Chapter 1

Introduction

This dissertation explores the phenomenon of Nêhiywêwin, also known as Plains Cree, Order. Nêhiywêwin, like all Algonquian languages, is a polysynthetic language with rich a morphological system. The most striking system in Algonquian verbs morphology, apart from perhaps the language's hierarchical/direct-inverse alignment (Wolvengrey, 2011, 53), is the system of Order. Order is instantiated on verbs through a system of allomorphy of the polypersonal argument morphs. While other Algonquian languages differ in their number of Orders, Nêhiywêwin has three recognized Orders: the Imperative, the Independent, and the Conjunct. The function of Order has been discussed in the literature, most comprehensively by Wolfart (1973) and Cook (2014). The latter resource is most comprehensive, though it generally focuses only on the difference between the Independent and the Conjunct Orders, placing aside the Imperative Order. This is, in my opinion, valid, but unmotivated in Cook (2014, 11) who justifies her decision as 'There is a third paradigm: the imperative order. The imperative order cannot host most agreement, any of the elements on the far left edge, or most of the preverbs. I will not discuss it further.' Put simply, Cook (2014) proposes that the phenomenon of Order is one of clause typing, specifically in the difference between Indexical (not having a prior referent) and Anaphoric (having a prior referent) clauses. This conclusion was

come to after careful hand-analysis of a Nêhiyawêwin corpus. Although I agree with many of the conclusions put forth by Cook (2014), the orientation of this research is decidedly theoretical.

This dissertation will approach the purpose and function on Nêhiyawêwin from a systematic and empirical perspective. Using a corpus (including, in part, all of the texts used by Cook (2014)) and modern computational techniques, this dissertation attempts to uncover the motivations in the choice to use one Order over another. This research is undertaken through the lens of *alternation*. The primary method of analysis this dissertation relies on is mixed-effects logistic regression, based on and building upon the work of Arppe (2008); Deshors (2016); Divjak and Gries (2006); Klavan (2020). By framing Order as a system of alternation, mixed-effects logistic regression allows for the creation of a predictive model, where each of the predictor variables can be evaluated for their effect on the outcome of the alternation. Three types of alternations are investigated: Independent vs. Conjunct (the most straightforward alternation in terms of previous description of Order), Independent vs. ê-Conjunct (the most straightforward alternation in term of near-synonymy (Cruse, 2000, 157-159)), and the alternation of the various Conjunct types (a more straightforwardly semantic alternation).

Chapter 2 provides a background on Nêhiyawêwin, Order, and the use of alternation in linguistic investigation. This chapter also provides a detailed discussion regarding the nature of Order as an alternation, how this outlook can be used to study the phenomenon, and a detailed justification for ignoring the Imperative mood beyond methodological opportunism.

Next, Chapter 3 presents a study in semi-automatically clustering verbs together for the purposes of predictor generation for the logistic modelling at the centre of this dissertation. This chapter focuses on how one can use pre-existing majority language data to bootstrap the creation of an ontology for lemmas in a minority language, Nêhiyawêwin. The result of this research, a semantic class for every verb in a dictionary (Wolvengrey,

2001), was used as the main semantic effects in the main statistical modeling of this dissertation. Earlier versions of this research were published in Harrigan and Arppe (2021) and Harrigan and Arppe (2023).

Following the chapter of semantic classification, Chapter 4 describes and justifies the particular methodologies in statistical modelling. This chapter also details the morphosyntactically tagged corpus that is being used, and the ways in which this corpus has been construed as a data set. The main research questions driving this analysis are:

1. Can mixed effects modelling be used in investigating complex morphological phenomenon using a small but richly tagged corpus?

2. Are the alternations between the Independent and Conjunct, the Independent and the ê-Conjunct, and the Conjunct types similarly able to be modelled, or are some of these alternations easier to model than others?

3. What are the variables that increase the likelihood that a lemma will occur in a particular Order/outcome?

Chapter 5 presents the results the statistical modelling in three stages: univariate, bivariate, and multivariate. As the latter is of primary interest for this dissertation, it is discussed most in depth. The following chapter, Chapter 6, discusses in depth the multivariate results. This includes not only a discussion of what this means in the general sense of Order as well as how the results frame each outcome, but also how well the statistical modelling performed and what this overall success or failure can tell us about alternations and Order more generally. Finally, Chapter 7 provides a conclusion to this dissertation.

Code used for the analyses presented in this dissertation is available publicly at https://github.com/atticusha/DissertationCode. Although the code functions, the underlying corpus that is analyzed is not able to shared publicly. Should researchers desire access to the corpus, they can contact Dr. Antti Arppe at the University of Alberta.

Chapter 2

Background

Nêhiyawêwin (ᓀᐦᐃᔭᐍᐎᐣ ISO 639-3: CRK, also known as Plains Cree) is a member of the Algonquian language family, one of the major language families of North America, spoken across much of Canada and the eastern United States. Nêhiyawêwin is part of two major dialect continua: the Cree-Montagnais-Naskapi languages, which stretch mainly from Alberta to Quebec and Labrador, and the central Canadian Ojibwe-Cree continuum, which occur in central Canada and the Northern United States. [1]

Nêhiyawêwin is the westernmost member of the Cree-Montagnais-Naskapi continuum and is mostly spoken in Alberta, Saskatchewan, and northern Montana. There is said to be approximately 34,000 speakers of Nêhiyawêwin (Ethnologue, 2016), most over the age of 30. This number is likely overestimated, though a previous account by Ethnologue was dubious, with a number of roughly 150. Statistics Canada (2016) reports

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[1]The languages/dialects of Cree-Montagnais-Naskapi continuum share many similarities, as can be seen in the following words for 'person', where the reflexes of Proto-Algonquian *l* are given in boldface. The dialects are given in roughly west to east geographical distribution:

(1) Plains: *iyiniw*
Woods: *ithiniw*
Swampy: *ininiw*
Moose: *ililiw*
Atikamekw: *iriniw*
Ojibwe: inini East: *iyiyiw/iyiyû/iyinû*
Naskapi: *iyiyû*
Innu: *ilnu/innu*

3,655 native speakers of 'Plains Cree,' though this number may be higher if respondents reported their native language as 'Cree,' rather than 'Plains Cree.' Wolfart (1973) estimated 20,000 speakers, though the number has likely dropped since then. Although any of these numbers is dwarfed by the number of speakers of majority languages in Canada, Nêhiyawêwin retains a strong presence, particularly for an Indigenous North American language, holding a classification of 5 (Developing) on the Extended Graded Intergenerational Disruption Scale (EGIDS) (Ethnologue, 2016), a system for assessing language vitality based on domains of use, intergenerational transmission, and other sociolinguistic factors (Lewis and Simons, 2012). With its comparatively large speaker base, Nêhiyawêwin has garnered attention from a variety of Americanists, in the form of grammars (e.g. Wolfart 1973, Dahlstrom 2014, Wolvengrey 2011), textbooks (e.g. Okimāsis 2018; Ratt 2016) and an online electronic dictionary (itwêwina[2]).

2.1 Nouns

Nêhiyawêwin exhibits a number of morphosyntactic features that differ considerably from the well-known characteristics of often discussed Indo-European languages. Unlike sex-based gender systems such as those found in many contemporary romance languages, Algonquian languages have a two-way gender or noun classification system contrasting Inanimate with Animate nouns; this grammatical animacy has some basis in semantic animacy: all humans, animals, and trees are Animate. This distinction is not clear-cut though, as *êmihkwân*, 'spoon', *sîwinikan*, 'sugar', and *sêhkêpayîs*, 'automobile' are Animate,[3] and thus the system is considered one of grammatical classification. Notably there are few-to-no examples of clearly alive animals that are grammatically Inanimate. Animacy is relevant to nominal and verbal morphology in Nêhiyawêwin

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[2]http:/itwewina.altlab.app

[3]It is worth noting that animacy is not always consistent across dialects of Cree, or even communities of Nêhiyawêwin. Some words, such as *sîwinikan* 'sugar', are Animate in some dialects and Inanimate in others.

in various ways. Among nouns, this animacy distinction is manifested in two distinct plural markers, {-ak} for Animate and {-a} for Inanimate nouns; archaic singular marking is seen for monosyllabic roots, for example *maskw-a* 'bear (ANIM)' and *wâw-i* 'egg (INANIM)'. Nêhiyawêwin has no grammatical case system, but it does have locative marking, generally *-ihk* for Inanimate nouns (Wolfart, 1973, 1996), with human/animal Animate nouns often not being locativized.

Nêhiyawêwin is a head-marking language, and so the person and number of the possessor is marked on the possessum. Singular possessors are marked only with prefixes: {ni-} for first person, {ki-} for second person, and {o-} for third person. For plural possessors, circumfixes are used: the prefixes are the same as for singular persons, which are matched with a set of suffixes: {ni- -(i)nân} for first person plural exclusive ('ours but not yours'), {ki- -(i)naw} for first person plural inclusive ('mine/ours and yours'), {ki- -(i)wâw} for second person plural ('yours but not ours'), and {o- -(i)wâw} for third person plural. Nêhiyawêwin also distinguishes between alienable and inalienable nouns; the latter category must occur with possession and includes kinship terms and body parts as well as some other intimate possessions or relationships, such as *nôhkom* 'my grandmother' versus **ôhkom* 'grandmother' (Wolfart, 1973, 1996; Wolvengrey, 2011). Some nouns, particularly body parts, are inalienable and may be possessed by a general possessor, as in *mitâs*, '(someone's) pants'.

Within Animate nouns, a pragmatic distinction is made regarding the topicality of a noun when used in the third person. All Animate nouns can occur as either proximate third person (more topical entity in a discourse) and the obviative third person (less topical entity or entities in the discourse). This distinction occurs any time more than one Animate third person occurs in a discourse, such as when one third person Animate entity acts on another or when a third person Animate entity possesses another, as in (1). An obviative Animate noun is marked with the obviative suffix {-a} and no number distinction is made; this is conventionally marked with 3′ (or as the '4th person', with no

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number distinction; in this dissertation it will be indicated by OBV in glosses). The further obviative, which occurs when two obviative entities occur in one discourse, necessitating the demotion of one of them, is by convention marked with 3″ (or as the '5th person', also with no number distinction; in this dissertation it will be indicated by FUROBV). As obviation is based in topicality rather than syntactic roles, it is generally not considered a marker of case. This is further exemplified with respect to verbal constructions below.

(1) atim   nâpêw-a tahkwam-ê-w
     dog.PROX man-OBV bite-DIR.THM-3SG.OBV

     'the (proximate) dog bites the (obviative) man.'

2.2 Verbs

Cree verbs are traditionally classified according to both their transitivity and the animacy of their arguments/participants. There are two classes of intransitive verbs, which can occur with one Inanimate participant (VII—Verb Inanimate Intransitive) or one Animate participant (VAI—Verb Animate Intransitive). The former includes impersonal verbs such as weather terms and stative verbs used attributively to describe Inanimate objects, and the latter includes intransitive actions and attributive verbs used to describe Animate objects (Bloomfield, 1946; Okimāsis, 2018; Wolfart, 1973, 1996). The VII and VAI classes are exemplified in (2) and (3) respectively.

(2) VII

    a. wâpiskâ-w
       be.white-3SG

       'it is white'

    b. astotin wâpiskâ-w
       hat   be.white-3SG

       'the hat (Inanimate) is white'

(3) VAI

a. wâpiskisi-w
be.white-3SG

's/he (animate) is white'

b. mîciso-w
eat-3SG

's/he eats, has a meal'

Similarly, there are two classes of transitive verbs, though these are distinguished by the animacy of their second participant, often considered the object: transitive Inanimate verbs (VTI) with an Animate subject and an Inanimate object, and transitive Animate verbs (VTA) with two Animate arguments.[4] Examples are given in (4) and (5); note that there are three different verbs for 'eat' depending on the transitivity and the animacy of participants.

(4) VTI

mîci-w
eat-3SG

's/he eats it (Inanimate)'

(5) VTA

mow-ê-w
eat-DIR.THM-3SG.ACTOR.OBVGOAL

's/he eats it/him (animate)'

As noted above, Nêhiyawêwin does not have a case system to determine syntactic roles. Nouns exhibit obviation, a system in which non-focal, Animate, third persons

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are marked (Bloomfield, 1946, 94). Together with the directionality system, discussed below, semantic roles are determined through relationships between items rather than simple case marking.

Verbs agree with arguments according to animacy: Inanimate actors for VII and Animate actors for VAI, VTI, and VTA. The Inanimate participant in a clause containing a VTI is the goal of the verb, or some other oblique argument, but not the actor. The person marking on VII, VAI, and VTI verbs corresponds to the person and number of the actor. However, in VTAs, both arguments are Animate and realized in the verbal morphology, with their respective roles determined by obviation and direction morphology, discussed below. Essentially, verbs and their arguments can be thought of as constructions where certain verb stems license a certain number of arguments of particular animacy.

To determine the roles of participants in VTA clauses, Algonquian languages make use of a direct-inverse system (Jacques and Antonov, 2014; Wolfart, 1973). VTAs occur with two Animate participants and there is no grammatical case or fixed word order by which to determine the semantic roles. Instead, direction is used as a method of determining which argument is the actor and which is the goal. In Nêhiyawêwin, direction is determined by the relative topicality of participants, extended beyond the proximate-obviative distinction into a full hierarchy known as the Algonquian person hierarchy, given in (6) (Jolley, 1983). Direction is indicated by a theme morpheme, which indicates that the action is either *direct* or *inverse*. When a more topical participant acts on a less topical participant, the morphology or theme sign is direct (*-â-*, *-ê-*, *-i-*). When the opposite occurs, the morphology or theme sign is inverse (*-ik(w/o)-*, *-iti-*). As visualized in (6), second person is ranked topically above first person, and both of these speech act participants are ranked above all third or unspecified[5] persons, wherein obviation applies. Due to this hierarchy, first person acting on second necessarily always occurs with inverse morphology. In this way, these are not passive forms, but

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[5]In Nêhiyawêwin, the Unspecified Actor is an actor on a verb where the exact person and number of the actor is not specified. It may be translated as a sort of agentless passive (Wolvengrey, 2011).

simply the only way of indicating first person acting on second. For this and a variety of other reasons not discussed herein, Nêhiyawêwin inverse forms are not considered equivalent to passive voice in languages such as English (Dahlstrom, 2014; Wolfart, 1973; Wolvengrey, 2011).

(6) 2 > 1 > Unspecified Actor > 3 > 3′ > 3″

   With obviation marked on both nouns and verbs, sentences such as those in (7)a. are possible in Nêhiyawêwin. Additionally, both obviative and further obviative marking may be needed, depending on the number of third persons lexically specified, as in (7)b. However, when a Nêhiyawêwin VTI is involved, and so there is an Inanimate goal rather than an Animate one, no goal or obviative marking occurs on either the verb, or the Inanimate noun, as in (8) (Wolfart, 1973; Wolvengrey, 2011).

(7) VTA

   a. cân   pahkwêsikan-a   mow-ê-w
      John.3sg bread.NA-OBV   eat.VTA-THM.DIR-3SG.OBV

      'John eats bread (animate).'

   b. cân   o-têm-a   oskâtâskw-a   mow-ê-yiwa
      John.3sg 3.POSS-dog.NA-OBV carrot.NA-FUROBV   eat.VTA-THM.DIR-3′.FUROBV

      'John's (3sg) dog (OBV) eats a carrot (animate, FUROBV).'[6]

(8) VTI

   a. cân   wiyâs   mîci-w
      John.3sg meat.NI eat.VTI-3SG

      'John eats meat (Inanimate).'

   The {-w} in (8) is one of two third person suffixes in the VTIs, the other being {-Ø}. This morph is homophonous with third person markers in other conjugation classes. Alongside extensive person and direction morphology, several other categories may also

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[6]As the marking for obviative and further obviative is formally the same, they must instead be distinguished on the basis of semantics and pragmatics.

be expressed on verbs.[7] Preverbs attach to the verb between person and the verb stem and serve several purposes. There are two types of preverbs: grammatical and lexical. The outermost of grammatical preverbs include those such as {ê-} and other Conjunct preverbs including {ka-}/{ta-}[8], and {kâ-}. While most preverbs are relatively freely combineable, these three are mutually exclusive. These morphs serve as complementizers and may have further functions, such as marking future or relative clauses. Closer to the verbal stem, one can observe another type of grammatical preverb for tense and aspect: {kî-} for past, {wî-} for prospective future, and {ka-/ta}- for definite future. Closer still to the verb are lexical preverbs, e.g., {kakwê-} 'try (to)', {nihtâ-} 'be good at', {nitawi-} 'go and (do something)', {âpihtâ-} 'half (of)/halfway', {kihci-} 'large', etc. (Wolfart, 1973, 1996; Wolvengrey, 2001), though even these show a gradience in lexicality/grammaticality.

2.3   Nêhiyawêwin Order

Algonquian languages are noted for their unique system of what is called Order, most easily recognized through allomorphy instantiated on the person-marking affixes of verbs. According to Bloomfield (1946, 97):

> The forms of the verb fall into five orders. Each order consists of one or more modes, each with a full set of forms. The Independent order takes prefixes; its principal mode, however, the indicative, has zero instead of *we-* for the third person. The other orders take no prefixes. The imperative has forms for second person actor only, and only one mode. The prohibitive has two modes with the same restriction, but also a third mode, the potential, with a full set of forms. The conjunct and interrogative orders are used only in subordinate clauses and as participles. The languages differ widely in their stock of modal forms; all seem to have lost a few, and some languages have created new ones.

The Orders described by Bloomfield are mutually exclusive. One can not have the morphology for both the Independent and the Conjunct, for example. For this reason, it

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[7]For a large (though not yet complete) overview of Nêhiyawêwin morphemes (including common preverbs) see Cook and Muehlbauer (2010).

[8]This is a single morpheme that contains two allomorphs that are used in free variation. In central and southern Alberta, {ka-} is the more common form

seems obvious to group the mutually exclusive orders as a cohesive unit. As alluded to by Bloomfield, some Algonquian languages have fewer than five orders. Nêhiyawêwin is one of these languages, usually regarded as having only three orders: the Imperative, the Independent and the Conjunct. Despite the centrality of Order to the use of verbs, descriptions of the system as a whole remain vague for Nêhiyawêwin. Sometimes, Order is treated as a semantic alternation: the Imperative Order marks the imperative mood, while the Independent and Conjunct do not correspond to any specific mood. However, there is no such distinction between the Independent and Conjunct Orders. Instead, these Orders are usually analyzed through their morphological difference.

I argue that Order, can be analyzed as an alternation. I suggest that Order as currently described is essentially two overlapping linguistic systems: one of mood/aspect and one of morphology that corresponds to a type of semantic alternation previously undescribed: a paradigmatic alternation. To support this proposal, I will detail the morphological, syntactic, and semantic/pragmatic ways in which Order is used and defined, and the ways in which these definitions are inadequate.

2.3.1 Morphology

Speaking strictly in terms of structural/morphological phenomena, the different Orders of Nêhiyawêwin can be divided into three main types: the Independent, the Conjunct, and the Imperative. The Independent is comprised of those forms which mark for any person argument and take a person prefix ({ni-} for first person, {ki-} for second, and no prefix for third person) and a set of suffixes (Bloomfield, 1946; Wolfart, 1973). The Conjunct is comprised of forms that also mark for any argument and which take no person prefix and one of a number of conjunct suffixes. The Imperative, on the other hand, marks for only second person arguments, cannot be used without a second person argument, does not make use of person prefixes, and uses a unique set of suffixes as compared to the Independent or Conjunct. Treating these Orders as of the same type due to their mutual

exclusivity, as done by Bloomfield (1946), results in a system depicted in Figure 2.1.
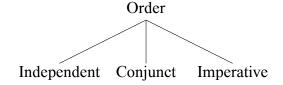
Order

Independent   Conjunct   Imperative

Figure 2.1: Order Ontology based on Morphology

This ontology, however, fails to capture a clear distinction of the Imperative from the Independent and the Conjunct. In a strictly structural sense, the shape of the Independent and Conjunct paradigms are similar to each other, while the Imperative's diverges from this standard substantially. To demonstrate and describe these differences, the structural makeup of the three canonical orders will be described below.

The Independent Order

According to Wolfart, the Independent order comes in two main forms: the preterit and non-preterit (1973). Preterit forms can be thought of as past-perfect constructions; conversely, the non-preterit form is essentially equivalent to the traditionally described indicative (Wolfart, 1973). Wolfart spends much of his description discussing the preterit forms of the Independent order, explaining the three types of preterit Independents. Since Wolfart's publication these preterit forms have largely fallen out of use in Nêhiyawêwin (Wolvengrey, 2011, 74) and so will not be further discussed. As previously mentioned, the Independent is identified by Bloomfield (1946), Wolfart (1973), and Cook (2014) as the Order that marks for all possible persons with the person prefixes {ni-} and {ki-} for first and second persons, respectively, and the lack of an prefix for the third and obviative persons. Independent forms are unable to take the {ê-} preverb (discussed later) which has begun to function primarily as a marker of Conjunct constructions.

Table 2.1 describes the Independent VII paradigm. Notice that only third person (and obviative) participants exist in this paradigm, and so no speech act participant prefix or suffixes are used. These along with the final column, the additional third person obviative

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Table 2.1: VII Independent Paradigm. Based on Wolvengrey (2011, 413).

	Prefix	Stem	Theme	SAP Person	Obviative	3sg	3pl	3'
3sg		mihkwâ				w		
3pl		mihkwâ				w	a	
3'sg		mihkwâ			yi	w		
3'pl		mihkwâ			yi	w	a	

Table 2.2: *VTA Independent Direct, Mixed Participant Paradigm Excerpt. Based on Wolvengrey (2011, 418).*

	Prefix	Stem	Theme	SAP Person	Obviative	3sg	3pl	3'
1	ni	wâpam	â				w	ak
2sg	ki	wâpam	â				w	ak
1pl	ni	wâpam	â	nân				ak
21pl	ki	wâpam	â	naw				ak
2pl	ki	wâpam	â	wâw				ak
3sg		wâpam	ê			w		
3pl		wâpam	ê			w	ak	
3'		wâpam	ê		yi	w		a

suffix, are unused but included to maintain consistency with the VAI, VTI, and VTA paradigms.

The VTA paradigms are further split. Here, a distinction is made between the *local* and *mixed* subsets. A *local* VTA subparadigm is one where the actor and the goal are both speech act participants (first or second persons), while the *mixed* subparadigm contains interactions between speech act participants and third or obviative persons. This subparadigm also contains third persons acting on obviative persons. This is presented in this way for the sake of convenience. In reality, one could place these non-speech act participant forms in their own sub-paradigm.

As seen in Tables 2.3 and 2.4, the paradigms of the VAI and VTI are extremely similar, differing in their inclusion of a theme sign.[9]

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[9]Theme is used in the sense of traditional grammars, such as Goodwin (2002), where the theme sign is used to associate a stem with a particular paradigmatic shape.

[10]This represents the first person inclusive actor. In Algonquian linguistics, this is often considered as a second person form due to its morphology and its marking with the second person {ki-} prefix in the Independent.

Table 2.3: VAI Independent Paradigm. Based on Wolvengrey (2011, 415).

	Prefix	Stem	Theme	SAP Person	Obviative	3SG	3PL	3'
1SG	ni	nipâ		n				
2SG	ki	nipâ		n				
1PL	ni	nipâ		nân				
21PL[10]	ki	nipâ		(nâ)naw				
2PL	ki	nipâ		nâwâw				
3SG		nipâ				w		
3PL		nipâ				w	ak	
3'		nipâ			yi	w		a

Table 2.4: VTI Independent Paradigm. Based on Wolvengrey (2011, 417). Note the difference of theme sign for local and non-local participants.

	Prefix	Stem	Theme	SAP Person	Obviative	3SG	3PL	3'
1SG	ni	wâpaht	ê	n				
2SG	ki	wâpaht	ê	n				
1PL	ni	wâpaht	ê	nân				
21PL	ki	wâpaht	ê	naw				
2PL	ki	wâpaht	ê	wâw				
3SG		wâpaht	am			(w)		
3PL		wâpaht	am			w	ak	
3'		wâpaht	am		(i)yi	w		a

In fact, there are some VAIs, like *âsokâham*, 's/he swims across' that follow the general VTI paradigm and takes the {-am} theme sign; conversely, some VTIs like *kâtâw*, 'S/he hides something,' take VAI morphology and follow the VAI paradigm. This has lead to an alternative interpretation of verb conjugation proposed by Wolvengrey (2011). Here, there is a three-way distinction between verbs, based solely on the number of Animate participants: *V0* containing any verb forms with no Animate participants (corresponding to VII), *V1* containing verbs with only one Animate participant (corresponding to VAI and VTI), and *V2* containing verbs with two Animate participants (corresponding to VTA).

Tables 2.2 and 2.5 through 2.7 gives a subset of an Independent VTA paradigm,[11]

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[11]There are 36 person combinations in each of the Independent and Conjunct Orders.

Table 2.5: VTA Independent Direct, Local Paradigm Excerpt. Adapted from Wolvengrey (*2011, 418*).

	Prefix	Stem	Theme	1SG	1PL	2PL
2SG	ki	wâpam	i	n		
2SG/PL	ki	wâpam	i	n	ân	
2PL	ki	wâpam	i			nâwâw

Table 2.6: VTA Independent Inverse, Mixed Participant Paradigm Excerpt. Wolvengrey (*2011, 418*).

	Prefix	Stem	Theme	SAP Person	Obviative	3rd Person	3PL	3'
1	ni	wâpam	ik(w)			w	ak	
2	ki	wâpam	ik(w)			w	ak	
1PL	ni	wâpam	ikw	inân			ak	
21PL	ki	wâpam	ikw	inaw			ak	
2PL	ki	wâpam	ikw	iwâw			ak	
3		wâpam	ik(w)			w		
3PL		wâpam	ik(w)			w	ak	
3'		wâpam	ikw		yi	w		a

exemplifying direct and inverse forms for different pairs of participants for the VTA *wâpamêw* 's/he (animate) sees someone (animate)'. The person prefixes, and often the suffixes, remain the same while the direction morphology changes (note that some dialects allow for third person inverse forms with {-ikow} endings instead of {-ik}[12].). While the VTA Independent forms are decomposible, the Conjunct forms are not always so predictable.

Table 2.7: VTA Independent Inverse, Local Paradigm Excerpt. Based on Wolvengrey (*2011, 418*).

	Prefix	Stem	Theme	1SG/PL	2PL
2SG	ki	wâpam	iti	n	
2SG/PL	ki	wâpam	iti	nân	
2PL	ki	wâpam	iti		nâwâw

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[12]Note that the{iko} morph derives from the {ikw} morpheme along with an epenthetic /i/, the combination of which produces /iko/

Table 2.8: Wolfart's Conjunct modes. Adapted from Wolfart (*1973, 45*)

		Initial Change	
		+	-
/ih/	+	Iterative ('whenever it is')	Subjunctive ('if it be')
	-	Changed ('it being')	Simple ('that it is')

The Conjunct Order

Wolfart (1973) described four modes of the Conjunct, based on the presence or absence of the verb-final suffix {-ih} and the presence or absence of 'initial change' (an Algonquian process where the first vowel in the verb stem (or sometimes verbal prefixes) is mutated—abbreviated IC) (Wolfart, 1973). According to Wolfart those Conjunct verbs with both {-ih} and Initial Change are iterative and are named by him as such. Those without Initial Change but with {-ih} impart conditionality and are what Wolfart terms the *subjunctive*. Verbs with Initial Change but without {-ih} are simply called *Changed* and are the most commonly used Conjunct form, though Wolfart notes that Initial Change is beginning to fall out of use, being replaced instead by the use of the {ê-} preverb (1973). This view is consistent with that of Wolvengrey's account of {ê-} being born out of a regularization of a particular type of change, /i/ > /ê/, where the changed vowel was extracted from the construction to be used as a preverb, the verb stem retaining its original form (e.g., *itwêt > êtwêt > ê-itwêt*) (A. Wolvengrey, Personal Communication). Finally, those verbs without Initial Change or {-ih} are referred to as *simple* (Wolfart, 1973). A summary of this four way distinction is found in Table 2.8. In more contemporary Nêhiyawêwin orthography, the -ih ending is realized simply as a suffixal {-i}.

Cook (2014) provides further detail on the morphosyntactic and semantic behaviour of the Conjunct order. Agreeing with Wolfart (1973), Cook explains the wide spread use of the order through several modes of the Conjunct. Unlike Wolfart's tetrachotamy, Cook gives a pentachotomy (2014). Under Cook's system, the Conjunct is split into the

Table 2.9: Cook's Conjunct modes. Adapted from Cook (2014, 125)

Submode	Subtype	Form	Gloss
Changed	Changed Conjunct$_1$	ê-apiyân	'I sleep'
	Changed Conjunct$_2$	kâ-apiyân	'When I sleep'
	Iterative	êpiyâni	'Whenever I sleep'
Unchanged	Simple	ka-apiyân	'for him to eat'
	Subjunctive	apiyâni	'whenever I eat'

Changed and *Unchanged* modes (2014). The Changed Conjunct is further split into three subtypes: the *Changed Conjunct$_1$*, the *Changed Conjunct$_2$*, and the *Iterative Changed Conjunct*[13]. Although three subtypes are titled *Changed* due to being historically derived from changed forms, only the Iterative currently exhibits Initial Change. Changed$_1$ and Changed$_2$ on the other hand, are marked with the {ê-} and {kâ-} preverbs respectively [14]. The unchanged Conjunct forms are split into the *Subjunctive Simple Conjunct*, which are marked with no preverb and no Initial Change (but instead with a -i suffix appended to the person endings), and the *Irrealis Simple Conjunct*, which is marked with the {ka-} preverb. These forms are represented in Table 2.9.[15]

The following paradigms demonstrate the general shape of the Conjunct paradigm and represent the ê-Conjunct forms for the VII, VAI, VTI, and VTA conjunct classes.

As with the Independent paradigm, the VII Conjunct paradigm marks only for the third and obviative persons, as in Table 2.10.

Similar to the Independent, the Conjunct's VAI and VTI paradigms are strikingly similar. The main difference is the inclusion of an epenthetic /y/ in the SAP Person endings for the VAI paradigm, as well as the {-am} theme element in the VTI. These differences are exemplified in the differences between Tables 2.11 and 2.12.

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[13]Where Wolfart (1973) identified an iterative/conditional morpheme as -ih, Cook (2014) follows the contemporary orthography.

[14]Wolfart (1973) classifies these two types together as changed conjunct forms, deriving {kâ-} from {kî-})

[15]Terminology for these terms vary between researchers. The subjunctive is sometimes referred to as the *future conditional*, which helps avoid the the term subjunctive (Okimāsis, 2018; Ratt, 2016). Similarly, the term *timeless conditional* has been used in place of *iterative* (Harrigan et al., 2018).

Table 2.10: VII Conjunct Paradigm for mihkwâ, 'to be red'. Based on (Wolvengrey, 2011, 413)

	Prefix	Stem	Theme	SAP Person	Obviative	3rd Person	3PL	3'
3SG	ê-	mihkwâ				k		
3PL	ê-	mihkwâ				k	i	
3'SG	ê-	mihkwâ			yi	k		
3'PL	ê-	mihkwâ			yi	k	i	

Table 2.11: VAI Conjunct Paradigm for nipâ, 'to sleep'. Based on (Wolvengrey, 2011, 415).

	Prefix	Stem	Theme	SAP Person	Obviative	3rd Person	3PL	3'
1SG	ê	nipâ		yân				
2SG	ê	nipâ		yan				
1PL	ê	nipâ		yâhk				
21PL	ê	nipâ		yahk				
2PL	ê	nipâ		yêk				
3SG	ê	nipâ				t		
3PL	ê	nipâ				c	ik	
3'	ê	nipâ			yi	t		

The paradigmatic breakdowns used in Tables 2.13 through 2.16 highlight the theme morphs for the direct and inverse. There are alternative ways to analyze the endings in VTA paradigms, perhaps more straightforwardly by chunking all the suffixes together as sorts of portmanteau morphemes, as in Harrigan et al. (2017). For consistency and compatibility with Wolvengrey (2011), this dissertation will continue to use the paradigmatic patterns as presented in the four-conjugation class appendices of Wolvengrey (2011).

Table 2.12: VTI Independent Paradigm for wâpaht, 'to see it'. Based on (Wolvengrey, 2011, 417).

	Prefix	Stem	Theme	SAP Person	Obviative	3rd Person	3PL	3'
1SG	ê	wâpaht	am	ân				
2SG	ê	wâpaht	am	an				
1PL	ê	wâpaht	am	âhk				
21PL	ê	wâpaht	am	ahk				
2PL	ê	wâpaht	am	êk				
3SG	ê	wâpaht	am			k		
3PL	ê	wâpaht	am			k	ik	
3'	ê	wâpaht	am		(i)yi	t		

Table 2.13: VTA Conjunct Direct, Local Paradigm Excerpt for mow, 'to eat'. Based on Wolvengrey (2011, 419).

Actor → Goal	Prefix	Verb Stem	Theme	2sg/2pl	1pl
2sg → 1sg	ê-	mow	i	yan	
2sg/pl → 1pl	ê-	mow	i		yâhk
2pl → 1sg	ê-	mow	i	yêk	

Table 2.14: VTA Conjunct Inverse, Mixed Participant Paradigm Excerpt. Based on Wolvengrey (2011, 419).

Actor → Goal	Prefix	Verb Stem	Theme	Obviative	SAP	3sg	3pl
1sg → 3sg	ê-	mow			it		ik
2sg → 3sg	ê-	mow			isk		ik
3sg → 3'	ê-	mow	iko		yâhk		ik
1pl → 3sg	ê-	mow	iko		yahkw		ik
21pl → 3sg	ê-	mow	iko		yêkw		ik
2pl → 3sg	ê-	mow	iko			t	
3pl → 3'	ê-	mow	iko			t	ik
3' → 3"	ê-	mow	iko	yi		t	

Table 2.15: VTA Conjunct Inverse, Local Paradigm Excerpt. Based on Wolvengrey (2011, 419).

Actor → Goal	Prefix	Verb Stem	Theme	2sg/2pl	1pl
2sg → 1sg	ê-	mow	i	yan	
2sg/pl → 1pl	ê-	mow	i		yâhk
2pl → 1sg	ê-	mow	i	yêk	

Table 2.16: VTA Conjunct Direct, Mixed Participant Paradigm Excerpt. Based on Wolvengrey (2011, 419).

Actor → Goal	Prefix	Verb Stem	Theme	Obviative	SAP	3sg	3pl
1sg → 3sg	ê-	mow			ak		ik
2sg → 3sg	ê-	mow			at		ik
3sg → 3'	ê-	mow	â		yâhk		ik
1pl → 3sg	ê-	mow	â		yahkw		ik
21pl → 3sg	ê-	mow	â		yêkw		ik
2pl → 3sg	ê-	mow	â			t	
3pl → 3'	ê-	mow	â			t	ik
3' → 3"	ê-	mow	â	yi		t	

The Imperative Order

Just as Bloomfield (1946) does, Wolfart (1973) describes two main Imperative modes: the Immediate and Delayed imperatives. The Immediate Imperative refers to a command to do something immediately, while the Delayed Imperative refers to a command to do something later. Because the Imperative only encodes command forms, both the immediate and the delayed mark only for second person forms. Resultingly, VII conjugation class of verbs, which only encodes third person and obviative actors, does not occur in the Imperative.

Across the remaining three conjugation classes, the Immediate Imperative describes an immediate command and is marked with no suffix, a {-tân} suffix, and a {-k} suffix for second person singular, first person inclusive, and second person plural, respectively. Again, the main differentiation between the VAI and VTI imperative paradigms is the latter containing a theme morph, as seen in Tables 2.17 and 2.18.

Table 2.17: VAI Imperative Paradigm. (Wolvengrey, 2011, 395)

	Verb Stem	Immediate	Delayed
2SG	nipâ		
21PL	nipâ	tân	
2PL	nipâ	k	
2SG	nipâ		hkan
21PL	nipâ		hkahk
2PL	nipâ		hkêk

Table 2.18: VTI Imperative Paradigm. (Wolvengrey, 2011, 398)

	Verb Stem	theme	Immediate	Delayed
2SG	wâpaht	a		
21PL	wâpaht	ê	tân	
2PL	wâpaht	amw	ik	
2SG	wâpaht	amw		ihkan
21PL	wâpaht	amw		ihkahk
2PL	wâpaht	amw		ihkêk

Additionally, the second person plural and all delayed forms contain an empenthetic /ɪ/. In each of these cases, the theme sign is realized as {-amw-} and the resulting /wɪ/ sequence coalesces to /o/, as in *wâpahtamok*, 'See it, y'all!'. Where the {-amw-} and epenthetic /ɪ/ occur before an /h/, the surfacing form contains a long /o/, as in *wâpahtamôhkan*, 'see it later!'

Table 2.19: VTA Imperative Mixed Participant Paradigm (Wolvengrey, 2011, 403).

	Stem	Theme	Immediate 3sɢ	3ᴘʟ	Delayed 3sɢ	3ᴘʟ
2sɢ	mow		(i)	ik		
21ᴘʟ	mow	â	tân	ik		
2ᴘʟ	mow		ihkw	ik		
2sɢ	mow	â			hkan	ik
21ᴘʟ	mow	â			hkahkw	ik
2ᴘʟ	mow	â			hkêkw	ik

Table 2.20: VTA Imperative Local (Wolvengrey, 2011, 403).

	Stem	Theme	Immediate 1sɢ	1ᴘʟ	Delayed 1sɢ	1ᴘʟ
2sɢ	mow	i	n			
2sɢ/ᴘʟ	mow	i		nân		
2ᴘʟ	mow	i	k			
2sɢ	mow	i			hkan	
2sɢ/ᴘʟ	mow	i				hkâhk
2ᴘʟ	mow	i			hkêk	

The Imperative paradigms for the VTAs looks somewhat different than the VAI and VTI paradigms. Because the VTAs take two Animate participants, the Imperative paradigm includes both first person and third person goals, as seen in Tables 2.19 and 2.20.

All forms except 2sɢ and 2ᴘʟ acting on third persons in the Immediate imperative have a theme morph, {-â-} for the Mixed Participant Paradigm and {-i-} for the local. As in other cases, where one morpheme ends with /w/ and another begins with /i/, the