

An illusory subject preference in Algonquian agreement^{*}

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1 Introduction

The inflection of Algonquian transitive verbs includes an agreement suffix known as the CENTRAL ENDING (Goddard 1969). The patterning of this suffix can ordinarily be described without reference to syntactic roles: the central ending indexes either (i) both arguments simultaneously or (ii) the argument with more richly specified phi-features. In certain contexts, however, the central ending instead appears to show a preference for indexing the subject, even when the subject's features are clearly less specified than those of the object (Xu 2016: 54–57, Bhatia et al. 2018). This exceptional subject preference is surprising to observe in an agreement slot that is otherwise conditioned purely by feature hierarchies rather than syntactic roles, and it presents challenges for the overall analysis of Algonquian agreement.

In this squib I argue that the exceptional subject preference is only apparent. Rather than a preference to index the subject, there is a more general preference to maximize the informational value of the agreement morphology by not redundantly repeating exactly the same information in two agreement slots. In certain contexts, this pressure has driven the central ending to index the subject even though the subject's features are less specified than those of the object, simply because the object's features have already been fully identified in a separate agreement slot. This process, which can be formalized as an impoverishment rule, creates the illusion of a preference to index the subject, but in fact the only preference is to make the agreement morphology as informative as possible. The lesson that emerges is that the possibility of describing a morphological pattern in syntactic terms does not guarantee that the correct explanation

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for the pattern actually lies in the syntax. Morphological factors can conspire to create patterns that deceptively appear to have a syntactic source.

The squib proceeds as follows. Section 2 introduces the exceptional subject preference. Section 3 considers and rejects a syntactic account. Section 4 proposes a morphological account in which subjecthood plays no role. Finally, section 5 contextualizes the morphological account by considering the diachronic origins of the exceptional subject preference. The discussion is based on data from Moose Cree (Ellis 1971), an Algonquian language spoken on the western side of James Bay, but the key patterns are shared across most Algonquian languages, as illustrated by the survey of Algonquian verb paradigms provided in the appendix, and the conclusions are intended to generalize beyond Moose Cree.¹

2 The exceptional subject preference

This squib considers data from the “conjunct order” inflection that occurs canonically in subordinate clauses. Conjunct forms of transitive verbs always include at least two agreement markers: a THEME SIGN (Bloomfield 1946: 102), which follows the verb stem and expresses the person of the object, and a CENTRAL ENDING (Goddard 1969: 103), which follows the theme sign and is realized as either a portmanteau suffix that expresses features of two arguments simultaneously or a simple suffix that expresses features of one argument. The theme signs and central endings that appear in Moose Cree conjunct forms are listed in (1) (cf. Dahlstrom 1991: 27, Zúñiga 2006: 78). The use of these agreement markers is illustrated by the paradigm in Table 1 (Ellis 1971: 90), which shows the inflectional endings for all transitive forms that involve at least one speech-act participant (SAP, i.e. first or second person). To aid recognition, the theme sign is underlined and the central ending is bolded in all data in the squib.

- (1) a. Theme signs: -i ‘1OBJ’, -it ~ -is ‘2OBJ’, -a: ~ -Ø ‘3OBJ’, -ikw ~ -iko ‘INV’
 b. Simple central endings: **-a:n** ‘1SG’, **-an** ‘2SG’, **-a:hk** ‘1PL’, **-ahkw** ‘2PL’, **-e:kw** ‘2PL’, **-t** ~ **-k** ‘3’
 c. Portmanteau central endings: **-ak** ‘1SG:3’, **-at** ‘2SG:3’, **-akiht** ‘1PL:3’, **-amiht** ‘3:1PL’, **-a:kw** ‘3:2PL’, **-akok** ‘1:2PL’

How does the agreement system in Table 1 work? The patterning of the theme sign is conditioned by the syntax: the theme sign consistently indexes the object, whatever its features may be. Complete verb forms illustrating the indexing of first-, second-, and third-person objects are given in (2). The patterning of the central ending, in contrast, is

¹ All instances of “Moose Cree” in this squib could alternatively be read as “Moose Cree and Eastern Swampy Cree”, as the forms in Ellis 1971 are common to both dialects. Ellis consulted primarily with speakers at Fort Albany and Moose Factory (Ellis 1971: 76).

SAP acting on 3			3 acting on SAP		
1SG→3	- <u>Ø</u> - ak	(-3 <u>OBJ</u> -1SG:3)	3→1SG	- <u>i</u> - t	(-1 <u>OBJ</u> -3)
2SG→3	- <u>Ø</u> - at	(-3 <u>OBJ</u> -2SG:3)	3→2SG	- <u>i</u> - s-k	(-2 <u>OBJ</u> -3)
1PL→3	- <u>Ø</u> - akiht	(-3 <u>OBJ</u> -1PL:3)	3→1PL	- <u>i</u> - yamiht	(-1 <u>OBJ</u> -3:1PL)
21PL→3	- <u>Ø</u> - ahkw	(-3 <u>OBJ</u> -21PL)	3→21PL	- <u>i</u> - ahkw	(-2 <u>OBJ</u> -21PL)
2PL→3	- <u>Ø</u> - e:kw	(-3 <u>OBJ</u> -2PL)	3→2PL	- <u>i</u> - a:kw	(-2 <u>OBJ</u> -3:2PL)
2 acting on 1			1 acting on 2		
2SG→1SG	- <u>i</u> - yan	(-1 <u>OBJ</u> -2SG)	1SG→2SG	- <u>i</u> - a:n	(-2 <u>OBJ</u> -1SG)
2PL→1	- <u>i</u> - ye:kw	(-1 <u>OBJ</u> -2PL)	1→2PL	- <u>i</u> - akok	(-2 <u>OBJ</u> -1:2PL)
2SG→1PL	- <u>i</u> - ya:hk	(-1 <u>OBJ</u> -1PL)	1PL→2SG	- <u>i</u> - a:hk	(-2 <u>OBJ</u> -1PL)

Table 1: Moose Cree conjunct inflection in transitive forms involving at least one SAP

not rigidly connected to a particular syntactic role. Instead, the central ending slot has access to the features of *both arguments* and is preferentially realized as a portmanteau suffix that indexes both arguments simultaneously, as in the forms in both (2) and (3).²

- (2) a. wa:pamiyamiht
wa:pam -i -**amiht**
see -1OBJ -3:1PL
‘she sees us.EXCL’

b. wa:pamita:k
wa:pam -i-**a:kw**
see -2OBJ -3:2PL
‘she sees you.PL’

c. wa:pamakiht
wa:pam -Ø -**akiht**
see -3OBJ -1PL:3
‘we.EXCL see her’

(3) a. wa:pamak
wa:pam -Ø -**ak**
see -3OBJ -1SG:3
‘I see her’

b. wa:pamat
wa:pam -Ø -**at**
see -3OBJ -2SG:3
‘you.SG see her’

c. wa:pamitakok
wa:pam -i-**akok**
see -2OBJ -1:2PL
‘I/we see you.PL’

²Verb forms have been created by adding the stem *wa:pam-* ‘see someone’ to the inflectional endings given by Ellis (1971: 90) and listed in Table 1. Glosses follow the Leipzig Glossing Rules, with these additions: 21PL = inclusive first-person plural, 3 = grammatically animate third person, INV = inverse. Since the patterning of grammatically inanimate third persons is not relevant in this squib, inanimate morphology is not included in (1). The terms *subject* and *object* denote the external and internal arguments, respectively, following conventional practice in Algonquian linguistics (Goddard 1969: 36). For simplicity, feminine gender is used as a default in English translations of Algonquian third singular forms.

Although portmanteau central endings are used whenever they are available, the vocabulary in (1) does not include a portmanteau suffix for every possible subject-object combination. When a portmanteau is not available, a simple central ending indexing just one argument must be realized instead. In such cases, the central ending normally indexes whichever argument is *more featurally specified*, under the assumption that SAPs are more specified than third persons and plurals are more specified than singulars (e.g. Harley and Ritter 2002). Accordingly, if the arguments are an SAP and a third person, the central ending indexes the SAP argument whether it is the subject, as in (4a) and (4b), or the object, as in (4c), and if the arguments are a singular SAP and a plural SAP, the central ending indexes the plural SAP argument, again whether it is the subject, as in (5a), or the object, as in (5b).³

- | | |
|---|--|
| <p>(4) a. wa:pamahk
 wa:pam -<u>Ø</u> -ahkw
 see -<u>3OBJ</u> -21PL
 ‘we.INCL see her’</p> <p>b. wa:pame:k
 wa:pam -<u>Ø</u> -e:kw
 see -<u>3OBJ</u> -2PL
 ‘you.PL see her’</p> <p>c. wa:pamitahk
 wa:pam -<u>it</u> -ahkw
 see -<u>2OBJ</u> -21PL
 ‘she sees us.INCL’</p> | <p>(5) a. wa:pamiya:hk
 wa:pam -<u>i</u> -a:hk
 see -<u>1OBJ</u> -1PL
 ‘you.SG see us’</p> <p>b. wa:pamita:hk
 wa:pam -<u>it</u> -a:hk
 see -<u>2OBJ</u> -1PL
 ‘we see you.SG’</p> |
|---|--|

Up to this point, the patterning of the central ending has been definable in purely morphological terms. The governing principle, put simply, is to express *as many features as possible*, with no regard to whether those features come from the subject or the object (cf. Costa 2003: 304–307). However, there are two exceptional contexts in which the central ending behaves differently: rather than expressing as many features as possible, it instead rigidly indexes the subject (Xu 2016: 54–57, Bhatia et al. 2018). These exceptions are the focus of this squib. The first exceptional context is when a third person acts on a singular SAP. In such cases, the central ending indexes only the third-person subject, as shown in (6) (*-t* ~ *-k* ‘3’).⁴ This outcome is unexpected under

³If both arguments are plural SAPs, most Algonquian languages index 1PL in preference to 2PL, but Moose and Swampy Cree instead index 2PL in preference to 1PL (Déchaine 1999: 60, McGinnis 2008: 174–175). See discussion around (12) below.

⁴The *-t* ~ *-k* alternation shown by the third-person central ending in (6) is phonologically conditioned: *-t* appears after a vowel and *-k* appears after a consonant (Bloomfield 1946:101–102, Goddard 1969:128).

the morphological analysis outlined above, which incorrectly predicts that the central ending should index the more specified SAP object.

- (6) a. wa:pamit
wa:pam -i -**t**
see -1OBJ -**3**
'she sees me'
- b. wa:pamisk
wa:pam -is -**k**
see -2OBJ -**3**
'she sees you.SG'

The second exceptional context is when an SAP acts on a singular SAP. When 2sg acts on 1sg, the central ending indexes only the 2sg subject, as in (7a) (*-an* ‘2sg’), and when 1sg acts on 2sg, the central ending indexes only the 1sg subject, as in (7b) (*-a:n* ‘1sg’). This outcome is also unexpected under the morphological analysis outlined above, which incorrectly predicts that the central ending should consistently index either the 2sg argument in both forms or the 1sg argument in both forms, depending on whether second or first person is more featurally specified (see discussion in McGinnis 2005: 702). Instead, it is the subject that is consistently indexed, regardless of whether it is 2sg or 1sg.

- (7) a. wa:pamiyan
wa:pam -i -**an**
see -1OBJ -**2SG**
'you.SG see me'
- b. wa:pamita:n
wa:pam -it -**a:n**
see -2OBJ -**1SG**
'I see you.SG'

In summary, agreement in Moose Cree transitive conjunct forms with at least one SAP argument can be described as follows. The theme sign is conditioned *syntactically*, rigidly indexing the object. The central ending is usually conditioned *morphologically*, expressing as many features as possible from either or both arguments, but there are two exceptional contexts in which the central ending instead rigidly indexes the subject, thus apparently showing syntactic conditioning. I will ultimately argue that this apparent syntactic conditioning is an illusion, and that the exceptional subject preference shown by the central ending in fact arises from purely morphological factors. This is the key point of the squib: even if a morphological pattern appears to make reference to syntactic roles, as is the case for the central ending in (6) and (7), the pattern may not in fact be syntactically conditioned. However, before this point can be made, it is first necessary to consider the obvious alternative analysis in which the exceptional subject preference *is* syntactically conditioned.

3 A syntactic account of the exceptional subject preference

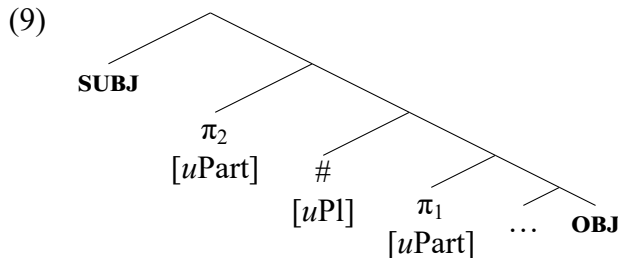
Some authors have taken the subject preference in (6) and (7) to indicate that the patterning of the central ending is indeed conditioned syntactically (Xu 2016: 54–57, Bha-

tia et al. 2018). The key idea is that the subject-agreement forms in (6) and (7) reveal the *default* behaviour of the central ending: just as the theme sign is tied to the object role, the central ending is tied to the subject role. Under this view, the subject-agreement forms in (6) and (7) are not unusual exceptions. Instead, these are the forms that most transparently reflect the syntactic conditioning of the central ending.

But if it is correct that the central ending is fundamentally a subject marker, what explains the forms in which the central ending indexes the object or both arguments, as in several of the preceding examples? It may be relevant that in many such forms, the object is a plural SAP (Xu 2016, Bhatia et al. 2018). Compare, for example, the 3→1SG form in (8a), where the central ending indexes the third-person subject, and the 3→1PL form in (8b), where the central ending indexes both arguments.

- (8) a. wa:pamit b. wa:pamiyamiht
 wa:pam -i -t wa:pam -i -amiht
 see -1OBJ -3 see -1OBJ -3:1PL
 ‘she sees me’ ‘she sees us.EXCL’

These examples suggest that it is the presence of a plural SAP object that exceptionally triggers a syntactic connection between the central ending and the object, thereby overriding the default subject preference. An account along these lines is advanced for the parallel data in Ojibwe by Bhatia et al. (2018), who work from the following generalization: “Agreement is with the object exactly when it is both plural and a speech-act participant, and with the subject otherwise” (p. 56). To derive this generalization, Bhatia et al. propose the formal syntactic structure sketched in (9), in which the π_1 head agrees with and raises the object only when the object is an SAP, the # head agrees with and raises the object only when the object is plural and has already been raised to [Spec, πP_1], and the π_2 head, which is realized as the central ending, agrees with the object only when the object has already been raised to [Spec,#P]—an outcome that will have obtained only when the object is a plural SAP. If the object has not been raised to [Spec,#P], the π_2 head instead agrees upwards with the subject (cf. Béjar and Rezac 2009).



In short, Bhatia et al. propose that only plural SAP objects raise high enough to be agreed with by the central ending, which otherwise agrees with the subject.

Setting aside any potential issues with the formal mechanics, several problems can be identified for Bhatia et al.'s account of the patterning of the central ending, and, by extension, other syntactic accounts that share similar assumptions. The first problem is that the empirical generalization that the central ending indexes the object only when the object is a plural SAP is false. Although the central ending does regularly index plural SAP objects, it also sometimes indexes objects that are not plural SAPs, as in the Moose Cree forms in (10), where the central ending is a portmanteau that indexes both the SAP subject and the third-person object. The status of the central endings in (10) as subject-object portmanteaux is confirmed by a comparison with the intransitive forms in (11) (Ellis 1971: 87), which show the distinct set of simple central endings that appear when only the subject is indexed (see also (5b), (7a), (7b)).

- | | |
|--|--|
| <p>(10) a. wa:pamak
 wa:pam -Ø -ak
 see -3OBJ -1SG:3
 'I see her'</p> <p>b. wa:pamat
 wa:pam -Ø -at
 see -3OBJ -2SG:3
 'you.SG see her'</p> <p>c. wa:pamakiht
 wa:pam -Ø -akiht
 see -3OBJ -1PL:3
 'we.EXCL see her'</p> | <p>(11) a. nipa:ya:n
 nipa: -a:n
 sleep -1SG
 'I sleep'</p> <p>b. nipa:yan
 nipa: -an
 sleep -2SG
 'you.SG sleep'</p> <p>c. nipa:ya:hk
 nipa: -a:hk
 sleep -1PL
 'we.EXCL sleep'</p> |
|--|--|

The existence of central endings that index third-person objects is unexpected under a syntactic analysis in which only plural SAP objects can disrupt the default pattern of subject agreement. The portmanteau forms in (10) are instead consistent with a model in which the central ending regularly has access to the features of both arguments, as described in section 2 of the squib.⁵

There is a second empirical problem for a syntactic analysis in which plural SAP objects exceptionally control the central ending: not all plural SAP objects have this

⁵To salvage an analysis in which the central ending agrees with the object only if the object is a plural SAP, we could propose that a portmanteau central ending such as *-ak* '1SG:3' is not a true portmanteau indexing both the SAP subject and the third-person object, but rather an allomorph of the simple central ending *-a:n* '1SG', indexing only the SAP subject, but conditioned by a preceding third-person object theme sign (Goddard 1969: 125, cf. Fenger 2018). See Oxford and Xu 2020 for a series of arguments that the Kickapoo and Ojibwe equivalents of the Moose Cree forms in (10) truly do involve agreement with both arguments rather than contextual allomorphy.

effect. For example, in Plains Cree forms in which the arguments are 1PL and 2PL, the central ending always indexes the 1PL argument, whether it is the subject, as in (12a), or the object, as in (12b) (Wolfart 1973: 42). As a consequence of this general preference for 1PL agreement, the 2PL object in (12a) fails to be indexed by the central ending despite being a plural SAP. This outcome is not predicted by the syntactic analysis in (9), which requires the central ending to agree with all plural SAP objects.

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|---------|-----------------------------|----|-----------------------------|
| (12) a. | wa:pamita:hk | b. | wa:pamiya:hk |
| | wa:pam -it -a:hk | | wa:pam -i -a:hk |
| | see -2OBJ -1PL | | see -1OBJ -1PL |
| | ‘we see you.PL (or you.SG)’ | | ‘you.PL (or you.SG) see us’ |

The failure of agreement with the 2PL object in (12a) is not predicted by a syntactic analysis that forces the central ending to agree with plural SAP objects, but it does follow straightforwardly under the morphological analysis sketched in section 2 of the squib, in which the central ending has access to the features of both arguments and its realization is determined by purely morphological factors. As McGinnis (2008: 175) shows for similar data in Ojibwe, it is sufficient to posit that the 1PL suffix *-a:hk* realizes the features [Speaker, Plural] while the 2PL suffix *-e:kw* realizes only [Plural]. Since *-a:hk* ‘1PL’ expresses more features than *-e:kw* ‘2PL’, the use of *-a:hk* ‘1PL’ will be favoured whenever 1PL and 2PL arguments co-occur, as in both forms in (12). The morphological analysis of the central ending thus easily handles data that the syntactic analysis cannot.

A third problem for a syntactic analysis of the patterning of the central ending is the lack of syntactic evidence. The analysis in (9) crucially posits syntactic movement of plural SAP objects from their base position to [Spec,#P], but there is no independent evidence for such movement. SAP arguments are realized by overt pronouns only when topicalized or focused, in which case they appear in clause-peripheral positions (see Dahlstrom 1988: 166–167 for Meskwaki), so no word order evidence can be adduced to support movement of the object from VP to #P. And since an object that has moved to [Spec,#P] remains lower than the subject in [Spec, πP_2], syntactic tests that diagnose raising of the object above the subject, such as variable binding (Bruening 2001: 117), are also not applicable. We are thus in the uncomfortable position of positing syntactic movement without support from syntactic evidence.

A final, more conceptual problem for a syntactic analysis, as expressed by an anonymous reviewer, is that “appealing to syntax in this one exceptional case makes the analysis of this agreement slot less coherent, while a morphological solution would provide a uniform analysis.” Since there are contexts in which the patterning of the central ending is clearly morphologically determined, such as the 1PL preference exemplified for Plains Cree in (12) above, the most elegant account would be one in which the patterning of the central ending is always morphologically determined. Needless

to say, this consideration carries weight only if a satisfactory morphological account of the exceptional subject preference can be formulated at all. This task is taken up in the next section.

4 A morphological account of the exceptional subject preference

To briefly restate the problem, we have seen that the patterning of the central ending in Moose Cree can ordinarily be given a morphological analysis: the syntax provides access to the features of both arguments, and a portmanteau central ending is realized if such an ending exists for the relevant subject-object combination; otherwise, the most featurally specified simple central ending is realized. However, there are two contexts in which the central ending instead consistently indexes the subject, regardless of featural richness: when a third person acts on a singular SAP, as in (13a) (where *-t* ‘3’ indexes the subject ‘she’), and when a singular SAP acts on a singular SAP, as in (13b) (where *-an* ‘2SG’ indexes the subject ‘you’).

- | | |
|------------------------------|--------------------------------|
| (13) a. wa:pamit | b. wa:pamiyan |
| wa:pam - <u>i</u> - t | wa:pam - <u>i</u> - an |
| see - <u>1OBJ</u> - 3 | see - <u>1OBJ</u> - 2SG |
| ‘ she sees me’ | ‘ you.SG see me’ |

The exceptional subject preference shown by the central ending in (13) does not have a morphological explanation in terms of featural richness, but it was argued in the preceding section that a syntactic explanation is not viable either. How, then, is the exceptional subject preference to be explained?

The path to an explanation becomes clear if we consider the central ending in its syntagmatic and paradigmatic context rather than examining it in isolation. In particular, recall that the central ending follows another agreement marker, the theme sign, which always expresses the person of the object: *-i* ‘1OBJ’ in the forms in (13). The key observation is that when an SAP object is singular, as in (13), its person is the only marked feature value that needs to be expressed, so the theme sign alone is sufficient to fully identify the object. If object were to be indexed by the central ending as well, as favoured by considerations of featural richness, the result would be the forms in (14). But in these hypothetical forms, the central ending is informationally redundant: it simply repeats information that is already fully expressed by the theme sign. Worse still, it does so at the expense of not indexing the subject at all: since the theme sign and central ending both index the object, the subject is left unindexed, thereby eliminating the paradigmatic contrast between the 3→1SG and 2SG→1SG forms, which are identical in (14).

- (14) a. *wa:pamiya:n b. *wa:pamiya:n
 wa:pam -i -a:n wa:pam -i -a:n
 see -1OBJ -1SG see -1OBJ -1SG
 ‘she sees **me**’ ‘you.SG see **me**’

There is thus a strong functional motivation for the central ending to index the subject when the object is a singular SAP: since the theme sign already fully indexes the object in such forms, using the central ending to index the subject avoids syntagmatic redundancy and maintains paradigmatic contrast. Crucially, however, this motivation arises only when the object is a *singular* SAP: since the theme sign does not express number, a singular SAP object is fully indexed by the theme sign but a plural SAP object is not. Forms with singular SAP objects are thus the only place where the use of the central ending to index the object would be fully redundant—and, as we have seen, forms with singular SAP objects are also the only place where the central ending shows an exceptional preference to index the subject. The subject preference thus arises in precisely the contexts in which failure to index the subject would be informationally problematic. This is unlikely to be a coincidence.

From a functional perspective, then, the exceptional subject preference can be seen as a strategy to maximize the informational content of the verb form as a whole by avoiding total redundancy of the theme sign and central ending. Rather than selecting the central ending that realizes as many features as possible, as described in section 2, speakers actually select the central ending that allows the *verb form as a whole* to express as many features as possible, taking into account the features already expressed by the theme sign (cf. Costa 2003: 304–307). These two formulations of the conditioning of the central ending are equivalent in most contexts, but when the object is a singular SAP, only the second, more holistic formulation produces the attested forms in (13) rather than the ungrammatical forms in (14).

From a formal perspective, the preceding account can be implemented using an operation such as IMPOVERISHMENT in Distributed Morphology (Halle and Marantz 1993, Noyer 1997), which deletes features from an agreement node under certain conditions. The key insight of the preceding account is that the central ending avoids indexing a singular SAP whenever that SAP has already been indexed by the theme sign. We can capture this effect by positing the impoverishment rule in (15).

- (15) Delete the features of a singular SAP from the central ending node if the same features are present on the theme sign node.

Since the features on the theme sign node are always those of the object, this rule deletes the object’s features from the central ending node whenever the object is a singular SAP and is thus already fully identified by the theme sign. The deletion of the object’s features leaves only the subject’s features to condition the realization of

the central ending, which forces the central ending to index the subject, as is optimal on functional grounds. Thus emerges the subject preference. Crucially, however, this preference emerges not from an explicit instruction to index the subject, but rather from the deletion of the object’s features in contexts where they are redundant. Instead of having a preference to index the subject in forms with a singular SAP object, the central ending actually has a preference not to redundantly index a singular SAP object. As shown in (15), this preference can be formalized without reference to the syntactic roles of subject and object. We have now arrived at a fully morphological analysis of the patterning of the central ending: it is realized as a portmanteau suffix if one is available ((2), (3)), as the most featurally specified simple suffix otherwise ((4), (5), (12)), or, exceptionally, as a simple suffix indexing the subject if the rule in (15) has deleted the features of the object ((6), (7)).

5 Whence the subject preference?

From a synchronic perspective, the impoverishment rule in (15) is arbitrary: it simply exists as part of the grammar, posited by learners to account for patterns in the input. No synchronic explanation for its existence is needed. But in the preceding section, an explanation for the rule’s existence *was* given: it serves to fine-tune the realization of the central ending in order to maximize the informational content of the verb form. How does this functional explanation relate to the formal rule given in (15)?

The relation, I propose, is diachronic: the functional factors discussed above do not play a synchronic role in the grammar, but they do help to explain how the grammar that we now observe developed over time. The key is that the forms that show the exceptional subject preference ((6), (7)) are *archaisms*. Three observations support this claim. First, the exceptional subject forms belong to the “conjunct order” inflectional paradigm that is used in embedded clauses, which is known to be more archaic than the “independent order” paradigm that is used in main clauses (Goddard 1974: 323, 2018: 92). Second, the exceptional subject forms express interactions involving ‘me’ and ‘you.SG’, which are highly frequent, and frequent forms are known to retain archaic patterns (e.g. the English verb *be*). Third, the exceptional subject forms show an overall agreement pattern in which the verb stem is followed by an object marker (the theme sign) plus a subject marker (the central ending), and this V-OBJ-SUBJ pattern matches the agreement templates of Wiyot and Yurok, two languages of California that are distantly related to Algonquian (McLean 2001: 87, 93). Since the V-OBJ-SUBJ template is attested in Wiyot, Yurok, and conservative Algonquian forms, it likely goes back to Proto-Algic, the ancient ancestor of Wiyot, Yurok, and Proto-Algonquian (cf. Proulx 1985: 86–87). From a diachronic perspective, then, the exceptional subject preference discussed for Moose Cree in this squib actually seems to be a relic of a V-OBJ-SUBJ template that once applied much more generally.

This conclusion sheds light on the origin of the impoverishment rule in (15). If the central ending was originally a subject marker, the flexible behaviour that it shows in the modern Algonquian languages—where it expresses as many features as possible, from either the subject or the object—must have been an innovation. However, as discussed above, this innovation would have had negative consequences in contexts with singular SAP objects, producing the redundant forms in (14), which are less informative than the original V-OBJ-SUBJ forms in (13). The solution, evidently, was simply to retain the original V-OBJ-SUBJ template in these contexts, creating what now appears to be an exceptional preference to index the subject, but at the time would simply have been the status quo. The exceptional subject forms are thus the *residue* of a diachronic change in which the patterning of the central ending became more flexible. At the time when the change took place, there were good functional reasons why the now-exceptional forms did not take part. But the synchronic result is simply an exceptional pattern, which subsequent generations of learners must accommodate by positing an arbitrary rule such as (15). Ultimately, then, the exceptional subject preference appears to be a fossil of an earlier stage of the agreement system, preserved now as a synchronically arbitrary exception in a few frequently-used forms.

Since the exceptional subject preference is synchronically arbitrary, there is no reason why it must exist in the grammar—and indeed, there is at least one Algonquian grammar that has narrowed the rule’s scope. In the Delaware languages (Munsee and Unami, exemplified here by Munsee data from Goddard 1969: 134, 185, 187 and O’Meara 2003: 47), the exceptional subject preference is triggered only by *first-person* singular objects, not also by second-person singular objects. In 3→SAP.SG forms, the central ending indexes the third-person subject when the object is 1SG, as in (16a) (*-t* ‘3’), but not when the object is 2SG, as in (16b), where the central ending instead indexes the 2SG object (*-an* ‘2SG’). Compare the equivalent Cree data in (6), where the central ending indexes the third-person subject in both forms.

- | | |
|--|---|
| (16) a. <i>mi:li:t</i>
<i>mi:l -i: -t</i>
give -1OBJ -3
‘ she gives to me’ | b. <i>mi:lkwan</i>
<i>mi:l -əkw -an</i>
give -INV -2SG
‘she gives to you.SG ’ |
|--|---|

Similarly, in SAP.SG→SAP.SG forms, the central ending indexes the subject when the object is 1SG, as in (17a) (*-an* ‘2SG’), but not when the object is 2SG, as in (17b), where the central ending instead indexes the 2SG object (*-an* ‘2SG’). Compare the equivalent Cree data in (7), where the central ending indexes the subject in both forms.⁶

⁶The innovative Delaware pattern in (17b) is discussed by Goddard (1969: 136–137). In principle, the shift to indexing the object in the Delaware forms for ‘she gives to you’ in (16b) and ‘I give to you’ in (17b) ought to have made the two forms homophonous, as discussed for the hypothetical Cree forms in

- (17) a. mi:ləyan b. mi:ləlan
 mi:l -i: -an mi:l -əl -an
 give -1OBJ -2SG give -2OBJ -2SG
 ‘you.SG give to me’ ‘I give to you.SG’

The loss of the exceptional subject preference in forms with 2SG objects can be captured by narrowing the impoverishment rule so that it applies only when the object is 1SG, as expressed for Delaware in (18b), rather than whenever the object is a singular SAP, as in the Cree rule in (15) above, repeated in (18a).

- (18) a. *Cree*: Delete the features of a singular SAP from the central ending node if the same features are present on the theme sign node.
 b. *Delaware*: Delete [1SG] from the central ending node if these features are present on the theme sign node.

By deleting the object’s features from the central ending node, these rules force the central ending to index only the subject in the affected forms, thus preserving the archaic V-OBJ-SUBJ agreement pattern. The Cree rule produces this outcome in forms with both 1SG and 2SG objects, whereas the Delaware rule does so only in forms with 1SG objects. The variation in the scope of the exceptional subject preference between Cree and Delaware underlines the conclusion that this preference reflects an arbitrary morphological rule, not a deep syntactic principle.

6 Conclusion

In Moose Cree, as in most Algonquian languages (see appendix), the patterning of the central ending can be described almost entirely in terms that are neutral to syntactic roles, except for a preference to index the subject that arises in certain contexts. I have argued that a morphological analysis that makes no reference to the subject actually provides the best fit for both the synchronic patterns in the data and their diachronic motivations, which lie in the communicative needs of speakers rather than the syntactic structure of the clause. The subject preference is thus an illusion. The overall lesson is that morphological pressures can conspire to create a pattern that appears to be syntactically governed but is not.

(14) above. Homophony was avoided in Delaware due to the innovative extension of the inverse theme sign -əkw to the 3→2SG form in (16b), replacing the original theme sign -əl ‘2OBJ’ that continues to be used in the 1SG→2SG form in (17b).

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Appendix

To demonstrate that the agreement patterns exemplified by Moose Cree data in the squib are broadly attested across the Algonquian family, this appendix surveys the conjunct agreement inflection for transitive forms with one or more SAP arguments in Proto-Algonquian (Bloomfield 1946: 102) and a range of Central and Eastern Algonquian languages: Miami-Illinois (Costa 2003: 299–304); Meskwaki (Goddard 1994: 202–203); Menominee (Bloomfield 1962: 181–184); Old Algonquin (Davialt 1994: 473–483, <g> respelled as <k>); Southwestern Ojibwe (Nichols 1980: 315, 324–326); Moose Cree (Ellis 1971: 90); Plains Cree (Wolfart 1973: 42); Sheshatshiu Innu (Clarke and MacKenzie 2007: 113, 120–121, <tsh, sh> respelled as <č, š>); Mi'kmaq (Proulx 1978: 102–104, Fidelholtz 1999: 98, Francis and Hewson 2016: 135); Maliseet-Passamaquoddy (Francis and Leavitt 2008: 668, <o, u, q> respelled as <ə, o, kw>); Unami Delaware (Goddard 1969: 134, 184–186); Massachusetts (Goddard and Bragdon 1988: 555–556, <ē, u, á, ô> respelled as <i:, ə, a:, ā:>). The spelling substitutions noted above have been made to facilitate comparison across languages by using a standardized transcription system. The Plains Algonquian languages (Cheyenne, Arapaho-Gros Ventre, and Blackfoot) are excluded from the survey because of the extensive changes that took place in their agreement systems, which have obscured or eliminated the patterns discussed in this squib.

Morphemic analyses are provided by the current author and do not necessarily follow the sources cited. As in the body of the squib, theme signs are underlined and central endings are bolded. Forms showing the agreement pattern of interest, in which the central ending exceptionally indexes the subject without motivation from featural richness, are marked with a star (★). The distribution of such forms is the same across almost all languages in the survey. The only departures are (i) the loss of the contrast between the 1SG and 2SG central endings in Menominee due to regular sound change; (ii) the loss of the subject preference in Delaware forms with 2SG objects, discussed in section 5 of the squib; and (iii) the replacement of the original 3→SAP forms with inverse forms in Massachusetts. Otherwise, all languages in the survey show the exceptional subject preference in the same contexts that were discussed for Moose Cree in the squib.

1SG→3	*-Ø-ak	(-3OBJ-1SG:3)	★ 3→1SG	*-i-t	(-1OBJ-3)
2SG→3	*-Ø-at	(-3OBJ-2SG:3)	★ 3→2SG	*-eθ-k	(-2OBJ-3)
1PL→3	*-Ø-akent	(-3OBJ-1PL:3)	3→1PL	*-i-yament	(-1OBJ-3:1PL)
21PL→3	*-Ø-ankw	(-3OBJ-21PL)	3→21PL	*-eθ-ankw	(-2OBJ-21PL)
2PL→3	*-Ø-e:kw	(-3OBJ-2PL)	3→2PL	*-eθ-a:kw	(-2OBJ-3:2PL)
★ 2SG→1SG	*-i-yan	(-1OBJ-2SG)	★ 1SG→2SG	*-eθ-a:n	(-2OBJ-1SG)
2PL→1SG	*-i-ye:kw	(-1OBJ-2PL)	1SG→2PL	*-eθ-akokw	(-2OBJ-1SG:2PL)
2→1PL	*-i-ya:nk	(-1OBJ-1PL)	1PL→2	*-eθ-a:nk	(-2OBJ-1PL)

Table 2: Proto-Algonquian

1SG→3	-Ø-ak	(-3OBJ-1SG:3)	★ 3→1SG	-i-t	(-1OBJ-3)
2SG→3	-Ø-at	(-3OBJ-2SG:3)	★ 3→2SG	-eh-k	(-2OBJ-3)
1PL→3	-Ø-akint	(-3OBJ-1PL:3)	3→1PL	-i-amint	(-1OBJ-3:1PL)
21PL→3	-Ø-ankw	(-3OBJ-21PL)	3→21PL	-el-ankw	(-2OBJ-21PL)
2PL→3	-Ø-e:kw	(-3OBJ-2PL)	3→2PL	-el-a:kw	(-2OBJ-3:2PL)
★ 2SG→1SG	-i-yan	(-1OBJ-2SG)	★ 1SG→2SG	-el-a:n	(-2OBJ-1SG)
2PL→1SG	-i-ye:kw	(-1OBJ-2PL)	1SG→2PL	-el-akok	(-2OBJ-1SG:2PL)
2→1PL	-i-a:nk	(-1OBJ-1PL)	1PL→2	-el-a:nk	(-2OBJ-1PL)

Table 3: Miami-Illinois

1SG→3	-Ø-ak	(-3OBJ-1SG:3)	★ 3→1SG	-i-t	(-1OBJ-3)
2SG→3	-Ø-at	(-3OBJ-2SG:3)	★ 3→2SG	-eh-k	(-2OBJ-3)
1PL→3	-Ø-aket	(-3OBJ-1PL:3)	3→1PL	-i-yamet	(-1OBJ-3:1PL)
21PL→3	-Ø-akw	(-3OBJ-21PL)	3→21PL	-en-akw	(-2OBJ-21PL)
2PL→3	-Ø-e:kw	(-3OBJ-2PL)	3→2PL	-en-a:kw	(-2OBJ-3:2PL)
★ 2SG→1SG	-i-yan	(-1OBJ-2SG)	★ 1SG→2SG	-en-a:n	(-2OBJ-1SG)
2PL→1SG	-i-ye:kw	(-1OBJ-2PL)	1SG→2PL	-en-ako:w	(-2OBJ-1SG:2PL)
2→1PL	-i-ya:k	(-1OBJ-1PL)	1PL→2	-en-a:k	(-2OBJ-1PL)

Table 4: Meskwaki

1SG→3	<u>-Ø-ak</u>	(-3OBJ-1SG:3)	★ 3→1SG	<u>-e-t</u>	(-1OBJ-3)
2SG→3	<u>-Ø-at</u>	(-3OBJ-2SG:3)	★ 3→2SG	<u>-Eh-k</u>	(-2OBJ-3)
1PL→3	<u>-Ø-akeht</u>	(-3OBJ-1PL:3)	3→1PL	<u>-e-yamɛht</u>	(-1OBJ-3:1PL)
21PL→3	<u>-Ø-akeht</u>	(-3OBJ-1PL:3)	3→21PL	<u>-En-ahk</u>	(-2OBJ-21PL)
2PL→3	<u>-Ø-ε:k</u>	(-3OBJ-2PL)	3→2PL	<u>-En-a:k</u>	(-2OBJ-3:2PL)
2SG→1SG	<u>-e-yan</u>	(-1OBJ-SAP.SG)	1SG→2SG	<u>-En-an</u>	(-2OBJ-SAP.SG)
2PL→1SG	<u>-e-yε:k</u>	(-1OBJ-2PL)	1SG→2PL	<u>-En-akok</u>	(-2OBJ-1SG:2PL)
2→1PL	<u>-e-yahk</u>	(-1OBJ-1PL)	1PL→2	<u>-En-ahk</u>	(-2OBJ-1PL)

Table 5: Menominee

1SG→3	<u>-Ø-ak</u>	(-3OBJ-1SG:3)	★ 3→1SG	<u>-i-t</u>	(-1OBJ-3)
2SG→3	<u>-Ø-at</u>	(-3OBJ-2SG:3)	★ 3→2SG	<u>-ik-k</u>	(-2OBJ-3)
1PL→3	<u>-Ø-akint</u>	(-3OBJ-1PL:3)	3→1PL	<u>-i-yamint</u>	(-1OBJ-3:1PL)
21PL→3	<u>-Ø-ankw</u>	(-3OBJ-21PL)	3→21PL	<u>-ir-ankw</u>	(-2OBJ-21PL)
2PL→3	<u>-Ø-e:kw</u>	(-3OBJ-2PL)	3→2PL	<u>-ir-a:kw</u>	(-2OBJ-3:2PL)
★ 2SG→1SG	<u>-i-yan</u>	(-1OBJ-2SG)	★ 1SG→2SG	<u>-ir-a:n</u>	(-2OBJ-1SG)
2PL→1SG	<u>-i-ye:kw</u>	(-1OBJ-2PL)	1SG→2PL	<u>-ir-akok</u>	(-2OBJ-1SG:2PL)
2→1PL	<u>-i-ya:nk</u>	(-1OBJ-1PL)	1PL→2	<u>-ir-a:nk</u>	(-2OBJ-1PL)

Table 6: Old Algonquin

1SG→3	<u>-Ø-ak</u>	(-3OBJ-1SG:3)	★ 3→1SG	<u>-i-t</u>	(-1OBJ-3)
2SG→3	<u>-Ø-at</u>	(-3OBJ-2SG:3)	★ 3→2SG	<u>-ik-k</u>	(-2OBJ-3)
1PL→3	<u>-Ø-ankit</u>	(-3OBJ-1PL&3)	3→1PL	<u>-i-yankit</u>	(-1OBJ-1PL&3)
21PL→3	<u>-Ø-ank</u>	(-3OBJ-21PL)	3→21PL	<u>-in-ank</u>	(-2OBJ-21PL)
2PL→3	<u>-Ø-e:k</u>	(-3OBJ-2PL)	3→2PL	<u>-in-e:k</u>	(-2OBJ-2PL)
★ 2SG→1SG	<u>-i-yan</u>	(-1OBJ-2SG)	★ 1SG→2SG	<u>-in-a:n</u>	(-2OBJ-1SG)
2PL→1SG	<u>-i-ye:k</u>	(-1OBJ-2PL)	1SG→2PL	<u>-in-akok</u>	(-2OBJ-1SG:2PL)
2→1PL	<u>-i-ya:nk</u>	(-1OBJ-1PL)	1PL→2SG	<u>-iko:-yan</u>	(-INV-2SG)
			1PL→2PL	<u>-iko:-ye:k</u>	(-INV-2PL)

Table 7: Southwestern Ojibwe

1SG→3	- <u>Ø</u> -ak	(-3OBJ-1SG:3)	★ 3→1SG	- <u>i</u> -t	(-1OBJ-3)
2SG→3	- <u>Ø</u> -at	(-3OBJ-2SG:3)	★ 3→2SG	-is-k	(-2OBJ-3)
1PL→3	- <u>Ø</u> -akiht	(-3OBJ-1PL:3)	3→1PL	-i-yamiht	(-1OBJ-3:1PL)
21PL→3	- <u>Ø</u> -ahkw	(-3OBJ-21PL)	3→21PL	-it-ahkw	(-2OBJ-21PL)
2PL→3	- <u>Ø</u> -e:kw	(-3OBJ-2PL)	3→2PL	-it-a:kw	(-2OBJ-3:2PL)
★ 2SG→1SG	-i-yan	(-1OBJ-2SG)	★ 1SG→2SG	-it-a:n	(-2OBJ-1SG)
2PL→1	-i-ye:kw	(-1OBJ-2PL)	1→2PL	-it-akok	(-2OBJ-1:2PL)
2SG→1PL	-i-ya:hk	(-1OBJ-1PL)	1PL→2SG	-it-a:hk	(-2OBJ-1PL)

Table 8: Moose Cree

1SG→3	- <u>Ø</u> -ak	(-3OBJ-1SG:3)	★ 3→1SG	- <u>i</u> -t	(-1OBJ-3)
2SG→3	- <u>Ø</u> -at	(-3OBJ-2SG:3)	★ 3→2SG	-is-k	(-2OBJ-3)
1PL→3	-a:-ya:hk	(-3OBJ-1PL)	3→1PL	-iko-ya:hk	(-INV-1PL)
21PL→3	-a:-yahkw	(-3OBJ-21PL)	3→21PL	-iko-yahkw	(-INV-21PL)
2PL→3	-a:-ye:kw	(-3OBJ-2PL)	3→2PL	-iko-ye:kw	(-INV-2PL)
★ 2SG→1SG	-i-yan	(-1OBJ-2SG)	★ 1SG→2SG	-it-a:n	(-2OBJ-1SG)
2PL→1SG	-i-ye:kw	(-1OBJ-2PL)	1SG→2PL	-it-akok	(-2OBJ-1SG:2PL)
2→1PL	-i-ya:hk	(-1OBJ-1PL)	1PL→2	-it-a:hk	(-2OBJ-1PL)

Table 9: Plains Cree

1SG→3	- <u>Ø</u> -ak	(-3OBJ-1SG:3)	★ 3→1SG	- <u>i</u> -t	(-1OBJ-3)
2SG→3	- <u>Ø</u> -at	(-3OBJ-2SG:3)	★ 3→2SG	-is-k	(-2OBJ-3)
1PL→3	- <u>Ø</u> -ači:t	(-3OBJ-1PL:3)	3→1PL	-i:-mi:t	(-1OBJ-3:1PL)
21PL→3	- <u>Ø</u> -a:kw	(-3OBJ-21PL)	3→21PL	-it-a:kw	(-2OBJ-21PL)
2PL→3	- <u>Ø</u> -e:kw	(-3OBJ-2PL)	3→2PL	-it-a:kw	(-2OBJ-3:2PL)
★ 2SG→1SG	-i:-n	(-1OBJ-2SG)	★ 1SG→2SG	-it-a:n	(-2OBJ-1SG)
2PL→1SG	-i:-e:kw	(-1OBJ-2PL)	1SG→2PL	-it-ikut	(-2OBJ-1SG:2PL)
2→1PL	-i:-a:t	(-1OBJ-1PL)	1PL→2	-it-a:t	(-2OBJ-1PL)

Table 10: Sheshatshiu Innu

1SG→3	- <u>Ø</u> - <u>ək</u>	(-3 <u>OBJ</u> -1 <u>SG</u> :3)	★ 3→1SG	- <u>i</u> - <u>t</u>	(-1 <u>OBJ</u> -3)
2SG→3	- <u>Ø</u> - <u>ət</u>	(-3 <u>OBJ</u> -2 <u>SG</u> :3)	★ 3→2SG	- <u>əs</u> - <u>k</u>	(-2 <u>OBJ</u> -3)
1PL→3	- <u>Ø</u> - <u>əkət</u>	(-3 <u>OBJ</u> -1 <u>PL</u> :3)	3→1PL	- <u>i</u> - <u>namət</u>	(-1 <u>OBJ</u> -3:1 <u>PL</u>)
21PL→3	- <u>Ø</u> - <u>kw</u>	(-3 <u>OBJ</u> -21 <u>PL</u>)	3→21PL	- <u>ul</u> - <u>kw</u>	(-2 <u>OBJ</u> -21 <u>PL</u>)
2PL→3	- <u>Ø</u> - <u>oq</u>	(-3 <u>OBJ</u> -2 <u>PL</u>)	3→2PL	- <u>ul</u> - <u>oq</u>	(-2 <u>OBJ</u> -2 <u>PL</u>)
★ 2SG→1SG	- <u>i</u> - <u>n</u>	(-1 <u>OBJ</u> -2 <u>SG</u>)	★ 1SG→2SG	- <u>ul</u> - <u>an</u>	(-2 <u>OBJ</u> -1 <u>SG</u>)
2PL→1SG	- <u>i</u> - <u>oq</u>	(-1 <u>OBJ</u> -2 <u>PL</u>)	1SG→2PL	- <u>ul</u> - <u>oq</u>	(-2 <u>OBJ</u> -2 <u>PL</u>)
2→1PL	- <u>i</u> - <u>ek</u>	(-1 <u>OBJ</u> -1 <u>PL</u>)	1PL→2	- <u>ul</u> - <u>ek</u>	(-2 <u>OBJ</u> -1 <u>PL</u>)

Table 11: Mi'kmaq

1SG→3	- <u>Ø</u> - <u>ok</u>	(-3 <u>OBJ</u> -1 <u>SG</u> :3)	★ 3→1SG	- <u>i</u> - <u>t</u>	(-1 <u>OBJ</u> -3)
2SG→3	- <u>Ø</u> - <u>ət</u>	(-3 <u>OBJ</u> -2 <u>SG</u> :3)	★ 3→2SG	- <u>əs</u> - <u>k</u>	(-2 <u>OBJ</u> -3)
1PL→3	- <u>Ø</u> - <u>okət</u>	(-3 <u>OBJ</u> -1 <u>PL</u> :3)	3→1PL	- <u>i</u> - <u>nəmət</u>	(-1 <u>OBJ</u> -3:1 <u>PL</u>)
21PL→3	- <u>Ø</u> - <u>əkw</u>	(-3 <u>OBJ</u> -21 <u>PL</u>)	3→21PL	- <u>əl</u> - <u>inək</u>	(-2 <u>OBJ</u> -3:21 <u>PL</u>)
2PL→3	- <u>Ø</u> - <u>ekw</u>	(-3 <u>OBJ</u> -2 <u>PL</u>)	3→2PL	- <u>əl</u> - <u>inak</u>	(-2 <u>OBJ</u> -3:2 <u>PL</u>)
★ 2SG→1SG	- <u>i</u> - <u>yin</u>	(-1 <u>OBJ</u> -2 <u>SG</u>)	★ 1SG→2SG	- <u>əl</u> - <u>an</u>	(-2 <u>OBJ</u> -1 <u>SG</u>)
2PL→1SG	- <u>i</u> - <u>yekw</u>	(-1 <u>OBJ</u> -2 <u>PL</u>)	1SG→2PL	- <u>əl</u> - <u>ekw</u>	(-2 <u>OBJ</u> -2 <u>PL</u>)
2→1PL	- <u>i</u> - <u>yek</u>	(-1 <u>OBJ</u> -1 <u>PL</u>)	1PL→2	- <u>əl</u> - <u>ek</u>	(-2 <u>OBJ</u> -1 <u>PL</u>)

Table 12: Maliseet-Passamaquoddy

1SG→3	- <u>Ø</u> - <u>ak</u>	(-3 <u>OBJ</u> -1 <u>SG</u> :3)	★ 3→1SG	- <u>i</u> - <u>t</u>	(-1 <u>OBJ</u> -3)
2SG→3	- <u>Ø</u> - <u>at</u>	(-3 <u>OBJ</u> -2 <u>SG</u> :3)	3→2SG	- <u>ək</u> - <u>an</u>	(-INV-2 <u>SG</u>)
1PL→3	- <u>Ø</u> - <u>e:nk</u>	(-3 <u>OBJ</u> -1 <u>PL</u>)	3→1PL	- <u>ək</u> - <u>e:nk</u>	(-INV-1 <u>PL</u>)
21PL→3	- <u>Ø</u> - <u>ankw</u>	(-3 <u>OBJ</u> -21 <u>PL</u>)	3→21PL	- <u>ək</u> - <u>ankw</u>	(-INV-21 <u>PL</u>)
2PL→3	- <u>Ø</u> - <u>e:kw</u>	(-3 <u>OBJ</u> -2 <u>PL</u>)	3→2PL	- <u>ək</u> - <u>e:kw</u>	(-INV-2 <u>PL</u>)
2SG→1SG	- <u>ə</u> - <u>yan</u>	(-1 <u>OBJ</u> -2 <u>SG</u>)	1SG→2SG	- <u>əl</u> - <u>an</u>	(-2 <u>OBJ</u> -2 <u>SG</u>)
2PL→1SG	- <u>ə</u> - <u>ye:kw</u>	(-1 <u>OBJ</u> -2 <u>PL</u>)	1SG→2PL	- <u>əl</u> - <u>e:kw</u>	(-2 <u>OBJ</u> -2 <u>PL</u>)
2→1PL	- <u>ə</u> - <u>ye:nk</u>	(-1 <u>OBJ</u> -1 <u>PL</u>)	1PL→2	- <u>əl</u> - <u>e:nk</u>	(-2 <u>OBJ</u> -1 <u>PL</u>)

Table 13: Unami Delaware

1SG→3	-Ø- ak	(-3OBJ-1SG:3)	3→1SG	-əkwɪ:- yā:n	(-INV-1SG)
2SG→3	-Ø- at	(-3OBJ-2SG:3)	3→2SG	-əkwɪ:- yan	(-INV-2SG)
1PL→3	-Ø- akət	(-3OBJ-1PL:3)	3→1PL	-əkwɪ:- yak	(-INV-1PL)
21PL→3	-Ø- akət	(-3OBJ-1PL:3)	3→21PL	-əkwɪ:- yak	(-INV-1PL)
2PL→3	-Ø- a:k	(-3OBJ-2PL)	3→2PL	-əkwɪ:- ya:k	(-INV-2PL)
★ 2SG→1SG	-i:- yan	(-1OBJ-2SG)	★ 1SG→2SG	-ən- ā:n	(-2OBJ-1SG)
2PL→1SG	-i:- ya:k	(-1OBJ-2PL)	1SG→2PL	-ən- a:k	(-2OBJ-2PL)
2→1PL	-i:- yak	(-1OBJ-1PL)	1PL→2	-ən- ak	(-2OBJ-1PL)

Table 14: Massachusett