.3., I discuss two types of cases where accented prefixes are resisted. Both of them involve retention of some level of internal morphological bracketing. One can propose an alternative analysis of deaccentuation, but I will argue that re-ranking *Stressed Lexical Head below Edgemost Right is more explanatory and better motivated.

4.5.3.2.1. Suffixes, Accent, and Edgemost Right

In the following examples, an unaccented S-stem **'niik** 'place' and an unaccented C-stem **tn'uk** 'die' are compared. Both stems undergo syllable motivated epenthesis when they are word initial (see Chapter 3.4.2). The vowel in 'die' can be syncopated, as has been described in §4.4.2. above. Regular stress assignment for both kinds of unaccented verb stems means that stress is assigned to the penult, whether this is on the stem or a suffix.

(405)	a.	**'ìníike**	b.	**hìtn'úxne**
		'niik-e		**hii-tn'uk-ne**
		place-PTV		3-die-PTV
		'I placed (something)'		'he died'
(406)	a.	**'ìnìksáaqa**	b.	**hìtìn'kicáaqa**
		'niik-saaqa		**hii-tn'uk-caaqa**
		place-REC		3-die-REC
		'I recently placed'		'he recently died'

When a verb stem is combined with a derivational suffix, stress shifts closer to the right edge, as expected. The derivational suffix in (407) is accented and in (08) it is unaccented; all receive primary stress.

(407)	a.	**'ìnikúusène**	b.	**tìn'xnáapìiksa**
		'niik-úu-sene		**tn'uk-náapiik-see**
		place-toward-RMT		die-away-INC
		'I placed it toward (someone)'		'I die (and leave someone behind)'
(408)	a.	**'ìniktéece**	b.	**tìn'kitéece**
		'niik-tee-cee		**tn'uk-tee-cee**
		place-move-INC		die-move-INC
		'I go to place'		'I go to die'

Thus, when the verb stem is unaccented, stress shifts regardless of whether the suffix is accented or unaccented.

When accented verb stems undergo suffixation, stress only shifts (409) when the derivational suffix is accented and non-final. The first set of examples show that these verb stems are accented because stress does not shift rightwards under inflection,.

(409)	a.	**wáayìksàqa**	b.	**páaycàqa**
		wéeyik-saaqa		**páay-caaqa**
		cross-REC		arrive-REC
		'I recently crossed'		'I recently arrived'

In the following example set, stress shifts to the accented suffix **-úu/-núu**. The derivational suffix means that the action takes place toward some human object. Although the verbs in these examples are morphologically intransitive due to antipassivization, they can be inflected for agreement with a third person object. [14]

(410)	a.	**wàyìkóosàqa**	b.	**pàynóosàqa**
		wéeyik-úu-saaqa		**páay-núu-saaqa**
		cross-toward-REC		arrive-toward-REC
		'I recently crossed toward'		'I recently arrived toward'

When the unaccented suffix **-toq** is affixed, stress does not shift, as in the following:

(411)	a.	**wáayìktòqsàqa**	b.	**páaytòqsàqa**
		wéeyik-toq-saaqa		**páay-toq-saaqa**
		cross-back-REC		arrive-back-REC

---

[14] The Nez Perce antipassive consists of simply expressing the verb with intransitive rather than transisitve agreement morphology. Antipassivization typically happens when the subject in some way possesses the direct object. There are other contexts when antipassivization occurs, particularly when the object is indefinite. In many examples in this section, verbs with transitive semantics will be expressed with intransitive morphology. Such examples allow the verbs to be more closely parallel the examples with verbs that are both semtically and morphologically intransitive.

'I recently crossed back' 'I recently arrived back'

The patterns presented here are readily explained in terms of the constraints CRP, Non-Finality, and Edgemost Right. Examples such as (411) with regular stress on the inflectional suffix derived by Non-Finality and Edgemost Right have already been discussed in the previous section. The analysis for unaccented derivational suffixes is the same. In the following tableaux, Non-Finality and Edgemost Right determine that stress is penultimate.

(412)

/ **'niik-tee-cee** /	CRP	Non-Finality	Edgemost Right
☞ **'inikteece**			*
'iniiktece			**!
'inikteceé		*!	

When the verb stem is accented, however, stress does not shift to an unaccented suffix. CRP requires that the accented stem receive primary stress.

(413)

/ **páay-toq-saaqa** /	CRP	Non-Finality	Edgemost Right
☞ **páaytoqsaqa**			***
paytóqsaqa	*!		**
paytoqsáaqa	*!		*

When the derivational suffix is accented, it receives main stress even when the stem is accented. These suffixes have nearly the same analysis as I presented with the accented inflectional suffixes **-ú'** and **-síix**, only the derivational suffixes never occur word final,

so Non-Finality is not a factor. In the following tableaux, there is no violation of Non-Finality when primary stress is assigned to **-úu** 'toward'.

(414)

'niik-úu-sene	CRP	Non-Finality	Edgemost Right
☛ **'inikúusene**			**
'inikusene	*!		*

Main stress is assigned to the suffix, instead of to an accented stem, when the accented syllable of the suffix is not word final.

(415)

/páay-núu-saaqa /	CRP	Non-Finality	Edgemost Right
☛ **paynóosaqa**	*		**
páaynosaqa	*		***!

Equal violations of CRP occur, so the choice is made with respect to the lower ranked constraint Edgemost Right. This contrasts with an example where the rightmost accented syllable is word final, and it is Non-Finality that chooses between accented syllables.

(416)

/páay-cíix /	CRP	Non-Finality	Edgemost Right
☛ **páaycix**	*		*
paycíix	*	*!	

These examples are the near mirror-counterparts of the Sanskrit and Salish examples discussed in §4.5.3.1.

4.5.3.2.2. Prefixes, Accent, and *Stressed Lexical Head

Thus far, the analysis of multiple accents has not required the introduction of the constraint *Stressed Lexical Head. This constraint is needed to describe accented prefixes. The reason is that an accented prefix receives main stress even when the verb stem is accented. Since the constraint Edgemost Right cannot be employed to force stress to move to an accent that is to the left of another, a different constraint is needed. It has already been shown in the domain of compound nouns that *Stressed Lexical Head is needed to account for this pattern of stress assignment (see (398)-(399) above). A difference between the compound nouns and verb derivation is that *Stressed Lexical Head only plays a role in verb morphology when the modifier is accented.

When an accented prefix is concatenated with an unaccented stem, it is not surprising to find that the accented prefix receives main stress. In (417), the verb stems are unaccented, and stress shifts to the accented prefixes.

(417)	a.	**nìkée'nìkse**	b.	**wéeltìn'kse**
		nkée-'niik-see		**wéel-tn'uk-see**
		pull-place-INC		flow-die-INC
		'I rein' (a horse)		'I bleed to death'
		(i.e., 'place by pulling')		

This is the expected result when CRP outranks Edgemost Right. Primary stress has to go to the one accented syllable.

On the other hand, when the same pattern of stress shift is seen with an accented stem, it is unexpected if we think only in terms of Edgemost Right. In (418), the verb stems and the derivational prefixes are accented, and stress is assigned to the prefix.

(418) a. **tulée̓weyikse**
tulée-wée̓yik-see
by.foot-cross—INC
'I cross by foot'

b. **nikáapayksa**
nikée-páay-k-see
pull-arrive-SF-INC
'I discover'

If Edgemost Right were the constraint which chooses between accented syllables in these examples, then main stress should be found on the accented verb stems. We can compare Sanskrit and Salish, where Edgemost Left chooses. The following tableaux show that *Stressed Lexical Head is needed to obtain the correct result:

(419)

/tulée-wée̓yik-see/	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☞ a. **tulée̓weyikse**		*		***
b. **tulewée̓yikse**	*!	*		**
c. **tuleweyíkse**	*!	**		*

If *Stressed Lexical Head were not considered, candidate (c) loses anyway, because it has two violations of CRP. However, the first two candidates tie with respect to that constraint. If *Stressed Lexical Head does not apply, then candidate (b) would win based on its having violated Edgemost Right only twice. That *Stressed Lexical Head does apply, as it does in compound nouns, gives the correct result, candidate (a).

When additional accented prefixes are added to a stem, stress continues to move to the left, to each new accented syllable. This fact creates a new challenge for the analysis.

(420) a. **cúukwèce**
cúukwe-cee
know-INC
'I know'

b. **silèewcùkwèce**
slèew-cùukwe-cee
by.seeing-know-INC
'I know by seeing'

c. **sepèeslèwcùkwèce**
sepèe-slèew-cùukwe-cee
CAUS-by.seeing-know-INC
'I make you (SG) know by seeing'

d. **nèesepèslèwcùkwèce**
nèes-sepèe-slèew-cùukwe-cee
PLOB -CAUS-by.seeing-know-INC
'I make you (PL) know by seeing'

The examples in (421) and (422) provide additional illustration of this pattern for the verb roots **tk'uk** 'be straight' and **twe** 'be together'.

(421) a. **hitk'ukíce**
hii-tk'uki-cee
3-be.straight-INC
'it is straight'

b. **nikèetk'ukce**
nkèe-tk'uk-cee
pull-be.straight-INC
'I make straight pulling'

c. **wiyèenketk'ukse**
wyèe-nkèe-tk'uk-see
as.one.goes-pull-be.straight-INC
'I straighten (arrows as time went on)'

d. **hinèeswiyènkètk'ùkse**
hii-nèes-wyèe-nkèe-tk'uk-see
3-PLOB-as.one.goes-pull-be.straight-INC
'he straightens them (arrows as time went on)'

(422) a. **sepéetwèce**
sepée-twe-cee
CAUS-be.together- INC
'I mix'

b. **wiyéetùsepètwèce**
wyée-túu-sepée-twe-cee
going.along-pound-CAUS-be.together- INC
'I mix in as I pound'

c. **péewyetùsepètwèce**
pée-wyée-túu-sepée-twe-cee
3ON3-going.along-pound-CAUS-be.together- INC
'she mixes it in as she pounds'

A new problem is created if it is held that the verbs consist of unbracketed strings of morphemes. If this were the case, then Edgemost Right would be expected to make the rightmost morpheme the optimal one. As we see in the examples given here, Nez Perce chooses the leftmost accented syllable.

There is a way out of this predicament without redefining *Stressed Lexical Head to "Stress the Leftmost accented morpheme". As Allen (1978) has observed regarding bracket erasure (see also Pesetsky 1979 and Kiparsky 1985), stems composed of a root and one or more derivational prefixes can and should be considered as a lexical items in their own right. Internal bracketing can generally be erased in lexical items, and an additional prefix will be considered exterior to thelexical head (I will discuss cases in the next section where some bracketing must be retained). The examples in (422) can then be reinterpreted as (423) with the proper bracketing. The square brackets enclose the

stem(underlying or derived), which I assume is an independent lexical item. Hyphens allow us to demarcate the morphemes and stem, and are equivalent to brackets.

(423) a. **cúukwèce**
[cúukwe]-cee
know-INC
'I know'

b. **siléewcùkwèce**
[sléew-cúukwe]-cee
by.seeing-know-INC
'I know by seeing'

c. **sepéeslèwcùkwèce**
[sepée-sléewcukwe]-cee
CAUS-know.by.seeing-INC
'I make you (SG) know by seeing'

d. **néesepèslèwcùkwèce**
nées-[sepéeslewcukwe]-cee
PLOB -cause.to.know.by.seeing-INC
'I make you (PL) know by seeing'

Bracket erasure (Allen 1978) applies to (424) and (423c) above and is illustrated in the following tableau.

(424)

[sepée-sléewcukwe]-cee	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☛ a. **sepéeslewcukwece**		*		****
b. **sepesléewcukwece**	*!	*		***

An important piece of evidence in support of this approach is that it is more consistent with the semantics of Nez Perce words than is approaching them as strings of unorganized morphemes. Although the meaning of a stem plus a derivational suffix often

can be relatively straightforward, there are many cases where unpredictable meanings result from concatenation of root and derivational affix. When there is an unpredictable meaning and an additional prefix is added, it modifies the meaning of the internally bracketed pair of morphemes. In the first set of examples in (425), the prefix **we-** 'by mouth' combines with the root **'np** 'take' to derive the verb **we'np** 'sing'. There are many other meanings that one can conceive of for 'take by mouth' other than 'sing', but this is the meaning of this Nez Perce verb.

(425) a. **'inpíse**
'np-see
take-INC
'I take'

b. **we'npíse**
[we-'np]-see
by.mouth-take-INC
'I sing'

c. **wiyúu'nipse**
[wiyée-we'np]-see
going.along-sing-INC
'I sing on the way'

d. **wiyúu'nipse**
wiyée-[we-'np]-see
going.along-by.mouth-take

The new verb 'sing' can be modified by the prefix **wyée** 'going along' to produce the meaning 'sing as one goes along' or 'sing on the way' (425c). It is hard to see how this meaning would be obtained by concatenating the root plus the two derivational prefixes without the internal bracketing. The same can be seen for 'aim' which obviously was derived at a time when aiming was done with a bow and arrow.

(426) a. **hekíce**
hek-cee
see-INC
'I see'

b. **nikéekce**
nkée-hek-cee
pull-see-INC
'I aim' (i.e., 'I pull a bow string')

c. **'ewyéenkeekce**
'e-wyée-[nkéek]-cee
3OB-going.along-aim-INC
'I aim at it as it goes along'

d. **'ewyéenkeekce**
'e-wyée-nkée-hek-cee
3OB-go.along-pull-see-INC

The verb **nkéek** 'aim' is now used for firearms, and the idea of pulling a bow string is essentially lost.[15]

Examples like (421d), (422d) and (422c) repeated here show that the application of *Stressed Lexical Head must be extended to inflectional prefixes. Bracketing excludes inflectional morphology.

(427) **néesepèslèwcùkwèce**
nées-[sepéeslewcukwe]-cee
PLOB -cause.to.know.by.seeing-INC
'I make you (PL) know by seeing'

(428) **hinéeswiyènkètk'ùkse**
hii-nées-[wyée-nkée-tk'uk]-see
3ON3-as.one.goes-pull-be.straight-INC
'he straightens them (arrows as time went on)'

(429) **péewyetùsepètwèce**
pée-[wyée-túu-sepée-twe]-cee
3ON3-going.along-pound-CAUS-be.together- INC
'she mixes it in as she pounds'

There are several accented agreement prefixes, such as **pée-** 'third person subject acts upon third person object' and **nées-** 'plural object', which consistently receive primary stress (several other accented inflectional prefixes are found in Chapter 2.3.4.2):

---

[15] The word for 'gun' is **tim'úuni** and the word for 'bow' **waliimtim'uni** 'old-time gun'.

(430) a. **péekìwyèkse**
pée-[kíwyek]-see
3ON3-feed-INC
'he is feeding it'

b. **hinéeskìwyèkse**
hii-nées-[kíwyek]-see
3-PLOB-feed-INC
'he is feeding them'

(431) a. **péenkè'nìkse**
pée-[nkée-'niik]-see
3ON3-pull-place-INC
'he reins it' (a horse)

b. **hinéesnikè'nìkse**
hii-nées-[nkée-'niik]-see
3-PLOB-pull-place-INC
'he reins them' (horses)

The following tableaux for (431b) illustrate the fact that applying the constraint *Stressed Lexical Head to accented inflectional prefixes obtains the correct result. Otherwise, candidate (a) would lose to candidate (b) by virtue of the greater number of violations of Edgemost Right.

(432)

hii-nées-[nkée'niik]-see	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☛ a. **hinéesnike'nikse**		*		****
b. **hinesnikée'nikse**	*!	*		**

I have now shown that the way in which accented prefixes attract primary stress can be accounted for in terms of the constraint *Stressed Lexical Head. I return now to issues raised by unaccented derivational prefixes and suffixes.

4.5.3.2.3. Contrasting accented prefixes with other bound morphology

In §4.5.3.2.1., I showed that stress assignment in verbs with both accented and unaccented suffixes can be explained in terms of CRP, Non-Finality, and Edgemost Right, without reference to the constraint *Stressed Lexical Head. In the previous section

5.5.3.2.2., I showed that *Stressed Lexical Head can account for the behavior of accented prefixes, both derivational and inflectional. I have not addressed unaccented derivational prefixes, and it is important to do so, for they reveal an important fact about the constraint *Stressed Lexical Head: Only when a verb affixes an accented prefixes is *Stressed Lexical Head ranked above Edgemost Right. I will show in this section that it is necessary that *Stressed Lexical Head be ranked below Edgemost Right with unaccented affixes in general.

As expected, stress shifts to an accented prefix when the stem is unaccented.

(433)	a.	**nikée'nikse**	b.	**wéeltin'kse**
		nkée-'niik-see		**wéel-tn'uk-see**
		pull-place-INC		flow-die-INC
		'I rein'		'I bleed to death'

However, this observation contrasts with one that is unexpected given the discussion thus far. Stress does not shift to an unaccented prefix, either from an unaccented stem (434) or from an accented stem (435). The fact that primary stress does not shift in such cases is unexpected if *Stressed Lexical Head is ranked above Edgemost Right.

(434)	a.	**tèqè'nikíse**	b.	**tèextín'kse**
		tqe-'niik-see		**teex-tn'uk-see**
		quickly-place-INC		cold-die-INC
		'I briefly place'		'I freeze to death'
(435)	a.	**tàqapáayca**	b.	**tàaxk'óomàyca**
		tqe-páay-cee		**teex-k'óomay-cee**
		quickly-arrive-INC		cold-sick-INC
		'I stop by briefly'		'I get sick from cold'

In these examples, unaccented prefixes are concatenated with accented and unaccented stems, and yet main stress is assigned to the stem. If *Stressed Lexical Head was highly ranked in such examples, we would expect stress to shift to the prefix, whether it were accented or not. The incorrect output ***téextin'kse** would be obtained, as in (436):

(436) (Incorrect output)

/ **teex-tn'uk-see** /	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☞ a. **téextin'kse**				**
b. **teextín'kse**	*!			*

This pattern in verbs contrasts with the compound nouns in, repeated here, where *Stressed Lexical Head must be highly ranked.

(437) a. **háamamya'c**
[háama [mya'c]
man child
'grown son'

b. **táya'niit**
[táya ['níit]]
summer house
'summer house'

(438) a. **màx̂sáamtàlam**
[meex̂seem [taalaam]]
mountain tip
'mountain top'

b. **hày'óoxchàcwal**
[heey'uuxc [háacwal]]
cottontail boy
'cottontail boy'

In these four examples, the constraint system assigns main stress to the modifier whether or not the modifier is accented, and whether or not the head noun is accented. When *Stressed Lexical Head outranks the other constraints, the a morpheme other than the lexical head has to receive main stress.

In §4.5.2, I showed that among compound nouns, approximately one-third of examples have Stress the modifier ranked below Edgemost Right. This was regularly the case with certain lexical items like **wéeku's** 'lookalike' and **'ískit** 'trail'.

(439) a. **tèpùlwéeku's**
[teepuul [wéeku's]]
marrow lookalike
'candy'

b. **lèpwe'ískit**
[léepwe ['iskit]]
Lapwai trail
'trail to Lapwai, ID'

In the verb morphology, it is always the case that if the affix is unaccented then the constraint *Stressed Lexical Head is ranked below Edgemost Right.

It does not solve the problem to simply re-rank *Stressed Lexical Head below CRP, because this will still yield the wrong result when the verb stem is unaccented. The wrong form ***téextin'kse** is still generated in (450), because *Stressed Lexical Head outranks Edgemost Right.

(450) (Incorrect output)

/teex-tn'uk-see /	CRP	*Stressed Lexical Head	Non-Finality	Edgemost Right
☞ a. **téextin'kse**				**
b. **teextín'kse**		*!		*

Only when *Stressed Lexical Head is ranked below Edgemost Right can the latter constraint derive the correct placement of primary stress:

(451)

/teex-tn'uk-see /	CRP	Non-Finality	Edgemost Right	*Stressed Lexical Head
☞ a. **teextín'kse**			*	*
b. **téextin'kse**			**!	

The correct ranking is repeated in (452).

(452) CRP, Non-Finality, Edgemost Right » *Stressed Lexical Head

The ranking in (452) must also hold for unaccented derivational suffixes. Otherwise, these suffixes would attract main stress from accented stems, something that does not occur in Nez Perce. This fact is seen in the examples repeated here.

(453) a. **wáayìktòqsàqa**
wéeyik-toq-saaqa
cross-back-REC
'I recently crossed back'

b. **páaytòqsàqa**
páay-toq-saaqa
arrive-back-REC
'I recently arrived back'

The incorrect output for (453b) ***paytóqsaqa** is chosen by the tableaux in (454).

(454) (Incorrect output)

/ **páay-toq-saaqa** /	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☞ a. **paytóqsaqa**		*		**
b. **páaytoqsaqa**				***
c. **paytoqsáaqa**	*!	*		*

The correct output **páaytòqsàqa** is obtained when *Stressed Lexical Head is ranked below Edgemost Right, and the most important constraint is CRP.

(455)

/ **páay-toq-saaqa** /	CRP	Non-Finality	Edgemost Right	*Stressed Lexical Head
☞ a. **páaytoqsaqa**			***	*
b. **paytóqsaqa**	*!		**	
c. **paytoqsáaqa**	*!		*	*

When accented derivational suffixes are considered, we find that it does not matter whether *Stressed Lexical Head outranks the other constraints or whether the other constraints outrank *Stressed Lexical Head.

(456) a. **hiweyikúuse**
hii-wéeyik-úu-see
3-cross-toward-INC
'he is crossing toward' (someone)

b. **hipaynóosa**
hii-páay-núu-see
3-arrive-toward-INC
'he is arriving to' (someone)

The suffix **-úu** is a outside of the lexical head and it is accented, so it will receive main stress whether or not *Stressed Lexical Head is ranked highly or not. However, with the accented inflectional suffixes **-síix/-cíix** and **-ú'/-nú'**, the ranking must be with *Stressed Lexical Head below Non-Finality. Otherwise, *Stressed Lexical Head would force primary stress to be on the ultima in the following examples:

(457) a. **wéeyiksìx**
wéeyik-síix
cross-INC.PL
'we are crossing'

b. **páaynò'**
paay-nú'
arrive-IRR
'I will arrive'

The correct output is obtained in (458) but the wrong one in (459).

(458)

/ **páay-nú'** /	CRP	Non-Finality	Edgemost Right	*Stressed Lexical Head
☞ a. **páayno'**	*		*	*
b. **paynó'**	*	*!		

(459) (Incorrect output)

/ **páay-nú'** /	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☛ a. **paynó'**		*	*	
b. **páayno'**	*!	*		*

If an accented prefix causes the constraint ranking to be redefined, as has been argued, the correct output will still result. The accented prefix will receive primary stress because it is not word final.

(460) a. **hinéeskìwyekù'**
hii-nées-[kíwyek]-ú'
3-PLOB-feed-IRR
'he will feed them'

b. **péenkè'nìksìx**
pée-[nkée'niik]-síix
3ON3-rein-INC.PL
'he will rein it'

(461)

/**hii-nées-[kíwyek]-ú'**/	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☛ a. **hinéeskiwyeku'**	*	**		***
b. **hineskiwyekú'**	*	**	*!	
c. **hineskíwyeku'**	**!	**		**

In (461), candidates (a) and (b) tie on the two highest constraints, but assigning primary stress to the ultima in candidate (b) causes a violation of Non-Finality. Again, we see that an accented ultima only receives primary stress when it is the only accented syllable in the word.

4.5.3.2.4. Summary

The essential observations that I have argued for in this section are as follows: Only accented prefixes need to have *Stressed Lexical Head ranked above the other constraints. This allows an accented syllable to attract stress away from an accented syllable to its right. Unaccented prefixes, unaccented suffixes, must not have *Stressed Lexical Head ranked above Edgemost Right. Accented derivational suffixes could have either ranking, although I will assume that they have the same ranking as the accented prefixes. Put more succinctly, in Nez Perce verb morphology, only accented affixes have *Stressed Lexical Head highly ranked.

4.5.3.3. Redefinition of stem type and analogy

In this last section, I will assume that the default constraint ranking for verbs has *Stressed Lexical Head ranked as in (462).

(462) CRP, Non-Finality, Edgemost Right » *Stressed Lexical Head

When an unaccented prefix, unaccented suffix, or accented inflectional suffix is added to the verb, this ranking remains unchanged. CRP, Non-Finality, and Edgemost Right determine the optimal output.

When an accented prefix or accented derivational suffix is concatenated with the verb stem, it includes the redefinition of the verb's constraint ranking as in (463).

(463) *Stressed Lexical Head » CRP, Non-Finality, Edgemost Right

This allows the accent that is left of the stem's accent to receive primary stress as seen in (423), repeated here.

(423) a. **cúukwèce**
cúukwe-cee
know-INC
'I know'

b. **silèewcùkwèce**
[slèew-cúukwe]-cee
by.seeing-know-INC
'I know by seeing'

c. **sepèeslèwcùkwèce**
[sepée-slèewcukwe]-cee
CAUS-know.by.seeing-INC
'I make you (SG) know by seeing'

d. **néesepèslèwcùkwèce**
nées-[sepèeslewcukwe]-cee
PLOB -cause.to.know.by.seeing-INC
'I make you (PL) know by seeing'

We see that stress continues to move leftwards with each additional accented prefix. The tableaux in (464) show why, according to the analysis given.

(464)

nées-[sepèeslewcukwe]-cee	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☞ a. **néesepeslewcukwece**		*		******
b. **nesepèeslewcukwece**	*!	*		****

The accented agreement prefix **nées-** attracts primary stress by virtue of the constraint *Stressed Lexical Head being ranked above Edgemost Right.

There is an alternative analysis that can be proposed, one involving deaccentuation. We might suppose that accented prefixes in Nez Perce are deaccentuating, like deaccentuating suffixes in Sanskrit. Haile and Vergnaud (1987) explain that in Sanskrit the last dominant suffix determines the stress nature of the verb – if it is accented, then it receives the word accent. If it is unaccented, then stress is assigned to the leftmost syllable, regardless of whether any other morpheme is accented. In (465a), the accented suffix **-ín** receives the word accent. Since it is the only accented syllable in 'befriended' this is not surprizing. In (b), **-ín** receives word accent even though there is another accented morpheme to the left of it. By deaccentuating the preceding accent, it is able to receive the word accent.

(465)	a.	**(mitr-ín)-e**	→	**mitríne**	'befriended (dative SG)'
	b.	**(ráth-ín)-e**	→	**ráthine**	'charioteer (dative SG)'
	c.	**(ci-kar-áy-iṣa)-ti**	→	**cíkarayiṣati**	'wants to cause to make'

In (465c), the deaccentuating suffix **-iṣa** is itself unaccented. By deaccenting the preceding accented suffix **-áy**, the deaccentuating suffix causes the entire word to be unaccented, and the initial suffix receives word accent by virtue of Edgemost Left. Czaykowsa-Higgins (1990) describes analogous deaccentuating suffixes in Moses-Columbian Salish.

This approach has an appeal for Nez Perce. It would allow us to have just one constraint ranking for verbs, the one with *Stressed Lexical Head ranked below the other constraints (we will still need both rankings to account for compound nouns discussed in

§4.3.2). Deaccentuation would allow the analysis to explain the leftward movement of primary stress to accented syllables in Nez Perce without simultaneously appealing to accent and *Stressed Lexical Head (although it would require a means of accounting for deaccentuation itself). Unfortunately, there are two types of cases where deaccentuation does not work.

In the first type of case, accented suffixes can be found with accented prefixes in the same word. In many of these cases, the accented suffix is clearly morphological scope of the prefix. If an accented prefix deaccentuates accents to its right, then it should deaccentuate an acented suffix, particularly when the suffix is part of the stem to which the prefix attaches. This does not happen. It is the accented suffix, instead of the accented prefix, that receives primary stress.

The second set of problematic cases consists of complex verb stems which are composed of an unaccented prefix combined with a stem, which can either be accented or unaccented. When an accented prefix is added to such a stem, one might expect that the accented prefix would receive primary stress, like it is when it is concatenated with a verb root or a verb stem that contains an accented prefix. However, this is not what happens; in most cases stress does not move. It is as if the stem has both become accented and does not allow redefinition of its constraint hierarchy to allow stress to shift to a prefix. I will refer to these stems as "hyper-accented", although I will show below that there is nothing remarkable about the accent itself. It is rather the impossibility of redefining the constraint ranking for these stems.

Both sets of data will require that some internal bracketing be retained. I will show in the last section that when the bracketing has been lost that the unusual behavior goes away.

4.5.3.3.1. Accented prefixes versus accented suffixes

In the discussion above, I provided examples of accented prefixes attracting stress away from the right edge of the word. In (466), the accented suffixes attract stress towards the right edge away from accented stems.

(466)	a.	**wàyìkóosàqa**	b.	**pàynóosàqa**
		wéeyik-úu-saaqa		**páay-núu-saaqa**
		cross-toward-REC		arrive-toward-REC
		'I recently crossed toward'		'I recently arrived toward'

The suffix **-úu** (**-núu** following a C-stem verb) indicates that there is an object, typically human, towards which the action occurs. The accentual nature of **-úu** contrasts with the behavior of unaccented suffixes like **-toq**, where stress does not shift from an accented stem.

(467)	a.	**wáayìktòqsàqa**	b.	**páaytòqsàqa**
		wéeyik-toq-saaqa		**páay-toq-saaqa**
		cross-back-REC		arrive-back-REC
		'I recently crossed back'		'I recently arrived back'

When a verb stem combines both an accented prefix and an accented suffix, the suffix wins in almost every case (I will return to possible exceptions later in §4.5.3.3.3). In the following example set, the accentual nature of **nées-** 'plural object' and **-úu**

'toward a human object' are illustrated individually and then together (d). The morphemes are represented as a string, as well as with the bracketing relations indicated by the semantics.

(468) a. **hìwéeyìkse**
hii-wéeyik-see
3-cross-INC
'he is crossing'

b. **hìnéeswèyìkse**
hii-nées-wéeyik-see **nées-[wéeyik]**
3-PLOB-cross-INC
'he is crossing them'

c. **hìwèyikúuse**
hii-wéeyik-úu-see **[wéeyik]-úu**
3-cross-toward-INC
'he is crossing toward (someone)'

d. **hìnèswèyikúuse**
hii-nées-wéeyik-úu-see **nées-[weyikúu]**
3-PLOB-cross-toward-INC
'he is crossing toward them'

In this last example, it is the accented suffix that wins. It is also the case that the suffix is inside the morphological scope of the prefix. The prefix is an inflectional agreement marker that indicates the number of the human object. The suffix **-úu** changes the semantics of the verb and specifies that the object is human. This is a problem for the previous analysis given the bracketing represented in (468d), because the accented prefix is modifying the stem 'cross toward' and yet does not receive primary stress.

Additional examples highlight the problem. The verb **páay** 'arrive' is intransitive. In the first set of cases, stress moves leftwards to accented prefixes (469).

(469) a. **hipáayca**
hii-páay-cee
3-arrive-INC
'he is arriving'

b. **hìsapáapàyca**
hii-sepée-páay-cee **sepée-[páay]**
3-CAUS-arrive-INC
'he makes arrive (someone)'

c. **hìnáasàpapàyca**
hii-nées-sepée-páay-cee **nées-[sapáapay]**
3-PLOB-CAUS-arrive-INC
'he makes them arrive'

When the suffix **-úu/-núu** is concatenated with the root, the transitive stem **paynóo** 'arrive to someone' is derived. With the verb **paynóo** stress does not shift leftwards, no matter how many accented prefixes are affixed to the verb (470).

(470) a. **hipaynóosa**
hii-páay-núu-see **[páay]-núu**
3-arrive-toward-INC
'he arrives to (someone)'

b. **hinàspàynóosa**
hii-nées-páay-núu-see **nées-[paynóo]**
3-PLOB-arrive-toward-INC
'he arrives to them'

c. **hìsàpapàynóoca**
hii-sepée-páay-núu-cee **sepée-[paynóo]**
3-PLOB-CAUS-arrive-toward-INC
'he makes (someone) arrive to (someone)'

d. **hìnàsàpapàynóoca**
hii-nées-sepée-páay-núu-cee **nées-[sapapaynóo]**
3-PLOB-CAUS-arrive-toward-INC
'he makes them arrive to him'

How can the "immovable" stress nature of this accented suffix be accounted for?

The problem is that the analysis given thus far depends on the "winning" accent being outside of the "losing" accent or accents. This is in the definition of the constraint *Stressed Lexical Head, assuming that affixes are outside of the head that they are attached to. It cannot be successfully argued that *Stressed Lexical Head should be redefined to stressing the outermost accented morpheme, because it is clear that in the examples above that the winning accented morpheme is not the outermost one. There are cases where the accented suffix **-úu** is outside of the verb stem, such as (421c), but not in (470). The problem can be resolved if we allow these verbs to retain some bracketing, just in case they have an accented derivational suffix. Examples such as those in (470)can be represented as follows:

(471) a. **hìnèswèyikúuse**
hii-nées-wéeyik-úu-see **nées-[[weyik]úu]**
3-PLOB-cross-toward-INC
'he is crossing toward them'

b. **hinàspàynóosa**
hii-nées-páay-núu-see **nées-[[pay]nóo]**
3-PLOB-arrive-toward-INC
'he arrives to them'

c. **hìsàpapàynóoca**
hii-sepée-páay-núu-cee **sepée-[[pay]nóo]**
3-PLOB-CAUS-arrive-toward-INC
'he makes (someone) arrive to (someone)'

d. **hìnàsàpapàynóoca**
hii-nées-sepée-páay-núu-cee **nées-[[sapapay]nóo]**
3-PLOB-CAUS-arrive-toward-INC
'he makes them arrive to him'

As long as the grammar is able to identify the accented suffix as not being part of the lexical head, then stressing this affix will allow the candidate to satisfy *Stressed Lexical Head; the suffix will be able to receive primary stress. In tableaux (472), both affixes are accented in the underlying representation, and both candidates violate CRP once. They also violate *Stressed Lexical Head once each. However, the accented suffix wins by virtue of the fact that it is close to the right edge than the prefix.

(472)

hinées-[[pay]nóo]-cee	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☞ a. **hinaspaynóosa**	*	*		*
b. **hináaspaynosa**	*	*		**!*

The low ranked Edgemost Right is able to determine the outcome when the candidates are tied on the higher ranking constraints.

4.5.3.3.2. The problem of "hyper-accented" verb stems

In this section, I present additional data which indicate that some internal bracketing must be allowed. I have dubbed these examples hyper-accented verbs, but there is really nothing different about the properties of the accent itself. Syllables with primary stress in these verbs sound just like other syllables with primary stress in Nez Perce. What is different about them is that stress does not shift to an accented prefix. I will argue that when an unaccented prefix is concatenated and shift does not occur, this defines the constraint ranking with *Stressed Lexical Head as being outranked by Edgemost Right and the other constraints. The internal bracketing serves to prevent this constraint ranking from being redefined by an accented prefix.

Compare the examples in (472):

(472) a. **tàlqíca**
talqi-cee
stop-INC
'I stop'

b. **tàlqcáaqa**
talq-caaqa
stop-REC
'I just stopped'

c. **cóotàlqsa**
cuu-talq-see
pointed.obj-stop-INC
'I stop with a pole'

d. **tàqatálqsa**
teqe-talq-see
quick-stop-INC
'I run and lose strength'

The unaccented C-stem **talq** undergoes shift, allowing stress to be assigned to the inflectional suffix (472b). Under derivation (472c,d), and the stem type changes to an S-stem. We find that main stress is attracted to an accented prefix in (472c) but not to an unaccented derivational prefix in (472d). Thus far, the results are as expected.

When we take the newly formed stem from (472d), **taqatalq** and combine it with additional accented prefixes, we find that the unaccented verb stem becomes hyper-accented. It does not allow stress to shift to an accented prefix (473).

(473) a. **sàpatàqatálqsa**
sepée-[taqa-tálq]-see
CAUS-quick-stop-INC
'I make (someone) stop temporarily'

b. **'ìpnasàptàqatálqt**
'ipnée-séep-[taqa-tálq]-t
3REFL-CAUS-quick-stop-NOM
'abstention'

I have represented the stem **taqa-tálq** as having accent as well as internal bracketing. The analysis I will propose must make reference to both of these features.

Hyper-accented verbs are also formed from stems that have an underlying accented root. The following examples are based upon the accented root **k'íw** 'sever'. This root is typical in that it has a very basic general meaning. It is usually used with a

derivational prefix to tell what kind of severing action takes place. When a derivational prefix is added, the stem formant **-k** is also added, changing the stem type to the S-stem class.

In the first set of examples, **k'íw** combines with the accented derivational prefix **kée** 'with the teeth'. Stress shifts to this prefix, and when the transitive agreement prefix **pée-** is added, stress continues to shift leftwards.

(474) a. **hìk'íwca**
hii-k'íw-cee
3-sever-INC
'he severs'[16]

b. **káak'ìwksa**
kée-k'íw-k-see **kee-[k'íwk]**
with.teeth-sever-SF-INC
'I cut with teeth'

c. **páakak'ìwksa**
pée-kée-k'íw-k-see **pée-[kéek'iwk]**
3ON3-with.teeth-sever- SF-INC
'he cuts it with teeth'

When the root **k'íw** is combined with the unaccented derivational prefix **'se-** 'with a blade or cutting edge', stress does not shift to the prefix (475a). However, the combination of unaccented prefix and accented root create a hyper-accented stem which does not allow shift to subsequent accented prefixes (b-c)

(475) a. **'ìsak'íwksa**
'se-k'íw-k-see **'se-[k'íwk]**
with.blade-sever-SF-INC
'I cut with blade'

b. **pà'sak'íwksa** **pée-['sak'íwk]**
pée-'se-k'íw-k-see
3ON3-with.blade-sever- SF-INC
'he cuts it with blade'

c. **'ìpnàwyakà'sk'íwksa** **'ipée-[wyaka'sk'íwk]**
'ipnée-wyée-kée-'se-k'íw-k-see
3REFL-going.along-teeth-with.blade-sever- SF-INC
'he cuts himself as he eats' (of a cannibal who then eats himself)

Verbs derived from the roots **talq** 'stop' and **k'íw** 'sever' are found taking one of two possible paths: the derivation which is begun with an accented prefix (476a), (477a) defines the verb as allowing stress shift and the derivation which is begun with an unaccented prefix defines the verb as not allowing shift (476b), (477b).

(476) Verb stems derived from the root **talq**

a. **cóotalq** b. **tqatálq**
'stop with a pole' 'quickly stop

(477) Verb stems derived from the root **k'íw**

a. **kéek'iwk** b. **'sak'íwk**
'cut with the teeth' 'cut with a blade'

---

[16] Although this verb root has only the high front vowel **i**, it has dominant vowels. This is consistent with the analysis that it is morphemes that carry the dominance feature rather than the vowels themselves. For more on vowel harmony see Chapter 3.2.1.

This pattern is also found with the verb root **hoł** 'slip off, loosen'. When combined with the accented prefix **nkée** 'pull', the verb stem allows stress to shift (478).

(478) a. **nikáahołksa**
nkee-hoł-k-see
pull-slip.off-SF-INC
'I am pulling off (something)'

b. **páankahołksano'**
pee-[nkee-hoł]-k-see
3ON3-pull-slip.off-SF-INC
'he pulls it off'

When combined with the unaccented prefix **cuula-** 'grasping with the hand', the verb takes the hyper-accented derivational route.

(479) a. **còolahółksa**
cuule-hoł-k-see
grasp.hand-slip.off-SF-INC
'I slip it off'

b. **'ìnacòolahółksa**
'ináa-[coola-hół]-k-see
1SG.REFL-grasp.hand-slip.off-SF-INC
'I'm slipping myself off/escaping'

(480) <u>Verb stems derived from the root **hoł**</u>

a. **nkáahoł** 'pull off'

b. **coolahół** 'slip off'

What is common to all three hyper-accented verb stems is that their derivation begins with an unaccented derivational prefix in contrast with the regular verb stems which begin their derivations with an accented prefix. I am unaware of any verb roots that

are themselves hyper-accented. This behavior only arises as a result of concatenation with an unaccented prefix.

I have already argued that accented prefixes redefine the default constraint ranking in (481) to that of (482).

(481) CRP, Non-Finality, Edgemost Right » *Stressed Lexical Head

(482) *Stressed Lexical Head » CRP, Non-Finality, Edgemost Right

The behavior of so-called hyper-accented verbs can be accounted for if we say that their derivation with an unaccented prefix blocks redefinition of the constraint hierarchy.

I have shown in several places in this chapter that constraint hierarchies must be changed to account for different classes of words in the lexicon. It is the task of the language learner to decide when a hierarchy is to be changed or must not be changed. When an accented prefix is combined with a verb root, the language learner normally redefines the hierarchy. It appears that when a language learner sees that a stem is made up of a prefix and a root, and the learner finds that accent has not shifted to the prefix, then the learner concludes that shift is not allowed for this stem. The learner does not have to balance the accentual nature of the root and stem. All the learner has to know is that stress does not shift, so the learner concludes that the default constraint hierarchy does not redefine under affixation.

We can see that the default constraint hierarchy (481) obtains the correct result in the following tableaux for **pà'sak'íwksa** 'he cuts it':

(483)

pée-['sak'íwk]-sa	CRP	Non-Finality	Edgemost Right	*Stressed Lexical Head
☛ a. **pà'sak'íwksa**	*		*	*
b. **páa'sak'ìwksa**	*		**!*	

By preventing the constraint hierarchy from being redefined, the grammar maintains Edgemost Right as outranking *Stressed Lexical Head, and Edgemost Right determines the optimal candidate. If the constraint hierarchy were redefined as it usually is for accented prefixes, then the incorrect output would be chosen as optimal as in (484)

(484) (Incorrect output)

pée-['sak'íwk]-sa	*Stressed Lexical Head	CRP	Non-Finality	Edgemost Right
☛ a. **páa'sak'ìwksa**		*		***
b. **pà'sak'íwksa**	*!	*		*

In order for this analysis to work for examples like **sàpatàqatálqsa** 'I make (someone) stop', we have to assume that the language learner attributes accent to the root, in addition to not allowing the constraint hierarchy to be redefined. The underlying representation of 'quickly stop' must be accented **/taqa-tálq/** rather than **/taqa-talq/**.

(485)

sepée-/taqa-tálq/sa	CRP	Non-Finality	Edgemost Right	*Stressed Lexical Head
☛ a. **sapataqatálqsa**	*		*	*
b. **sapáataqatalqsa**	*		**!**	

When both the stem and prefix are accented, the candidates tie with respect to CRP. If the stem were not accented, the accented prefix in (485) would attract primary stress by virtue of the fact the first candidate would not violate CRP.

(486) (Incorrect output)

sepée-/taqa-talq/sa	CRP	Non-Finality	Edgemost Right	*Stressed Lexical Head
☛ a. **sapáataqatalqsa**			****	
b. **sapataqatálqsa**	*!		*	*

It seems logical that a learner would conclude that a stem's underlying representation includes accent when that verb stem does not allow stress to shift.

I have shown that hyper-accented verbs retain their non-shifting behavior even when they are repeatedly affixed with accented prefixes. In order for the verb to maintain the default definition of the constraints, where Edgemost Right outranks *Stressed Lexical Head, it seems necessary to require some minimal internal bracketing that tells the speaker that redefinition is not allowed. The underlying representations of verb stems that are hyper-accented ((a) examples) are contrasted with their counterparts that allow stress shift in (487)-(489).

(487) a. **/taqa-tálq/** 'quickly stop' b. **/cóotalq/** 'stop with pole'

(488) a. **/'sa-k'íwk/** 'cut with blade' b. **/káak'iwk/** 'cut teeth'

(489) a. **/coola-hóɬ/** 'slip off' b. **/nkáahoɬ/** 'pull off'

I conclude that when the grammar sees that such a stem has undergone prefixation and that it has not allowed stress to shift, then the constraint hierarchy cannot be redefined for that stem.

An alternative approach would be give the power of deaccentuation to hyper-accentuated verb stems; they would be allowed to erase accents to the left. There are three problems with this analysis for hyper-accented stems.

The first problem is that it again construes what is intuitively a process of lexicalization as one of morphological production. If there is any difference between inflectional and derivational processes, it is that the latter category creates new lexical entries while the former category generally does not (there are of course irregular and suppletive inflectional forms that must be listed in the lexicon). A certain amount of liberty can be taken in creating new lexical items, including erasing accents or other features that have no realization in surface forms of that item. However, hyper-accented verb stems would have to be allowed to deaccentuate inflectional prefixes like **pée-** 'third person subject with third person object' and **nées-** 'plural object'. Assuming that deaccentuation is a byproduct of lexicalization, this would imply that these inflectional morphemes form separate lexical entries of their own with each verb stem that they combine with. However, these items are in Nez Perce among the most regular, unexceptional of morphemes.

A second problem with deaccentuation is that it does not motivate hyper-accented behavior through internal bracketing. There is no reason that a verb root could not be

deaccentuating, but none are. There is no reason why a verb stem concatenated with an accented prefix should not deaccentuate subsequent accented prefixes, but none are. I have argued that the crucial motivation of hyper-accented behavior is the learner's observation that if stress does not shift leftwards with the addition of one derivational affix, then by analogy it does not shift with subsequent concatenation with accented prefixes. The analogy is made concrete in terms of the two constraint hierarchies that the grammar may choose between.

The third argument against deaccentuation is simply that it is less concrete than an analysis of hyper-accented behavior in terms of choosing between two different hierarchies of constraints. Deaccentuation is more of an observation than an explanation. I have given an analysis that says specifically how different accented syllables win, what is the normal pattern of behavior, and when exceptions to the norm are permitted in terms of constraint re-ranking. I have linked re-ranking or the blocking of re-ranking directly to the presence of internal bracketing. In the next section, I will show that when internal bracketing is erased, a verb stem can lose its hyper-accented nature.

4.5.3.3.3. Internal bracketing and its diachronic loss

I have argued that internal bracketing must be allowed in at least two situations. In the first case, there are accented suffixes that are clearly within the morphological scope of accented prefixes (§4.5.3.3.1). Bracketing allows the suffixes to receive primary stress by Edgemost Right because they tie with the accented prefixes with respect to the

constraints *Stressed Lexical Head and CRP. In the second case (§4.5.3.3.2), hyper-accented verb stems prevent the redefinition of the constraint hierarchy to allow accented prefixes to attract stress to the left. By preventing *Stressed Lexical Head from being re-ranked above Edgemost Right, the edge constraint forces primary stress to be assigned to the rightmost accented syllable. In both cases, I have argued that while deaccentuation can be used to obtain the right results, it is not a superior analysis to one which accounts for these verbs in terms of either the redefinition of a constraint hierarchy or the blocking of such redefinition.

If deaccentuation is chosen, it must take account of internal bracketing. In an analysis of verbs that have both accented prefixes and suffixes, deaccentuation cannot be allowed to erase the accent of the suffix in (490), as I have previously demonstrated.

(490) **hinaspaynóosa**
hii-nées-[páy-nóo]-see
3-PLOB-arrive-toward-INC
'he is arriving to them'

It would have to be stipulated that deaccentuation of accented syllables could not proceed beyond the verb root. Why that should be the case is unclear.

Given the analysis in terms of constraint hierarchies, the motivation is clear. Both the prefix and suffix are outside of the lexical head. Because the status of the suffix is transparent to the grammar through the bracketing, it follows that the accented suffix has equal standing with the prefix with respect to the constraint *Stressed Lexical Head. Since they tie on that constraint, the suffix wins in terms of Edgemost Right.

In the previous section, I argued that hyper-accented verb stems prevented stress shift to an accented prefix because they retain an internal bracket that allows the grammar to see the morphological history of the word. The lack of shift in one form is generalized to subsequent forms.

The question now arises as to what should happen if the grammar can no longer see the morphological history of the word? What should happen if bracketing were lost? It follows from the previous discussion that if bracketing were lost that a hyperaccented stem should no longer behave as if it were hyperaccented. It should allow stress to shift to an accented prefix. If an accented suffix loses its stature as external to the lexical head, it should no longer attract stress, and by the constraint *Stressed Lexical Head an accented prefix should win. We should, in fact, expect internal brackets to be erased over time when their status is no longer transparent. It should be expected that hyper-accented stems and accented suffixes will eventually lose their special status. In Nez Perce, there are a few such cases.

Beginning with hyperaccented stems, I have found two examples of verbs whose hyperaccented nature has been lost. The first example is the verb 'answer' **msteqe'np**.

(491)	a.	**mìstèqe'énpse**	b.	**hinéesmìsteqè'npse**
		ms-tqe-'np-see		**hii-nées-tqe-'np-see**
		hear-quickly-take-INC		3-PLOB-hear-quickly-take-INC
		'I answer'		'he answers them'

Although this verb has suffixed two unaccented prefixes **ms-** 'hear' and **tqe-** 'quickly', it allows shift to an accented prefix (492b). The second example is the verb 'name' **we'nik**:

(492)	a.	**we'nikíse** **we-'niik-see** by.mouth-place-INC 'I am named'	b.	**hinéeswè'nìkse** **hii-nées-we-'niik-see** 3-PLOB-by.mouth-place-INC 'he names them'

Again, there is an unaccented prefix which combines with a root, but the verb is not hyper-accented.

I suggest that what has happened is that the stems have been reanalyzed without internal structure. I believe this is most likely to happen when the verb's semantics have become opaque. This is true for the two verbs in (491) and (492). The verb **mstqe'np** 'answer' is literally something like 'quickly take by hearing', and the verb **we'niik** 'name' is literally 'put in place by mouth'. Obviously, the current meanings of the verbs are related to their component parts, but the relationship is by no means straightforward. Semantic opacity may lead to reanalysis of the stem such that it is no longer taken as a complex stem, but it does not follow that every semantically opaque verb would require morphological reanalysis. These cases where apparent reanalysis has taken place are quite unusual.

The accented suffix **-úu** 'toward', combines with one verb with which it is not accented.

(493)	a.	**kúuse** **kúu-see** go-INC 'I am going'	b.	**kiyú'** **ki-ú'** go-IRR 'I will go'
(494)	a.	**kiyúuse** **ki-úu-see** go-toward-INC 'I go toward' 'I get married' (for a woman)	b.	**'ekiyúuse** **'e-ki-úu-see** 3OB-go-INC 'I go toward him' 'I marry him'
	c.	**péekiyùuse** **pee-[kiyuu]-see** 3ON3-go.toward-INC 'he is going toward him' 'she is marrying him'	d.	**hinéeskiyùuse** **hii-nées-[kiyuu]-see** 3-PLOB-go.toward-INC 'he is going toward them' 'she is marrying them' [17]

[17] Although traditionally Nez Perce men sometimes married more than one woman, women did not normally marry more than one man. However, in some traditional narratives, it occurs that a woman does so.

References

Allen, M. (1978). "Morphological Investigations," Doctoral Dissertation, University of Connecticut.

Aoki, Haruo (1962). "Nez Perce and Northern Sahaptin: A Binary Comparison," *IJAL*, 28:172-82.

Aoki, Haruo (1963a). "Reduplications in Nez Perce," *IJAL*, 29:42-44.

Aoki, Haruo (1963b). "On Sahaptian-Klamath Linguistic Affiliations," *IJAL*, 29:107-112.

Aoki, Haruo (1966a). "Nez Perce Vowel Harmony and Proto-Sahaptian Vowels," *Language*, 42:759-767.

Aoki, Haruo (1966b). "Nez Perce and Proto-Sahaptian Kinship Terms," *IJAL*, 32:357-68.

Aoki, Haruo (1968). "Toward a Typology of Vowel Harmony," *IJAL*, 34:142-145.

Aoki, Haruo (1970). *Nez Perce Grammmar*. Berkeley: University of California Press.

Aoki, Haruo (1975). "The East Plateau Linguistic Diffusion Area," *IJAL*, 41:183-99.

Aoki, Haruo (1979). *Nez Perce Texts*. Berkeley: University of California Press.

Aoki, Haruo (1994). *Nez Perce Dictionary*. Berkeley: University of California Press.

Aoki, Haruo, and Deward E. Walker (1989). *Nez Perce Oral Narratives*. Berkeley: University of California Press.

Aronoff, Mark (1976). *Word Formation in Generative Grammar*. MIT Press.

Beckman, Mary, and Jan Edwards (1990). "The Articulatory Kinematics of Accent." Abstract in *Journal of the Acoustical Society of America*, Suppl. 1, 87:S65.

Beckman, Mary, and Jan Edwards (1993). "Articulatory Evidence for Differentiating Stress Categories." In Keating, Patricia, ed., *Papers in Laboratory Phonology III*. Cambridge: Cambridge University Press.

Bloomfield, Leonard (1933; reprinted 1984). *Language*. Chicago: University of Chicago Press.

Casali, R. (1996) "Resolving Hiatus," Doctoral Dissertation, UCLA.

Chomsky, Noam, and Morris Halle (1968). *The Sound Pattern of English.* New York: Harper and Row.

Chung, Sandra (1983). "Transderivational Relationships in Chamorro," *Language,* 59:1, 35-66.

Crook, Harold (1995). "On Nez Perce Nouns with Irregular Metrical Behavior or 'Why "Grizzly Bear" has Horrible Stress," in *Survey of California and Other Indian Languages: Report 9, Proceedings of the Hokan-Penutian Conference.*

Czaykowska-Higgins, E. (1991). "Cyclicity and Stress in Moses-Columbian Salish," ms., University of British Columbia.

Dixon, R.M.W. (1994). *Ergativity: Cambridge Studies in Linguistics 69.* Cambridge: Cambridge University Press.

Gordon, Lynn (1986). "Nez Perce Relative Clauses," ms., Washington State University.

Hayes, Bruce (1995). *Metrical Stress Theory: Principles and Case Studies.* Chicago: University of Chicago Press.

Hall, Beatrice L. and R.H.R. Hall (1977). "Nez Perce Vowel Harmony: An Africanist Explanation and Some Theoretical Questions," in Robert M. Vago, ed., *Issues in Vowel Harmony, Studies in Language, Companion Series 6.* Amsterdam: John Benjamins.

Hoard, James (1978). "Syllabification in Northwest Indian Languages, with remarks on the nature of syllabic stops and affricates," in A.Bell and J.B. Hooper, eds., *Syllables and Segments.* North-Holland Publishing Company.

Hunn, Eugene S. (1990). *Nch'I-Wana, The Big River.* Seattle: University of Washington Press.

Hyman, L. ed. (1977). *Studies in Stress and Accent*, Southern California Occasional Papers in Linguistics 4, Department of Linguistics, University of Southern California, Los Angeles, CA.

Jacobsen, William H. (1968). "On the History of Nez Perce Vowel Harmony," *Language* 44: 819-29.

Kager, René (1989). *A Metrical Theory of Stressing and Destressing in English and Dutch,* Linguistics Models 14. Dordrecht: Foris.

Kager, René (to appear 1999), London: Blackwell.

Kiparsky, Paul (1968). "How Abstract is Phonology", ms.

Kiparsky, Paul (1985). "Some consequences of Lexical Phonology" in *Phonology Yearbook 2*: 83-138.

Kiparsky and Halle's (1977). "Towards a Reconstruction of the Indo-European Accent," in Larry M. Hyman, ed., *Studies in Stress and Accent: Southern California Occasional Papers in Linguistics, 4.* Los Angeles: Department of Linguistics, University of Southern California.

Kirchner, R. (1993) "Turkish Vowel Harmony and Disharmony: an Optimality Theoretic Account," paper presented at Rutgers Optimality Workshop I.

Kirchner, R. (1998) "An Effort-Based Approach to Consonant Lenition," Doctoral Dissertation, UCLA.

Ladefoged, Peter (1982). *A Course in Phonetics.* Harcourt, Brace, Jovanovich Publishers.

Laver, John (1994). *Principles of Phonetics.* Cambridge: Cambridge University Press.

Liberman, Mark, and Alan Prince (1977). "On Stress and Linguistic Rhythm," *Linguistic Inquiry* 8, 249-336.

McCarthy, John J., and Alan Prince (1995). "Faithfulness and Reduplicative Identity," in Beckman, Dickey & Urbanczyk. GLSA Papers in Optimality Theory University of Massachusetts, Amherst.

McCarthy, John J., and Alan Prince (1993). "Prosodic Morphology I." ms., University of Massachusetts, Amherst.

Morvillo, Anthony (1895). *A Dictionary of the Numipu or Nez Perce Language.* St. Ignatius Mission, Montana: St. Ignatius Mission Press.

Phinney, Archie (1934). *Nez Perce Texts.* New York: University of Columbia Press.

Powell, J.W. (1891). *Indian Linguistic Families of America North of Mexico.* Seventh Annual Report, Bureau of American Ethnology, 1-142.

Prince, Alan (1991). "Quantitative Consequences of Rhythmic Organization," in Karen Deaton, Manuela Noske, and Michael Ziolkowski, eds., *CLS 26-II: Papers from the Parasession on the Syllable in Phonetics and Phonology,* Chicago Linguistic Society, Chicago.

Prince, Alan, and Paul Smolensky (1993). "Optimality Theory: Constraint Interaction in Generative Grammar." ms., Rutgers University.

Pulleyblank, Douglas. 1986. "Underspecification and Low Vowel Harmony in Okpe", *Studies in African Linguistics* 17:119-153.

Rigsby, Bruce J. (1965). "Continuity and Change in Sahaptian Vowel Systems," *IJAL,* 31:306-11.

Rigsby, Bruce J. (1966). "The Waiilatpuan Problem: More on Cayuse-Molala Relatability," *Northwest Anthropological Research Notes*, Vol. 3, No. 1.

Rigsby, Bruce J., and Michael Silverstein (1969). "Nez Perce Vowels and Proto-Sahaptian Vowel Harmony," *Language,* 45:45-59.

Saltzman, E.L. and K.G. Munhall (1990). "A Dynamic Approach to Gestural Patterning in Speech Production." *Ecological Psychology,* 1:333-392.

Sapir, Edward (1929). "Central and North American Languages," *Encyclopaedia Britannica, 14th Edition*, Vol. 5, 138-41.

Spalding, Henry H. (1840). *Nimipuain Shapahitamanash Timash: Primer in the Nez Percé Language.* Lapwai, Idaho.

Spalding, Henry H. (1845). *Matthewnim Taaiskt: Gospel of Matthew in the Nez Perce Language.* Clearwater, Idaho.

Rude, Noel (1985). *Studies in Nez Perce Grammar and Discourse.* Doctoral Dissertation, University of Oregon, Eugene.

Rude, Noel (1986a). "Topicality and the Direct object in Nez Perce," *IJAL*, 52:124-53.

Rude, Noel (1986b). "Discourse-Pragmatic Context for Genitive Promotion in Nez Perce," *Studies in Language*, 10:109-36.

Rude, Noel (1987). "Some Sahaptian-Klamath Linguistic Correspondences," *Kansas Working Papers in Linguistics*, 12:67-83.

Rude, Noel (1988a). "Ergative, Passive, and Antipassive in Nez Perce: A Discourse Perspective," in Masayoshi Shibatani, ed., *Typological Studies in Language, 16.* Amsterdam: John Benjamins.

Rude, Noel (1988b). "Semantic and Pragmatic Objects in Klamath," in William Shipley, ed., *In Honor of Mary Haas: From the Haas Festival Conference on Native American Linguistics.* Berlin: Mouton de Gruyter.

Rude, Noel (1991). "On the Origin of the Nez Perce Ergative NP Suffix," *IJAL,* 57:24-50.

Silverstein, Michael (1979). "Penutian: An Assessment," in Lyle Campbell and Marianne Mithun, eds., *The Languages Of Native America: Historical and Comparative Assessment.* Austin: Uiversity of Texas Press.

Sproat, Richard (1993). "Looking into Words," in Sharon Hargus and Ellen M. Kaisse eds. *Phonetics and Phonology 4: Studies in Lexical Phonology.* Academic Press.

Steriade, Donca (1996). "Paradigmatic relations in reduplication" Seminar notes, UCLA.

Thompson, Laurence C. (1973). "The Northwest," in Thomas Sebeok, ed., *Current Trends in Linguistics,* Vol. 10. The Hague: Mouton de Gruyter.

Vanderslice, Ralph and Peter Ladefoged (1972). "Binary suprasegmental features and transformational word-accentuation rules," *Language,* 48:4, 819-838.

Zimmer, Karl E. (1967). "A Note on Vowel Harmony," *IJAL,* 33:166-70.

Zwicky, Arnold M. (1971). "More on Nez Perce: Alternative Analyses," *IJAL,* 37:122-5.