Cyclicity in Morphological Movement: The Case of Potawatomi Inverse Marking

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Abstract

In this paper I show that analysing Potawatomi inverse marking in Harmonic Serialism (Müller (2020)), a derivational version of Optimality Theory, as a reflex of morphological movement obliterates the need for assuming two Voice heads in the syntax, nominative-accusative and absolutive-ergative alignment at the same time, or one exponent encoding both arguments. In addition to inverse marking, morphological movement and movement-related repair operations can derive participant reduction, i.e. the unexpected absence of certain exponents whenever they realise the less salient argument. My analysis crucially relies on the STRICT CYCLE CONDITION (SCC) as well as on the CYCLIC PRINCIPLE as assumed for Merge and movement operations in Transformational Grammar (Chomsky (1957)) (and as proposed for syntax and morphology by Bobaljik (2000: 3)): There are two cycles, one for Merge operations and a second one for movement, and Merge and movement are subject to the same cyclic domains, i.e. exponents must move in the same order in which they are merged. While the CYCLIC PRINCIPLE makes predictions for movement, the SCC makes predictions for deletion and insertion. Moreover, a branching derivation (see Müller (2023), this volume) of exponence-driven insertion strengthens the SCC in comparison to a non-branching derivation.

1. Introduction

In Potawatomi (Algonquian, North America) transitive animate (TA, see section 2) verbs (see Hockett (1948) or Stump (2001)), a direct (DIR) marker /a/ occurs when the subject is a speech act participant (SAP, i.e. 1st or 2nd person) and the object has 3rd person features, as in (1a), or when both subject and object are 3rd person but the object is marked as obviative (**less salient**), as in (1c). In the reverse cases, where a 3rd person subject acts on an SAP object,

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as in (1b), or an obviative 3rd person subject acts on a proximate 3rd person object, as in (1d), instead of /a/, an inverse (INV) marker /UkO/ occurs in the inflected forms that are otherwise identical to the direct forms in (1a) and (1c).

(1) a. k-wapm-**a**-wa-k
'you (pl.) see them'
b. k-wapm-**UkO**-wa-k
'they see you(pl.)'
c. w-wapm-**a**-wa-n
'they see him (obv.)'
d. w-wapm-**UkO**-wa-n
'he (obv.) sees them'

In short, the direct marker occurs when the subject outranks the object on a person hierarchy as in (2), and the inverse marker occurs when the object outranks the subject.

(2) 1/2 > 3 > 3OBV

I derive this pattern as follows: An exponent realising the **less salient**[1] argument on a salience hierarchy 2/1 > 3 > OBV morphologically moves to the right edge of the word and leaves a copy in the base position which is overtly realised by the direct or inverse marker, where the direct marker /a/ is a copy of object movement and the inverse marker /UkO/ is a copy of subject movement.

There are numerous approaches to direct / inverse marking in numerous morphological theories, which differ regarding which grammatical category direct and inverse markers encode: They have been analysed as portmanteau markers encoding case and transitivity (Halle and Marantz (1993)), as case and person (Branigan and MacKenzie (2002), Henze and Zimmermann (2011), Bruening (2017)), as case, person, and animacy/salience (Wunderlich (1997), Stiebels (2002), Trommer (2001, 2006), as person markers that in reality must be assumed to have case diacritics (Despić et al. (2019), Steele (1995)), as instances of differential case marking where either ergative or accusative is assigned (Déchaine (1999), Kushnir (2015)). In Oxford (2018, 2022), the inverse marker is analysed as an elsewhere marker and the direct marker as a 3rd person object marker, in Stump (2001) direct and inverse markers realise a major reference feature that is assigned to either the subject or the object or no argument, and in Anderson (1992) the inverse marker is analysed as a reflex of modification of the morphosyntactic node into which exponents are inserted. The trade-offs of these approaches are that the DIR and INV markers

[1]Throughout the paper, exponents realising the **less salient** argument are **boldfaced** while exponents realising the *more salient* argument are *slanted.*

have to encode features of both subject and object (in the analyses of DIR and INV as portmanteaux), two Voice heads or case alignment systems have to be assumed (as in Déchaine (1999), Kushnir (2015), and Oxford (2018, 2022)), or the analysis relies on specific features or a morphosyntactic operation that cannot be independently argued for (Stump (2001), Anderson (1992)).

In this paper, I present an analysis previously developed in Andermann (2022) in which the distribution of the direct and inverse marker is derived via morphological movement. First, all exponents realising the **less salient** argument are merged, then all exponents realising the *more salient* argument are merged, and finally, exponents realising the **less salient** argument move to the right edge of the word, leaving a copy in the base position which is overtly realised by the direct marker in the case of object movement, as schematised in (3a-b) and by the inverse marker in the case of subject movement, as schematised in (3c-d).

(3) a. stem-**obj**-*subj* ⇒ c. stem-**subj**-*obj* ⇒
b. stem-**DIR**-*subj*-**obj** d. stem-**INV**-*obj*-**subj**

Morphological theories differ as to whether they allow for such movement of exponents or even predict it. Most morphological theories such as Paradigm Function Morphology (Stump (2001)), Network Morphology (Brown and Hippisley (2012)), Minimalist Morphology (Wunderlich (1997)) and Information-Based Morphology (Crysmann and Bonami (2016)) have no possibility of deriving morphological movement. In Distributed Morphology (Halle and Marantz (1993)), exponent movement is possible but has to be derived via additional operations such as lowering (Embick and Noyer (2001)), local dislocation (Embick and Noyer (2001)), or metathesis (Arregi and Nevins (2012)).

In a derivational optimality-theoretic framework like Harmonic Serialism (Müller (2020)), on the other hand, movement follows without further ado from the interaction of exponent realisation (henceforth *Merge*) and alignment constraints. In each step of the derivation, only one operation (Merge, movement, or deletion of an exponent) may be carried out. Given a ranking MERGE CONDITION » L ⇐ Root » MAX(X) » MAX(Y) » X ⇒ R, where the MERGE CONDITION requires Merge of exponents and the ranking of MAX constraints determines the order in which the exponents X and Y are merged, MAX(X) is ranked highest of all MAX constraints, and an exponent X must be merged as a suffix due to a high-ranked constraint L ⇐ Root requiring the root to be aligned with the left edge of the word. Subsequently, another exponent Y must be merged, also as a suffix, in violation of the constraint X ⇒ R that requires X to be right-aligned. Merging Y as a prefix would violate L ⇐ Root, and not merging Y would violate MAX(Y), which is ranked higher than X ⇒ R. In the next step of the derivation, however, X ⇒ R can be satisfied by movement of X to the right edge of the word. Note that movement is only possible because the constraints are satisfied one after another. In Standard Parallel Optimality Theory (SPOT), X and Y would be realised simultaneously, with X at the right edge. The derivational nature of Harmonic Serialism is therefore crucial for the analysis developed below.

In addition to being derivational, a movement-based analysis of the Potawatomi TA Independent Order paradigm must also be cyclic. Following Müller (2020), I adopt two notions of cyclicity. Firstly, there are two morphological cycles, each followed by a phonological cycle; one morphological cycle is finished when all exponents have been merged, and a further morphological cycle is finished when all other operations (movement, deletion, etc.) have taken place such that the inflectional form cannot be further optimised. Given this assumption, it turns out that the Potawatomi paradigm is completely regular and well-behaved as far as (first-cycle) Merge operations are concerned, and complications such as the unexpected occurrence of direct and inverse markers as well as the unexpected absence of some exponents, as described in section 2, are due to movement and movement-related operations that take place in the second cycle.

Secondly, both Merge and movement operations obey the STRICT CYCLE CONDITION (SCC, based on Chomsky (1973)).

(4) STRICT CYCLE CONDITION
Within the current domain δ, an operation may not target a position included within another domain ε that is dominated by δ.

Merge proceeds from the root outwards, as in the toy example in (5), where E_1, E_2, E_3, and E_4 are exponents. Consequently, the current cyclic domain is always the domain that comprises the left and right edge of the inflectional form.

(5) a. root-E_1
b. root-E_1-E_2
c. root-E_1-E_2-E_3
d. E_4-root-E_1-E_2-E_3

This means that exponents may only be merged at the left or right edge in the first cycle and move only to the left or right edge in the second cycle, as in (6a). For deletion operations, Müller (2020) assumes a weak version of the SCC, represented in (6b). According to this weak version, deletion may also target a position adjacent to the leftmost or rightmost one provided that it is a consequence of the Merge or movement operation that applied immediately before. In (5c), for instance, as a consequence of merging E_3, E_2 may be deleted but not E_1. For repair-driven exponent insertion, an even weaker version is tacitly assumed in Andermann (2022) and made explicit in (6c), namely that this insertion need not even apply at a position adjacent to the edgemost one but must be a direct consequence of an immediately preceding operation that, in turn, must have targeted the leftmost or rightmost position.

(6) a. *Merge* and *movement* may only target the left or the right edge.
b. *Deletion* must target a position adjacent to the left- or rightmost position and must be the consequence of an immediately preceding Merge or movement operation (that has targeted the left or right edge, as per (6a))
c. *Repair-driven insertion* may apply to any position but must be a direct consequence of an immediately preceding Merge or movement operation (that has targeted the left or right edge, as per (6a)).

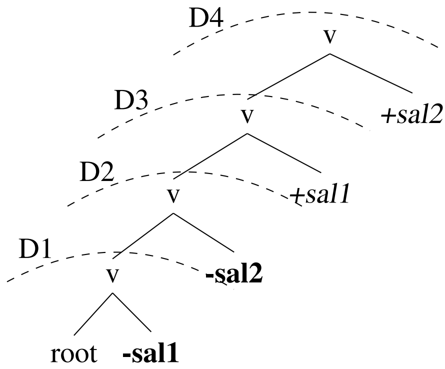
Moreover, as I show in section 4, for a successful derivation of the Potawatomi TA Independent Order paradigm, the CYCLIC PRINCIPLE as assumed for Transformational Grammar (formalised in (7), see e.g. Perlmutter and Soames (1979)) must hold for both first-cycle Merge and second-cycle movement operations in the same way such that both types of operations are subject to the same cyclic domains and each exponent constitutes a cyclic domain.

(7) CYCLIC PRINCIPLE
When two operations can be carried out, where one applies to the cyclic domain D_x and the other applies to the cyclic domain D_{x-1} included in D_x, then the latter is applied first.

In other words, all exponents must move in the same order in which they are merged, and an exponent may only move once the exponent previously merged has reached its final landing site.

For the case of Potawatomi, where first all exponents realising the less salient argument and then all exponents realising the more salient argument are merged, the cyclic domains are schematised in (8).

(8) *Cyclic domains in Merge and movement operations*



This resembles derivations in Transformational Grammar (Chomsky (1957), Perlmutter and Soames (1979)), where all basic phrase-structure building operations, which correspond to external Merge operations in both syntax and morphology, precede all transformations, including movement operations, and both types of operations proceed strictly bottom-up. Versions of the CYCLIC PRINCIPLE have been proposed for Minimalism under the name of the EARLINESS PRINCIPLE (see Pesetsky (1989), Pesetsky and Torrego (2001): A syntactic operation must apply as soon as its structural condition is met) and FEATURAL CYCLICITY (see Richards (2001), Preminger (2018): Active features that can trigger operations must do so as soon as possible). This notion of cyclicity has also been proposed by Bobaljik (2000: 3) for the morphology-syntax interface where a) morphology interprets syntax rather than feeding it, i.e. comes after syntax and b) morphology proceeds root-outwards. This means syntactic structure is interpreted via morphology in the same order in which it has been built, namely from the lowest, most embedded, to the highest domain.

This paper is structured as follows: section 2 is an overview of the person/number inflection paradigms of transitive animate verbs with which this paper is concerned. In section 3, I briefly discuss evidence for morphological movement and overt reflexes thereof and argue that these overt reflexes can be either full copies or minimally realised traces, as has been proposed by Pesetsky (1998), Hornstein (2000), and Bošković and Nunes (2007), among others, for overt (PF) reflexes of movement, and that in Potawatomi the inverse marker is a minimal trace rather than a full copy. Based on this reasoning, I illustrate my analysis of inverse marking as a minimal trace of exponent movement with two sample derivations, one of the direct form *n-wapm-**a**-k* ('I see them') and one of the inverse form *n-wapm-**UkO**-nan-k* ('they see us'). Section 5 concludes.

2. The Pattern

Potawatomi, like other Algonquian languages, has four types of verbs that differ by valency and animacy of their single or internal argument: Inanimate Intransitive (II); Animate Intransitive (AI); Transitive Inanimate (TI), where the object is inanimate; and Transitive Animate (TA), where the object is animate. Transitive Animate verbs have a direct paradigm where the subject outranks the object in the person hierarchy in (2), an inverse paradigm where the object outranks the subject, and a local paradigm where both arguments are speech act participants (SAP) and therefore ranked equally in the hierarchy. Furthermore, all verb types have different paradigms depending on whether they are used in main clauses (*independent order*) or subordinate clauses (*conjunct order*). This paper is concerned exclusively with TA verbs in the independent order.

Person/number inflection of Potawatomi TA verbs follows the template generally observed for Algonquian languages in the literature, as represented in (9). Inflectional forms consist of a prefix encoding person features of the *more salient* argument, the direct or inverse marker, also referred to as *theme sign* (Bloomfield (1946: 98-102)); a central ending (Goddard (1969: 38)) encoding person and number of the *more salient* argument; and a peripheral ending (Goddard (1969: 38)), which is either an obviative marker or realises person and number of the **less salient** argument.

(9) *Algonquian inflection template*

Prefix	Stem	Theme sign	Central ending	Peripheral ending
PERS		**DIR/INV**	PERS/NUM	**PERS/NUM//OBV**

The direct and inverse paradigms of Potawatomi Transitive Animate verbs (adapted from Hockett (1948)) are represented in (10)-(11).

(10) *Independent Order Transitive Animate Direct*

OBJ → SUBJ ↓	3SG	3PL	3OBV
1SG	n-wapm-**a**-∅	n-wapm-**a**-k	n-wapm-**a**-n
2SG	k-wapm-**a**-∅	k-wapm-**a**-k	k-wapm-**a**-n
3SG			w-wapm-**a**-n
1PL.INCL	k-wapm-**a**-mUn	k-wapm-**a**-mUn	k-wapm-**a**-mUn
1PL.EXCL	n-wapm-**a**-mUn	n-wapm-**a**-mUn	n-wapm-**a**-mUn
2PL	k-wapm-**a**-wa	k-wapm-**a**-wa-k	k-wapm-**a**-wa-n
3PL			w-wapm-**a**-wa-n

(11) *Independent Order Transitive Animate Inverse*

SUBJ → OBJ ↓	3SG	3PL	3OBV
1SG	n-wapm-**UkO**-∅	n-wapm-**UkO**-k	
2SG	k-wapm-**UkO**-∅	k-wapm-**UkO**-k	
3SG			w-wapm-**UkO**-n
1PL.INCL	k-wapm-**UkO**-nan	k-wapm-**UkO**-nan-k	
1PL.EXCL	n-wapm-**UkO**-nan	n-wapm-**UkO**-nan-k	
2PL	k-wapm-**UkO**-wa	k-wapm-**UkO**-wa-k	
3PL			w-wapm-**UkO**-wa-n

In most cases, the direct and inverse forms differ only in the direct/inverse marker, with the exception of the 1PL ↔ 3 forms, where the marker /mUn/ appears when a 1PL subject acts on a 3rd person object, and /nan/ occurs instead of /mUn/ when a 3rd person object acts on a 1PL subject. This, however, is only the case in the present tense forms, while in the preterite, /mUn/ encodes both 1PL subjects and 1PL objects. This suggests that /mUn/ is a generic 1PL marker and /nan/ is a 1PL object marker whose occurrence is restricted to the present tense by some mechanism I will disregard here. Apart from /nan/, no other marker is specified for case. The person prefixes, /k-/ for 2nd person, /n-/ for 1st person, and /w-/ for 3rd person, appear in the direct as well as in the inverse paradigm, as does the central ending /wa/ that marks 2PL and 3PL arguments as well as the peripheral endings /-k/ encoding less salient 3PL arguments and /-n/ realising obviative arguments. I therefore assume the feature specifications in (12) for exponents, where person is decomposed into [±1 ±2 ±3], number into [±pl], and obviation into [±obv]; and the 1PL object marker /nan/ is additionally specified for a feature [+ob(ject)].

(12) *Feature specifications*

a. *Prefixes*	b. *Central endings*	c. *Periph. endings*
/n_1/ ↔ [+1],	/mUn/ ↔ [+1 +pl],	∅ ↔ [+3 -pl]
/k_1/ ↔ [+2],	/nan/ ↔ [+1 +pl +ob],	/k_2/ ↔ [+3 +pl],
/w/ ↔ [+3],	/wa/ ↔ [-1 +pl],	/n_2/ ↔ [+3 +obv]

Given these feature specifications, a further problem arises in addition to the distribution of the direct and inverse marker: one has to account for the fact that 1) the person prefix /w/ encoding 3rd person surfaces only once in 3 ↔ 3OBV and never in SAP ↔ 3rd person configurations, 2) in 1st person plural contexts only the 2nd person prefix /k_1/ appears but not the 1st person prefix /n_1/, 3) that the central ending /wa/ encoding 2PL or 3PL does not occur in 1 ↔ 3PL constellations and occurs only *once* in 2PL ↔ 3PL and 3PL ↔ 3PL contexts. This phenomenon, known as *participant reduction* (Trommer (2003)), follows without further ado from the interaction of alignment constraints and MAX constraints in an optimality-theoretic framework. The absence of /w/ in the 2 ← 3PL forms in (1), for instance, can be derived by a ranking L ⇐ +2 » L ⇐ +3 » MAX (+2) » MAX (+3): Both affixes /k_1/ ↔ +2 and /w/ ↔ +3 compete for the position at the left edge of the word. Deleting /w/ ↔ +3 yields the best constraint profile as it satisfies the highest-ranked constraint (+2 is now at the left edge) and does not violate the next-highest ranked constraints L ⇐ +3 and MAX (+2), but only the lowest-ranked constraint MAX (+3). Similarly, the fact that the exponents /k_2 and /n_2/ occur after the 2PL/3PL exponent /wa/ and the 1PL.OBJ marker /nan/ but are dropped after the generic 1PL exponent /mUn/ can be accounted for by assuming high-ranked right-alignment and MAX constraints referring to the exponent /mUn/.

Thus, under the assumption that there are two morphological cycles, one for the Merge operations and one for the movement operations, the Potawatomi person/number inflection paradigm can be derived in a simple and straightforward manner as far as the Merge operations are concerned. All affixes are merged neatly in a row. Their insertion follows from the basic mechanism of disjunctive blocking by compatibility and specificity (implemented in OT by MAX and DEP/IDENT constraints) without any impoverishment rules and without portmanteau agreement. Rather, both unexpected exponence in the form of the direct and inverse marker and unexpected non-exponence in the form of participant reduction arise only in the second morphological cycle where movement and movement-related operations take place as they are repair phenomena driven by the interaction of alignment and MAX constraints.

3. Movement-Related Copying

Evidence for repair-driven exponence triggered by morphological movement comes from Bantu languages. Hyman (2003) discusses cases of exponent copying in Chichewa (see (13)-(14)) resulting from conflict between the Causative-Applicative-Reciprocal-Passive (CARP) template and the Mirror Principle. The affix order in (13a), for instance, where the applicative suffix /il/ precedes the reciprocal suffix /an/, is grammatical under the compositional ([[Appl] Rec]) interpretation as well as the non-compositional ([[Rec]Appl]) interpretation, whereas the reverse affix order in (13b), which would mirror the composition [[Rec]Appl], is ungrammatical.

(13) a. mang-il-an
tie-APPL-REC
'tie for each other'
[[Appl] Rec]
'tie each other for/at'
[[Rec] Appl]
b. *mang-an-il
tie-REC-APPL

(14) a. mang-an-il-an
tie-REC-APPL-REC
'tie each other for/at'
[[Rec] Appl]
*'tie for each other'
[[Appl] Rec]
b. *mang-il-an-il
tie-APPL-REC-APPL

However, under the [[Rec]Appl] interpretation, the form in (14a), where the reciprocal affix both precedes the applicative affix and follows it, is grammatical, thus respecting both the Mirror Principle and the CARP template. On the other hand, doubling of the applicative suffix, as in (14b), is ungrammatical.

Moreover, for (14a), only the compositional interpretation ([[Rec]Appl]) is available. Hyman (2003: 256-257) therefore argues that copying of the reciprocal suffix in (14c) is an instance of repair, and Gleim et al. (2023: 17) remark that the occurrence of such copies could be considered evidence for both morphological movement and movement-related copying.

A crucial difference between the Chichewa data in (13)-(14) and the Potawatomi data in (10)-(11) is that in Chichewa, the moved item and the copy are identical in shape whereas in Potawatomi, they are not. It is therefore not entirely clear whether in Chichewa it is the copy closer to the stem or the copy farther away from the stem which is inserted by repair. In contrast, in Potawatomi, the distribution of /a/ and /UkO/ suggests that these are copies of exponent movement. In (1a-b), the exponent /k_2/, realising the less salient 3PL argument, is at the right edge, no matter whether the less salient argument is the object, as in (1a), or the subject, as in (1b). The same holds for the obviation marker /n_2/ in the obviative contexts in (1c-d). The distribution of the direct and inverse marker, on the other hand, does depend on whether the less salient argument is a subject or an object but does not depend on the person and obviation feature specification of the less salient marker itself. Moreover, there is potential evidence for the direct marker /a/ being a generic object marker and /UkO/ being a generic subject marker from underspecified object constructions and underspecified subject constructions (Andermann (2022: 40-43)). This suggests that unlike Chichewa exponent movement, which leaves a full copy, Potawatomi exponent movement leaves a minimal trace realised by the direct or inverse marker.

In syntax, full and minimal realisations of overt movement reflexes have been analysed by Pesetsky (1998), Hornstein (2000), and Bošković and Nunes (2007) within the copy theory of movement, and their occurrence is attributed to constraints on pronunciation rather than to movement types. All these analyses rely on the assumption that movement always leaves copies, and that in the unmarked case all but one of these copies are deleted to satisfy a constraint SILENT-*t* requiring all lower copies to be deleted in Pesetsky (1998: 25) or as a consequence of Kayne's (1991) Linearity Correspondence Axiom (LCA) in Hornstein (2000) and Bošković and Nunes (2007). It is furthermore assumed in these approaches that there is a general preference for pronouncing only the highest copy and deleting all lower copies (see Bošković and Nunes (2007: 29)).

In cases of multiple overt realisations of full copies, Nunes (2004) and

Bošković and Nunes (2007) assume that the lower of the overtly realised copies is invisible to the LCA because it has undergone a morphosyntactic fusion operation (as proposed by Halle and Marantz (1993)) with an adjacent constituent before linearisation applies. Minimal realisations of copies, on the other hand, have been taken to be repair items introduced by the grammar to minimise violation of SILENT-*t* (Pesetsky (1998)) or to repair a PF violation incurred by LCA-triggered chain reduction (Hornstein (2000)). Crucially, Hornstein (2000: 171) points out that pronominals only ever occur in repair contexts, for which he accounts by excluding them from the numeration and positing that they are introduced by grammar, analogous to Arnold's (1995) analysis of do-support, where *do* is likewise not assumed to be part of the numeration.

In my analysis of Potawatomi inverse marking, to derive the distribution of the direct marker, which realises subject movement, and the object marker, which realises object movement, I assume that the exponent /k_2/ realising the less salient argument, by moving to the right edge, splits a feature [+subject] or [-subject] off in violation of a constraint MAX ([±subject]), which requires subsequent realisation by a marker encoding either [+subject] or [-subject]. To account for the fact that the generic object and subject markers are not inserted in the Merge cycle, I assume, following Hornstein (2000: 171), that they are excluded from the numeration and introduced by grammar.

4. Analysis

Let us now look at the derivation of Potawatomi transitive animate forms in detail. The tableaux in (24)-(35) and (36)-(47) show the derivations of the forms in (15), where a first person singular subject acts on a third person plural object, and (16), where a third person plural subject acts on a first person plural object:

(15) n-wapm-a-k
1-see-DIR-3PL
'I see them'

(16) n-wapm-UkO-nan-k
1-see-INV-1PL.OBJ-3PL
'they see us' (3PL > 1PL)

In the Harmonic Serialism framework developed by Müller (2020), a lexical-realisational morphological theory in Stump's (2001) sense, morphology is presyntactic and takes place in the numeration (see Chomsky (2001)). A stem in the lexicon is assumed to bear a fully specified, language-specific, well-formed set of inherent features (see (19)-(20)). Non-inherent features, which are also fully specified, are added in the numeration (see (21)-(22)). The resulting set of features, henceforth referred to as feature structure, provides the context for underspecified inflection markers that form part of *morphological arrays* as defined in (17):

(17) *Morphological arrays* (Müller (2020: 126))
An exponent α is in a morphological array for a grammatical category X (MA_X) in the domain of a syntactic category (part of speech) W iff (i), (ii), or (iii) hold.
(i) α realises a grammatical category Y in the domain of W by a morpho-syntactic feature that is a (possibly underspecified) instantiation of X.
(ii) α realises a grammatical category Y in the domain of W c feature that is a (possibly underspecified) instantiation of Y, and there is an exponent in MA_X that realises Y.
(iii) α is a unique radically underspecified exponent for X in the domain of W.

For each morphological array encoding a grammatical category (or fusion of categories) X, there is a structure-building feature [• X •] and a corresponding MERGE CONDITION MC(X), as defined in (18), which triggers morphological exponence. This feature [• X •] is part of the input but is discharged once the morphological array associated to it is accessed.

(18) MERGE CONDITION (Müller (2020: 14))
A structure-building feature [• X •] that is accessible in the input participates in (and is deleted by) a Merge operation in the output.

Transitive animate verbs in Potawatomi agree with both subject and object and therefore have two feature structures as well as two structure-building features [• Agr •](see (19))-(20) for the configurations 1SG > 3PL and 3PL > 1PL[2] Likewise, two morphological arrays are involved, each of which is associated to a feature structure. A constraint EXHAUST MORPHOLOGICAL ARRAY

[2]For ease of representation, the feature structure of the **less salient** argument is listed first and that of the *more salient* argument is listed second in both (i) and (ii) as well as in both (21a)-(21b) and (22a)-(22b).

(EXMORAR) ensures that, once a morphological array has been accessed, all exponents in that array which are compatible with the corresponding feature structure have to be merged *before* the other morphological array can be accessed (see Müller (2020: 141), Andermann (2022: 29)).

The inherent features of feature structures and exponents in Potawatomi are [± 1], [±2], [±3] for person, [± pl(ural)] for number, [± obv] for obviation and [±obj(ect)] for case to account for the distribution of the suffix /nan/. Apart from /nan/ there are no markers in the morphological array whose distribution is sensitive to case / grammatical function.

(19) *Inherent feature structures:*
1SG > 3PL
[$_V$ wapm] : [•Agr•] [•Agr•]
[-1-2+3+pl-obv] [+1-2-3-pl-obv]

(20) *Inherent feature structures:*
3PL > 1PL
[$_V$ wapm] : [•Agr•] [•Agr•]
[-1-2+3+pl-obv] [+1-2-3+pl-obv]

Before Merge takes place, an operation comparable to the Major Reference assignment function in Stump (2001) determines which of the feature structures is **less salient** and which one is *more salient*, based on the salience hierarchy *1/2 > 3 >* OBV that has already been proposed for Algonquian languages (see Trommer (2001) on Menominee, Kushnir (2015) on Plains Cree, Bruening (2017) on Passamaquoddy-Maliseet, and Despić et al. (2019) on Cheyenne) and, in slightly modified versions, also for Potawatomi (see Wunderlich (1997), Stiebels (2002), Henze and Zimmermann (2011)). By this operation, the binary feature [± sal(ient)] is added to the feature structures, i.e. the **less salient** feature structure is assigned the feature [-sal] while the more salient feature structure is assigned [+sal], as exemplified in (19a-b) for the configuration 1SG > 3PL and in (20a-b) for the configuration 3PL > 1PL. In local contexts, both feature structures are [+sal].

(21) 1SG > 3PL*:*

a. *Assign [-sal] and [+sal]*
[$_V$wapm]:[•Agr•][•Agr•]
[-1-2+3+pl-obv**-sal**]
[+1-2-3-pl-obv*+sal*]

b. *Assign [-su] and [+su]*
[$_V$wapm]:[•Agr•][•Agr•]
[-1-2+3+pl-obv**-sal**-*su*]
[+1-2-3-pl-obv*+sal+su*]

(22) 3PL > 1PL*:*

a. *Assign [-sal] and [+sal]*
[$_V$wapm]:[•Agr•][•Agr•]
[-1-2+3+pl-obv**-sal**]
[+1-2-3+pl-obv*+sal*]

b. *Assign [-su] and [+su]*
[$_V$wapm]:[•Agr•][•Agr•]
[-1-2+3+pl-obv**-sal**+*su*]
[+1-2-3+pl-obv*+sal-su*]

The feature [±sal] then percolates onto the morphological array associated with the feature structure, e.g. if a feature structure is assigned [-sal], then every exponent in the morphological array associated with it is assigned [-sal]. The same holds for [+sal]. The feature [±sal] is discharged after movement triggered by an alignment constraint referring to [±sal], i.e. after the exponent has moved, the feature is not present on it any more.

Via an operation analogous to assigning the binary salience feature, a binary grammatical function feature [±su(bject)] is assigned to the respective feature structures (possibly based on the inherent [±ob(ject)] feature), as shown in (24), and also percolates onto the corresponding morphological arrays.

Unlike the [±sal] feature, however, the [±su] feature is not immediately active but has to be activated by movement, i.e. it is only active after the first exponent has moved. Moreover, there is no movement based on [±su] (as there are no alignment constraints that refer to it), so [± su] is not discharged by movement, but ends up stranded in the base position whenever a) it is active and b) salience-driven movement takes place.

Whenever a [±su] feature is stranded, the DIR/INV markers are inserted; the DIR marker realises stranded [-su] and the INV marker realises [+su]. As repair elements, the DIR and INV markers are not part of the morphological arrays associated with the feature structures but form a separate morphological array.

Merge is assumed to follow the functional sequence of grammatical categories (*f-seq*, see Starke (2001)) that is assumed to hold for both morphology and syntax. By *f-seq*, one might expect that exponents realising the object are merged before exponents realising the subject since objects are lower in the syntactic structure than subjects. However, if one argument is specified for [-sal] and the other one is specified for [+salient], as is the case in Potawatomi, exponents realising the argument specified as [-sal] have to be merged first, as exemplified in (23) for the underlying representation of *n-wapm-a-k* ('I see them').

(23) 1SG > 3PL*: Merge operations*

a. wapm **-w**
b. wapm -w -$\mathbf{k_2}$
c. wapm -w -$\mathbf{k_2}$ **-wa**
d. wapm -w -$\mathbf{k_2}$ **-wa** -n_1

4.1. Derivation of *N-wapm-a-k* 'I See Them'

The tableaux in (24) - (35) show the derivation of the form *n-wapm-a-k* ('I see them'), 1SG > 1PL. Note that, for reasons of space, not all constraints can be listed in all tableaux. Rather, in many tableaux, the only constraints indicated are those that are relevant for the current step in the derivation.

4.1.1. First Cycle: Merge

Given that the exponents realising the less salient argument are merged first and the ones realising the more salient argument are merged next, and given that all exponents are merged as suffixes, the first cycle where all Merge operations take place is predicted to yield the final output *wapm-**w**-**k$_2$**-**wa**-n$_1$*.

(24) *n-wapm-a-k ('I see them'), Step 1: Merge **w** ↔ [+3 -su -sal])*

		MINSAT	EXMORAR	REMOVE CONDITION	MC(AGR)	IDENTFEATURE	-SAL ⇒ R	NUM ⇒ R	L ⇐ PERS	L ⇐ RT
I_0	wapm [•Agr•] [•Agr•] **[-1 -2 +3 +pl +obj -obv (-su) -sal]** [+1 -2 -3 -pl -obj -obv (+su) +sal] {$_{Agr}$/n/↔[+1 (-su) -sal], $_{Agr}$/k$_1$/↔[+2 (-su) -sal], **$_{Agr}$/w/↔[+3 (-su) -sal],** $_{Agr}$ ∅ ↔ [+3 -pl (-su) -sal] $_{Agr}$/mUn/↔[+1 +pl (-su) -sal], $_{Agr}$/nan/$_{[-AGR-]}$↔[+1 +pl +ob (-su) -sal], $_{Agr}$/wa/↔[-1 +pl (-su) -sal], $_{Agr}$/k$_2$/↔[+3 +pl -sal (-su) -sal], $_{Agr}$/n$_2$/↔[+3 +obv (-su) -sal],...}									
	O_1: wapm [•Agr•]				*!					
	O_2: wapm-n$_1$					*!				
	O_3: wapm-k$_1$					*!				
☞	O_4: wapm-**w**									
	O_5: w-wapm									*!
	O_6: wapm-∅					*!				
	O_7: wapm-mUn					*!				
	O_8: wapm-nan					*!				
	O_9: wapm-wa	*!								
	O_{10}: wapm-k$_2$	*!								
	O_{11}: wapm-n$_2$					*!				

In the first step of the derivation in (24), candidate O_4 wins, where w ↔ [+3] is merged as a suffix, satisfying MC-AGR, IDENT-FEATURE, and L ⇐ ROOT. The alignment constraint L ⇐PERS[3] is not violated because of its two-level nature (in the sense of Trommer (2001)); for a person exponent to be able to violate this constraint, the exponent has to be *already present in the input*, which is not the case when the exponent is merged.

(25) *n-wapm-a-k ('I see them'), Step 2: Merge* $\boldsymbol{k_2}$ *↔ [+3 +pl -su -sal]*

		MINSAT	EXMORAR	REMOVE CONDITION	MC(AGR)	IDENTFEATURE	-SAL ⇒ R	NUM ⇒ R	L ⇐ PERS	L ⇐ RT
I_4	wapm-**w** [• Agr •] **[-1 -2 +3 +pl +obj -obv (-su) -sal]** [+1 -2 -3 -pl -obj -obv (+su) +sal] {$_{Agr}$/n/↔[+1 (-su) -sal], $_{Agr}$/k_1/↔[+2 (-su) -sal], $_{Agr}$ ∅ ↔ [+3 -pl (-su) -sal] $_{Agr}$/mUn/↔[+1 +pl (-su) -sal], $_{Agr}$/nan/$_{[-AGR-]}$↔[+1 +pl +ob (+su) -sal], $_{Agr}$/wa/↔[-1 +pl (-su) -sal], **$_{Agr}$/k_2/↔[+3 +pl -sal (-su) -sal]**, $_{Agr}$/n_2/↔[+3 +obv (-su) -sal],...}									
	O_{41}:wapm-w		*!							
	O_{42}: wapm-w-n_1					*!	*			
	O_{43}: wapm-w-k_1					*!	*			
	O_{44}: wapm-w-∅					*!	*			
	O_{45}: wapm-w-mUn					*!	*			
	O_{46}: wapm-w-nan					*!	*			
	O_{47}: wapm-w-wa	*!					*			
☞	O_{48}: wapm-**w-k_2**						*			
	O_{49}: wapm-w-n_2					*!	*			

In the second step of the derivation in (25), the exponent /k_2/ ↔ [+3 +pl] is merged. In theory, both /k_2/ ↔ [+3 +pl] and /wa/ ↔ [-1 +pl] are compatible, but a constraint MINIMIZE SATISFACTION (MINSAT) requires that of multiple compatible exponents, the exponent that should always be merged is the one that realises the least amount of "new" features (that are not yet realised by some other exponent) and that therefore incurs the least number of constraint

[3] L ⇐PERS should be properly understood as L ⇐ +3. The constraints L ⇐ +2 » ⇐ +1 ⇐ +3 are subsumed under L ⇐ PERS in some tableaux for reasons of space. The same holds for the corresponding MAX constraints.

satisfactions while still improving the constraint profile (hence the constraint‘s name).

(26) *n-wapm-a-k (‘I see them’), Step 3: Merge* ***wa*** *↔ [-1 +pl +su -sal]*

		MinSat	ExMorAr	Remove Condition	MC(Agr)	IdentFeature	-sal ⇒ R	num ⇒ R	L ⇐ pers	L ⇐ Rt
I_{48}	wapm-w-k_2 [• Agr •] **[-1 -2 +3 +pl +obj -obv (-su) -sal]** [+1 -2 -3 -pl -obj -obv (+su) +sal] {$_{Agr}$/n_1/↔[+1 (+su) -sal], $_{Agr}$/k_1/↔[+2 (-su) -sal], $_{Agr}$ ∅ ↔ [+3 -pl (-su) -sal] $_{Agr}$/mUn/↔[+1 +pl (-su) -sal], $_{Agr}$/nan/$_{[-Agr-]}$↔[+1 +pl +ob (-su) -sal], **$_{Agr}$/wa/↔[-1 +pl (-su) -sal]**, $_{Agr}$/n_2/↔[+3 +obv (-su) -sal],...}									
	O_{481}:wapm-w-k_2		*!				*			
	O_{482}: wapm-w-k_2-n_1					*!	**	*		
	O_{483}: wapm-w-k_2-k_1					*!	**	*		
	O_{484}: wapm-w-k_2-∅					*!	**	*		
	O_{485}: wapm-w-k_2-mUn					*!	**	*		
	O_{486}: wapm-w-k_2-nan					*!	**	*		
☞	O_{487}: wapm-**w-k_2-wa**						**	*		
	O_{488}: wapm-w-k_2-n_2					*!	**	*		

In (26), the exponent /wa/ ↔ [-1 +pl] is merged. The fact that this exponent does not show up in the final output is accounted for in the second cycle, where both /wa/ and the third person plural marker k_2 compete for a position at the right edge, and /wa/, which loses the competition, is deleted due to low-ranked MAX(-1) and MAX(+pl) constraints.

After Merge of /wa/, the morphological array for the 3PL argument is exhausted as there are no more exponents compatible with the feature structure of that argument. As a consequence, the feature structure of the more salient 1SG argument is accessed, and the first person prefix /n_1/ is merged, as shown in (27). As the feature structure of the subject is specified for [+1] and [-pl], neither the 1PL markers /mUn/ and /nan/ nor the 3SG marker /wa/ can be merged, which means the second morphological array is exhausted after Merge of /n_1/, and the first morphological cycle is completed.

(27) *n-wapm-a-k ('I see them'), Step 4: Merge* n_1 ↔ *[+1 -su +sal]*

I_{487} wapm-w-k_2-wa [• Agr •] [-1 -2 +3 +pl +obj -obv (-su) -sal] *[+1 -2 -3 -pl -obj -obv (+su) +sal]* {$_{Agr}$*/n/↔[+1 (+su) +sal]*, $_{Agr}$/k_1/↔[+2 (+su) +sal], $_{Agr}$/w/↔[+3 (+su) +sal], $_{Agr}$ ∅ ↔ [+3 -pl (+su) +sal] $_{Agr}$/mUn/↔[+1 +pl (+su) +sal], $_{Agr}$/nan/$_{[-AGR-]}$↔[+1 +pl +ob (+su) +sal], $_{Agr}$/wa/↔[-1 +pl (+su) +sal], $_{Agr}$/k_2/↔[+3 +pl (+su) +sal], $_{Agr}$/n_2/↔[+3 +obv (+su) +sal],...}	MINSAT	EXMORAR	MC(AGR)	IDENTFEATURE	-SAL ⇒ R	NUM ⇒ R	L ⇐ PERS	L ⇐ RT
O_{4871}: wapm-w-k_2-wa [• Agr •]			*!		**			
☞ O_{4872}: wapm-**w**-**k_2**-**wa**-*n_1*				***		**		
O_{4873}: wapm-w-k_2-wa-k_1				*!	***	*	***	
O_{4874}: wapm-w-k_2-wa-w				*!	***	**		
O_{4875}: wapm-w-k_2-wa-∅				*!	***	**		
O_{4876}: wapm-w-k_2-wa-mUn				*!	***	**		
O_{4877}: wapm-w-k_2-wa-nan				*!	***	**		
O_{4878}: wapm-w-k_2-wa-wa				*!	***	**		
O_{4879}:wapm-w-k_2-wa-k_2				*!	***	**		
O_{48710}: wapm-w-k_2-wa-n_2				*!	***	**		

The final output of this cycle, *wapm-**w**-**k_2**-**wa**-n_1*, consists of nothing but person and person-number exponents that, as we have seen, are merged in a perfectly regular manner, first the exponents realising the **less salient** argument, then the exponent realising the *more salient* one. It is only in the second cycle that complications arise: exponents move to different positions, the direct marker /a/ is inserted as a reflex of exponent movement, and the markers /w/ and /wa/ are deleted.

4.1.2. Second Cycle: Movement

After all Merge operations have been carried out and the first morphological cycle is terminated, a second cycle takes place in which alignment-driven movement and movement-related repair operations take place. The final output from the first cycle, *wapm*-***w***-***k_2***-***wa***-*n_1*, serves as input to the second cycle, whose final output is *n_1-wapm*-***a***-***k_2***.

In the first step of the second-cycle derivation, driven by high-ranked -SAL ⇒ R, the first-merged exponent /w/ moves to the right edge and discharges its non-inherent feature **[-sal]**.

(28) *n-wapm-a-k ('I see them'), Step 5: Move* **w** *right and discharge [-sal]*

I_{4872} wapm-**w**-**k_2**-**wa**-*n_1*	-SAL ⇒ R	NUM ⇒ R	L⇐ +2	L⇐ +1	L⇐ +3	MAX (±SU)	MAX +2	MAX +1	MAX +3	MAX -1	MAX +PL
O_{48721} wapm-**w**-**k_2**-**wa**-*n_1*	**!	**		*	***						
O_{48722} **w**-wapm-**k_2**-**wa**-*n_1*	**!	**		*	***						
☞ O_{48723} wapm-**k_2**-**wa**-*n_1*-w	**	**		*	***						

After having discharged [-sal], /w/ moves to the left edge to satisfy the constraint L ⇐ [+3], as represented in (29), and remains there until it is later deleted by the first person exponent /n_1/.

(29) *n-wapm-a-k ('I see them'), Step 6: Move w left*

I_{48723} wapm-**k_2**-**wa**-*n_1*-w	-SAL ⇒ R	NUM ⇒ R	L⇐ +2	L⇐ +1	L⇐ +3	MAX (±SU)	MAX +2	MAX +1	MAX +3	MAX -1	MAX +PL
O_{487231} wapm-**k_2**-**wa**-*n_1*-w	**	**		*	***!						
☞ O_{487232} w-wapm-**k_2**-**wa**-*n_1*	**	**		*	**						

Crucially, movement of /w/ to the left is only possible at this point because the order of movement operations is determined by the CYCLIC PRINCIPLE in (7), according to which no other exponent can be moved until the exponent currently targeted has reached its final landing site. If the order of movement operations were driven by the ranking of alignment constraints alone, the marker /w/ would be predicted to remain in its suffix position while /k_2/ and /wa/ would move past it, as these exponents have not yet discharged their [-sal] feature and-SAL ⇒ R is ranked higher than L ⇐ [+3]. /w/ could not even be deleted by entering into competition with /k_2/ and /wa/ for the rightmost position as this competition is triggered by NUM ⇒ R, and /w/ only encodes person but not number. Deleting /w/ to repair the violation of L ⇐ 1 after all other movement steps have been carried out would violate the weakened version of the STRICT CYCLE CONDITION introduced in (6b), which requires deletion to be directly related to the immediately preceding operation (in this case, to result from competition with the previously-moved exponent) and requires any deleted exponent to be either at the left edge, right edge, or adjacent to the element at the left or right edge. The predicted final output would therefore be *n_1-wapm-a-w-k_2.

(30) *n-wapm-a-k ('I see them'), Step 7: Move* ***k_2*** *right, discharge [-sal] and strand [-su] in the base position*

I_{487232} wapm-**k_2**-**wa**-*n_1*-*nan*-w	-SAL ⇒ R	NUM ⇒ R	L⇐ +2	L⇐ +1	L⇐ +3	MAX (±SU)	MAX (PERS)	MAX +PL
$O_{48872321}$ w-wapm-**k_2**-**wa**-*n_1*	**!	**		*				
$O_{48872322}$ **k_2**-w-wapm-[-su]-**wa**-*n_1*	**!	**		*		*		
☞ $O_{48872323}$ w-wapm-[-su]-**wa**-*n_1*-k_2	*	*		*		*		

Now that the exponent /w/ has moved and discharged its **[-sal]** feature, the grammatical function feature [-su] becomes active, i.e. visible for morphology, on the exponent /k_2/. As /k_2/ moves to the right edge (represented in (31)), it splits off and strands the grammatical function feature [-su], which is required by a constraint MAX(±SU) to be realised by an exponent: in this case, the underspecified object marker /a/ (shown in (32)). As a repair element, this marker is not part of the numeration but is introduced by grammar.

(31) *n-wapm-a-k ('I see them'), Step 8: Insert generic object marker* ***a*** *to repair violation of* MAX *(±su)*

$I_{4872323}$ w-wapm-[+su]-**wa**-*n_1*-k_2	-SAL ⇒ R	NUM ⇒ R	L⇐ +2	L⇐ +1	L⇐ +3	MAX (±SU)	MAX (PERS)	MAX +PL
$O_{48723231}$ w-wapm-[-su]-**wa**-*n_1*-k_2	*	**		*	**	*!		
☞ $O_{48723232}$ w-wapm-**a**-**wa**-*n_1*-k_2	*	**		*	*			

Again, if the order of movement and movement-related operations were determined by the ranking of alignment and MAX constraints alone, insertion of /a/ would be predicted to take place *after* the other exponents have moved as MAX(±SU) is ranked lower than all alignment constraints. A later insertion of /a/, however, would violate the weakened STRICT CYCLE CONDITION, according to which repair-driven insertion must be a direct consequence of the immediately preceding (movement) operation, i.e. /a/ must be inserted immediately after /k_2/ has moved and stranded the feature [-su] in the base position. Crucially, insertion of /a/ is only possible at this point because the order of movement and movement-related operations is *not* determined by the ranking of alignment and MAX constraints alone but, first and foremost, by the CYCLIC PRINCIPLE.

While the insertion of /a/ under this approach is relatively unproblematic in that it respects the weak version of the SCC assumed for insertion, the process of *splitting* the feature [-su] *off* gives rise to a problem: this process must either occur simultaneously with movement of /k_2/, in analogy to Obata and Epstein's (2008) feature-splitting internal Merge in syntax, or there must be a designated feature splitting operation that precedes movement of /k_2/. The first option involving simultaneous application of feature splitting and movement is not compatible with the principle of Harmonic Serialism according to which only one process may apply in one step. The second option, where feature splitting precedes movement, violates the SCC.

This problem, however, can be solved by assuming what Müller (2023, this volume) refers to as *derivational branching*. In analogy to Müller's (2014) account of resumption (which, unlike the syntactic accounts of overt movement reflexes mentioned above, is not based on the copy theory of movement but on a generative approach to copying involving a designated operation[4]), the feature [±su] is either already split off and realised by the direct or inverse marker after *Merge* of /k_2/ or not split off and realised at all.

In the former case, the information that the feature has been split off is registered as a feature on a buffer (a list of movement-related features) on /k_2/. This feature is deleted if /k_2/ moves to the right edge but causes the derivation to crash, yielding ungrammaticality if /k_2/ does not move (which is predicted to lead to ungrammaticality anyway given high-ranked -SAL ⇒ R and the fact that /k_2/ is always specified for [-sal]). In the latter case (in which /k_2/ does not split [±su] off, which is then realised by a direct/inverse marker), on the

[4]For arguments in favour of such a generative approach to copying and against the copy theory of movement, see e.g. Müller (2016).

other hand, the result would be predicted to be grammatical if /k_2/ *does not* move. However, this is ruled out by high-ranked -SAL ⇒ R.

Note that in such a branching derivation, the CYCLIC PRINCIPLE would already be relevant at the Merge level, causing /a/ and /UkO/, which belong to the cyclic domain of /k_2/, to be inserted before the next exponent (in this case /wa/) is merged. Moreover, insertion of /a/ and /UkO/, if at all, applies immediately after Merge of /k_2/. This means that it targets the rightmost position, respecting the strongest version of the SCC and obliterating the need for its weakest version postulated for repair-driven insertion in (6c).

(32) *n-wapm-a-k ('I see them'), Step 9: Move* ***wa*** *to the right edge and discharge* ***[-sal]***

$I_{48723232}$ w-wapm-**a**-**wa**-n_1-k_2	-SAL ⇒ R	NUM ⇒ R	L⇐ +2	L⇐ +1	L⇐ +3	MAX +SU	MAX +2	MAX +1	MAX +3	MAX -1
$O_{487232321}$ w-wapm-**a**-**wa**-n_1-k_2	*!	*		*	*					
☞ $O_{487232322}$ w-wapm-**a**-n_1-k_2-wa		*		*	*					

Once the generic object marker /a/ is inserted and the cyclic domain of the second exponent /k_2/ is completed, the next exponent, /wa/, can move to the right edge and discharge its **[-sal]** feature (see (32)).

(33) *n-wapm-a-k ('I see them'), Step 10: Resolve competition of* ***wa*** *and* $\boldsymbol{k_2}$ *for the right edge by deleting* ***wa***

$I_{487232323}$ w-wapm-**a**-n_1-k_2-wa	-SAL ⇒ R	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX +SU	MAX +1	MAX +3	MAX -1	MAX +PL
$O_{487232321}$ w-wapm-**a**-n_1-k_2-wa		*!	*						
$O_{487232322}$ w-wapm-**a**-n_1-wa-k_2		*!	*						
$O_{487232323}$ w-wapm-**a**-n_1-□-wa			*				*!		*
☞ $O_{487232324}$ w-wapm-**a**-n_1-k_2-□			*					*	*

Now both /wa/ and /k_2/ compete for the position at the right edge, as they both encode number and the constraint NUM ⇒ R requires number exponents to be right-aligned. Since NUM ⇒ R is ranked higher than all MAX constraints including MAX +PL, deleting one of the exponents improves the constraint profile, and given the ranking MAX +3 » MAX -1, deletion of /wa/ ↔ [-1 +pl] wins over deletion of /k_2/ ↔ [+3 +pl] (see (33)).

(34) *n-wapm-a-k ('I see them'), Step 11: Move* n_1 *to the left edge*

$I_{487232324}$ w-wapm-**a**-n_1-k_2	-SAL ⇒ R	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX +SU	MAX +1	MAX +3	MAX -1
$O_{4872323241}$ w-wapm-**a**-n_1-k_2			*!					
☞ $O_{4872323242}$ n_1-w-wapm-**a**-k_2				*				

Finally, the marker /n_1/ moves to the left edge to satisfy L ⇐ +1 (see (34)). This movement, however, incurs a violation of L ⇐ +3, as /w/ ↔ [+3] is now to the right of /n_1/ and therefore not at the left edge any more.

(35) *n-wapm-a-k ('I see them'), Step 12: Resolve competition of w and* n_1 *for the left edge by deleting w*

$I_{4872323242}$ n_1-w-wapm-**a**-k_2	-SAL ⇒ R	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX +SU	MAX +2	MAX +1	MAX +3	MAX -1
$O_{48723232421}$ n_1-w-wapm-**a**-k_2				*!					
$O_{48723232422}$ w-n_1-wapm-**a**-k_2			*!						
$O_{48723232423}$ □-w-wapm-**a**-k_2							*!		
☞ $O_{48723232424}$ n_1-□-wapm-**a**-k_2								*	

Like /k_2/ and /wa/ in (32)-(33), the markers /n_1/ and /w/ compete for an edge position, except for it being leftmost one this time. Given the ranking L ⇐ +1 » L ⇐ +3 » MAX (+1) » MAX (+3), resolving the competition by deleting /w/ ↔ [+3] yields the best constraint profile. In fact, after /w/ is deleted, the derivation converges on the output *n_1-wapm-a-k_2* (see (35)).

The derivation of *n_1-wapm-a-k_2* has shown three things. Firstly, by assuming two separate morphological cycles, one for Merge and one for movement, one can see that Potawatomi TA verb forms are perfectly regular as far as Merge operations are concerned, and both unexpected exponence (insertion of the direct marker /a/) and unexpected non-exponence (deletion of /w/ and /wa/) arise only in the second cycle as a consequence of movement. Secondly, for insertion and deletion operations to not be ruled out by the weak versions of the SCC in (6b) and (6c), the order of movement operations has to follow the

CYCLIC PRINCIPLE in (7). And finally, adopting a derivational branching approach strengthens the SCC by removing the need for its weakest version in (6c). The need for the SCC itself is demonstrated in section 4.2.

4.2. Derivation of *N-wapm-UkO-nan-k* 'They See Us'

After having seen how the direct form *n-wapm-a-k* ('I see them', 1SG > 3PL) is derived, let us now consider the derivation of the inverse form *n-wapm-UkO-nan-k* ('They see us'), where a 3PL subject acts on a 1PL object. As shown in (22a) and (22b), it is the subject that bears the feature value **[-sal]** in inverse forms. As the exponent /k_2/, this time specified for [+su -sal], moves to the right edge, it strands the feature [+su], which is then overtly realised by the generic subject marker /UkO/.

4.2.1. First Cycle: Merge

In the Merge cycle, first all exponents realising the **less salient** 3PL subject and then all exponents realising the *more salient* 1PL object are merged, yielding the final output of the Merge cycle: *wapm-**w**-**k_2**-**wa**-n_1-nan*. Again, a 3PL argument and a first person argument are involved, the first Merge operations are almost identical to those in (24)-(27) except that on every exponent, the feature specifications for [±su] and [± sal] now have opposite feature values. However, after Merge of n_1 ↔ [+1 *-su +sal*], additional Merge steps are required, as this time, the first person argument is a first person plural object. Recall from section 2 that there are two first person plural markers, the generic /mUn/ and the more specific /nan/, which appears only in object contexts. The high-ranked constraint MINSAT which, of all compatible exponents, requires the most generic one to be merged, predicts that /mUn/ is merged first and only afterwards is Merge of /nan/ possible.

(36) *n-wapm-UkO-nan-k (‘they see us’), Step 5:Merge /mUn/ ↔ [+1 +pl -su +sal]*

I_{4872} wapm-w-k_2-wa-n_1 [-1 -2 +3 +pl +obj -obv (+su)-sal] *[+1 -2 -3 +pl -obj -obv (-su) +sal]* { $_{Agr}$/k_1/↔[+2 (-su) +sal], $_{Agr}$/w/↔[+3 (-su) +sal], $_{Agr}$ ∅ ↔ [+3 -pl (-su) +sal] $_{Agr}$*/mUn/↔[+1 +pl (-su) +sal],* $_{Agr}$/nan/$_{[-AGR-]}$↔[+1 +pl +ob (-su) +sal], $_{Agr}$/wa/↔[-1 +pl (-su) +sal], $_{Agr}$/k_2/↔[+3 +pl (-su) +sal], $_{Agr}$/n_2/↔[+3 +obv (-su) +sal],...}	MinSat	ExMorAr	Remove Condition	MC(Agr)	IdentFeature	-sal ⇒ R	num ⇒ R	L ⇐ pers	L ⇐ Rt
O_{48721}:wapm-w-k_2-wa-n_1		*!				***	**		
O_{48722}:wapm-w-k_2-wa-n_1-k_1					*!	***	**		
O_{48723}:wapm-wk_2-wa-n_1-w					*!	***	**		
O_{48724}: wapm-w-k_2-wa-n_1-∅					*!	***	**		
☞ O_{48725}: wapm-**w-k_2-wa**-*n_1-mUn*						***	**		
O_{48726}: wapm-w-k_2-wa-n_1-$nan_{[-AGR-]}$	*!					***	**		
O_{48727}: wapm-w-k_2-wa-n_1-wa					*!	***	**		
O_{48728}: wapm-w-k_2-wa-n_1-k_2					*!	***	**		
O_{48729}: wapm-w-k_2-wa-n_1-n_2					*!	***	**		

However, in the final output, only /nan/ appears, not /mUn/. Deleting /mUn/ in the 2nd morphological cycle as a result of competition for the position at the right edge of the word is not possible, since when /mUn/ rightfully occurs in 1PL subject contexts, it triggers exponent drop of /k_2/ and /n_2/ and must therefore be assumed to win the competition for the position at the right edge. Specifying /mUn/ as [+1 +pl -obj] to prevent it from being merged here is also not possible, as it would make wrong predictions for the preterite, where /mUn/ occurs in 1PL > 3 as well as 3 > 1PL contexts.

(37) *n-wapm-UkO-nan-k (‘they see us’), Step 6: Merge /nan$_{[-R-]}$/ ↔ [+1 +pl +ob -su +sal]*

I_{48725}: wapm-**w**-**k$_2$**-**wa**-*n$_1$-mUn* [-1 -2 +3 +pl +obj -obv (+su)-sal] *[+1 -2 -3 +pl -obj -obv (-su) +sal]* { $_{Agr}$/k$_1$/↔[+2 (-su) +sal], $_{Agr}$/w/↔[+3 (-su) +sal], $_{Agr}$ ∅ ↔ [+3 -pl (-su) +sal] *$_{Agr}$/nan/$_{[-AGR-]}$↔[+1 +pl +ob (-su) +sal]*, $_{Agr}$/wa/↔[-1 +pl (-su) +sal], $_{Agr}$/k$_2$/↔[+3 +pl (-su) +sal], $_{Agr}$/n$_2$/↔[+3 +obv (-su) +sal],...}	MinSat	ExMorAr	Remove Condition	MC(Agr)	IdentFeature	-sal ⇒ R	num ⇒ R	L ⇐ pers	L ⇐ Rt
O_{487251}:wapm-w-k$_2$-wa-n$_1$-mUn		*!			*!	**	***		
O_{487252}:wapm-w-k$_2$-wa-n$_1$-mUn-k$_1$					*!	***	***		
O_{487253}:wapm-w-k$_2$-wa-n$_1$-mUn-w					*!	***	***		
O_{487254}: wapm-w-k$_2$-wa-n$_1$-mUn-∅					*!	***	***		
☞ O_{487255}: wapm-**w**-**k$_2$**-**wa**-*n$_1$-mUn-nan$_{[-AGR-]}$*						***	***		
O_{487256}: wapm-w-k$_2$-wa-n$_1$-wa					*!	***	***		
O_{487257}: wapm-w-k$_2$-wa-n$_1$-k$_2$					*!	***	***		
O_{487258}: wapm-w-k$_2$-wa-n$_1$-n$_2$					*!	***	***		

As /mUn/ has to be merged immediately before /nan/, though, one can assume that /nan/ has a remove feature [**-**AGR**-**] that removes /mUn/ to satisfy the REMOVE CONDITION (Müller (2020: 168), Andermann (2022: 31)), a constraint that, in analogy to the MERGE CONDITION in (18), requires remove features to participate and be deleted in a remove operation. The possibility of /nan/ removing exponents other than /mUn/ is ruled out by the weakened version of the STRICT CYCLE CONDITION (SCC), according to which deletion need not target the leftmost or rightmost position but an exponent may only remove an exponent that has been merged immediately before, and /nan/ is always merged immediately after /mUn/ (at least in the verbal domain). Crucially, this proves that the SCC, at least in the weakened version proposed in (6b) for deletion operations, is necessary to derive the Potawatomi Transitive Animate paradigm. Merge of /nan/ and removal of /mUn/ are represented in (37)-(38).

(38) *n-wapm-UkO-nan-k (‘they see us’), Step 7: Discharge [–AGR–] on /nan/ by removing* mUn

I_{487255} wapm-**w**-**k**$_2$-**wa**-*n*$_1$-*mUn-nan*$_{[\text{–AGR–}]}$ [-1 -2 +3 +pl +obj -obv (+su)-sal] *[+1 -2 -3 +pl -obj -obv (-su) +sal]* { $_{Agr}$/k$_1$/↔[+2 (-su) +sal], $_{Agr}$/w/↔[+3 (-su) +sal], $_{Agr}$ ∅ ↔ [+3 -pl (-su) +sal] $_{Agr}$/wa/↔[-1 +pl (-su) +sal], $_{Agr}$/k$_2$/↔[+3 +pl (-su) +sal], $_{Agr}$/n$_2$/↔[+3 +obv (-su) +sal],...}	MINSAT	EXMORAR	REMOVE CONDITION	MC(AGR)	IDENTFEATURE	-SAL ⇒ R	NUM ⇒ R	L ⇐ PERS	L ⇐ RT
$O_{4872551}$:wapm-**w**-**k**$_2$-**wa**-*n*$_1$-*mUn-nan*$_{[\text{–AGR–}]}$			*!			***	***		
☞ $O_{4872552}$:**w**-**k**$_2$-**wa**-*n*$_1$-*nan*						***	**		

4.2.2. Second Cycle: Movement

Now that all compatible exponents have been merged, the first morphological cycle is completed and the second cycle can take place, taking as its input the final output from the first cycle, ***w***-***k***$_2$-***wa***-*n*$_1$-*nan*, and yielding the final output *n*$_1$-*wapm*-***UkO***-nan-***k***$_2$.

(39) *n-wapm-UkO-nan-k (‘they see us’), Step 8: Move /w/ right and discharge [-sal]*

$I_{4872552}$ wapm-**w**-**k**$_2$-**wa**-*n*$_1$-*nan*	-SAL ⇒ R	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX (PERS)	MAX +PL
$O_{48725521}$ wapm-**w**-**k**$_2$-**wa**-*n*$_1$-*nan*	**!	**	***	*	**		
$O_{48725522}$ **w**-wapm-**k**$_2$-**wa**-*n*$_1$-*nan*	**!	**	***	**	**		
☞ $O_{48725523}$ wapm-**k**$_2$-**wa**-*n*$_1$-*nan*-w	**	**	***	**	**		

Recall that movement operations are subject to the same cyclic domains and take place in the same order as Merge operations. The first exponent to move is therefore /w/ ↔ [+3 +*su* **-sal**], which first moves to the right edge to satisfy -SAL ⇒ R, as represented in (39), discharge its **[-sal]** feature, and then moves to the left to satisfy L ⇐ +3, as represented in (40).

(40) *n-wapm-UkO-nan-k (‘they see us’), Step 9: Move /w/ left*

$I_{48725523}$ wapm-**k$_2$**-**wa**-*n$_1$*-*nan*-w	-SAL ⇒ R	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX (PERS)	MAX +PL
$O_{487255231}$ wapm-**k$_2$**-**wa**-*n$_1$*-*nan*-w	**	**	***	**	**!		
☞ $O_{487255232}$ w-wapm-**k$_2$**-**wa**-*n$_1$*-*nan*	**	**	**	**	*		

As a consequence of the CYCLIC PRINCIPLE in (7), it is only after /w/ has moved to its final landing site that the next exponent, /k$_2$/ can, in its turn, move to the rightmost position, as represented in (41).

(41) *n-wapm-UkO-nan-k (‘they see us’), Step 10: Move **/k$_2$/** right, discharge [-sal] and strand [+su] in the base position*

$I_{487255232}$ wapm-**k$_2$**-**wa**-*n$_1$*-*nan*-w	-SAL ⇒ R	RT ⇐ +SAL	NUM ⇒ R	L⇐ PERS	MAX ± SU	MAX (PERS)	MAX +PL
$O_{4872552321}$ w-wapm-**k$_2$**-**wa**-*n$_1$*-*nan*	**!	**	**	***			
$O_{4872552322}$ **k$_2$**-w-wapm-[+su]-**wa**-*n$_1$*-*nan*	**!	**	**	***	*		
☞ $O_{4872552323}$ w-wapm-[+su]-**wa**-*n$_1$*-*nan*-k$_2$	*	**	**	***	*		

Again, after the first exponent has discharged its **[-sal]** feature by movement, the grammatical function feature [+su] is activated on the exponent /k$_2$/. As /k$_2$/ moves to the right edge, it strands the grammatical function feature, which must be realised by an exponent in order to satisfy MAX (±SU).

(42) *n-wapm-UkO-nan-k (‘they see us’), Step 11: Insert generic subject marker **UkO** to repair violation of* MAX *(± su)*

$I_{4872552323}$ wapm-**k$_2$**-**wa**-*n$_1$*-*nan*-w	-SAL ⇒ R	RT ⇐ +SAL	NUM ⇒ R	L⇐ PERS	MAX ± SU	MAX (PERS)	MAX +PL
$O_{48725523231}$ w-wapm-[+su]-**wa**-*n$_1$*-*nan*-k$_2$	*	**	**	***	*!		
☞ $O_{48725523232}$ w-wapm-**UkO**-**wa**-*n$_1$*-*nan*-k$_2$	*	**	**	***			

In this case, since the stranded feature is [+su], it is the underspecified subject marker /UkO/ that is inserted, as shown in (42). Again, in a derivational branching approach, /k$_2$/ either does not split its [+su] feature off at all or already splits it off after Merge of /k$_2$/. In the latter case, [-su] is realised by /UkO/ immediately afterwards to satisfy MAX (± SU) as well as both the SCC and the CYCLIC PRINCIPLE, and the information that [+su] has been split off and /UkO/ has been inserted is registered on a buffer on /k$_2$/, yielding ungrammaticality if /k$_2$/ does not move. This is again independently ruled out by high-ranked -SAL ⇒ R. Likewise, /k$_2$/ not splitting [+su] off must lead to ungrammaticality due to high-ranked -SAL ⇒ R as it could only ever yield a grammatical result if /k$_2$/ did not have to move.

(43) *n-wapm-UkO-nan-k ('they see us'), Step 12: Move* ***/wa/*** *right and discharge [-sal]*

I$_{48725523232}$ w-wapm-**UkO-wa**-*n$_1$*-*nan*-k$_2$	-SAL ⇒ R	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX (PERS)	MAX +PL
O$_{487255232321}$ w-wapm-**UkO-wa**-*n$_1$*-*nan*-k$_2$	*!	**	**	**	*		
O$_{487255232322}$ **wa**-w-wapm-**UkO**-*n$_1$*-*nan*-k$_2$	*!	**	**	**	*		
☞ O$_{487255232323}$ w-wapm-**UkO**-*n$_1$*-*nan*-k$_2$-wa		**	**	**	*		

After all movement and movement-related insertion operations concerning k$_2$ have been carried out, /wa/ moves to the right edge to discharge its **[-sal]** feature (see (43)).

(44) *n-wapm-UkO-nan-k ('they see us'), Step 13: Resolve competition between /wa/ and /k$_2$/ for the rightmost position by deleting wa*

I$_{487255232323}$ w-wapm-**UkO**-*n$_1$*-*nan*-k$_2$-wa	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX +1	MAX +3	MAX -1	MAX +PL
O$_{4872552323231}$ w-wapm-**UkO**-*n$_1$*-*nan*-k$_2$-wa	**	**!	**	*				
☞ O$_{4872552323232}$ w-wapm-**UkO**-*n$_1$*-*nan*-k$_2$-□	*	**	**	*			*	*
O$_{4872552323233}$ w-wapm-**UkO**-*n$_1$*-*nan*-□-wa	**	*	**	*		*!		*

Now that the **[-sal]** feature is discharged, /wa/ and /k$_2$ compete for the position at the right edge due to NUM ⇒ R. The exponent /k$_2$/ ↔ [+3 +pl] wins over /wa/ ↔ [-1 +pl] because of the ranking MAX(+3) » MAX(-1), and /wa/ is deleted (see (44)).

(45) *n-wapm-UkO-nan-k (‘they see us’), Step 14: Move /*n_1*/ left*

$I_{4872552323232}$ w-wapm-**UkO**-n_1-*nan*-k_2	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX +1	MAX +3	MAX -1	MAX +PL
$O_{48725523232321}$ w-wapm-**UkO**-n_1*nan*-k_2	**	*	**!	*				
☞ $O_{48725523232322}$ n_1-w-wapm-**UkO**-*nan*-k_2	**	*	*	**				

As all exponents realising the less salient arguments have either reached their final landing site or have been deleted, /n_1/ can now be moved to the left edge, driven by L ⇐ [+1]. Here, /n_1/ competes with /w/, and due to the ranking of MAX constraints, /w/ loses (see (45)).

(46) *n-wapm-UkO-nan-k (‘they see us’), Step 15: Resolve competition between /*n_1*/ and /w/ for the leftmost position by deleting w*

$I_{48725523232322}$ w-wapm-**UkO**-n_1-*nan*-k_2	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX +1	MAX +3	MAX -1	MAX +PL
$O_{487255232323221}$ n_1-w-wapm-**UkO**-*nan*-k_2	**	*	*	**!				
$O_{487255232323222}$ w-n_1-wapm-**UkO**-*nan*-k_2	*	*	*	*				
$O_{487255232323223}$ □-w-wapm-**UkO**-*nan*-k_2		*	*		*!			
☞ $O_{487255232323224}$ n_1-□-wapm-**UkO**-*nan*-k_2		*	*			*		

Now the question arises why the first person plural object marker /nan/[5] does not end up being deleted or deleting /k_2/ by trying to move rightwards. The answer is that /nan/ is specified as *[+salient]* and there is a constraint requiring *[+salient]* exponents to be as close to the stem as possible. This constraint, however, is always violated for /nan/ as the INV marker intervenes between it and the stem. Therefore, under a categoric interpretation, moving /nan/ to the right would not make any difference for that constraint, but it would improve the constraint profile w.r.t. the plural alignment constraint. For the constraint RT ⇐ *[+salient]* to prevent /nan/ from moving, this constraint must be gradient(see (47)).

[5]The same question applies to marker /wa/ realising the 2PL argument in 2PL ↔ 3PL contexts.

(47) *n-wapm-UkO-nan-k ('they see us'), Step 16: Convergence (Attention: Gradient interpretation of alignment constraints)*

$I_{487255232323224}$ n_1-wapm-**UkO**-*nan*-k_2	RT ⇐ +SAL	NUM ⇒ R	L⇐ +1	L⇐ +3	MAX (PERS)	MAX +PL
☞ $O_{4872552323232241}$ n_1-wapm-**UkO**-*nan*-k_2	*	***	****	*****		
$O_{4872552323232242}$ n_1-wapm-**UkO**-k_2-*nan*	**!	***	*****	****		

The derivation of the inverse form *n_1-wapm-UkO-nan-k_2* has once more illustrated the movement-based derivation of inverse marking proposed here and shown the need for such a derivation to obey the CYCLIC PRINCIPLE in (7). The main insight to be gained from this derivation, however, is that the SCC as defined in (6) is necessary to correctly predict that the Remove feature on /nan/ does not trigger removal of any exponent other than /mUn/, as shown in (36)-(38).

5. Conclusion

I have shown that an analysis of Potawatomi direct and inverse marking as minimally realised overt reflexes of morphological movement, which I have provided evidence for in section 3, obliterates the need for assuming two Voice heads in the syntax, nominative-accusative and absolutive-ergative alignment at the same time, or one exponent encoding both arguments. In a derivational optimality-theoretic approach, such as Harmonic Serialism, morphological movement does not have to be derived via an additional operation type such as local dislocation or metathesis, but follows without further ado from the interaction of MERGE CONDITION, MAX, and alignment constraints, with the exception of deletion in the context of extended exponence, i.e. removal of /mUn/ by /nan/ in section 4.2.1. I have also shown that assuming two morphological cycles, one for Merge operations and one for movement operations, offers new insight into the Potawatomi transitive animate paradigm, namely that it is underlyingly regular and well-behaved: all exponents are merged neatly in a row, first the markers encoding the **less salient** argument, then the markers realising the *more salient* one. All unexpected exponence (direct/inverse marking) or unexpected non-exponence (participant reduction) is a consequence of movement and movement-related repair operations that take place in the second morphological cycle (or, under a derivational branching approach, that are prepared in the first and completed in the second cycle).

My analysis crucially relies on two concepts of cyclicity: the STRICT CYCLE CONDITION (SCC) and the CYCLIC PRINCIPLE. The SCC comes in three degrees of strength listed in (6) and repeated in (48):

(48) a. *Merge* and *movement* may only target the left or the right edge.
b. *Deletion* must target a position adjacent to the left- or rightmost position and must be the consequence of an immediately preceding Merge or movement operation (that has targeted the left or right edge, as per (48a))
c. *Repair-driven insertion* may apply to any position but must be a direct consequence of an immediately preceding Merge or movement operation (that has targeted the left or right edge, as per (48a)).

As I have shown in section 4.2.1, the versions of the SCC in (48a-b) prevent Remove from overapplying; the 1PL.OBJ marker /nan/ bears a generic Remove feature [–R–] and could therefore in theory remove any exponent and not just the generic 1PL marker /mUn/. However, given the version of the SCC in (48b), /nan/ may only remove the exponent adjacent to it. As an effect of (48a)[6] at the point where /nan/ is merged, the only exponent adjacent to /nan/ is the generic 1PL marker /mUn/ that has been merged immediately before. The weakest version of the SCC in (48c) finally ensures that the trace of /k_2/ is overtly realised in the base position by the generic object marker /a/ and the generic subject marker /UkO/ immediately after movement of /k_2/ to the right edge. The CYCLIC PRINCIPLE, in turn, must hold for movement operations in order for competition-driven deletion and repair-driven insertion operations to not violate the weaker versions of the SCC in (48b-c).

Interestingly, for the movement operations themselves, it is not so much the SCC as the CYCLIC PRINCIPLE which predicts their order. In (28)-(30), for example, moving /k_2/ right immediately after rightward movement of /w/, without moving /w/ left first, would be compatible with the SCC but not with the CYCLIC PRINCIPLE. It is but at a later stage, in (35), where such a

[6](48a) here must be taken together with MINSAT, which ensures that in cases of extended exponence, the more generic exponent is merged first, and L $\Leftarrow$ RT, which requires all affixes to be merged as suffixes.

derivation leads to an ungrammatical result since it is impossible to delete /w/ as a result of competition with /n_1/ for the left edge unless /w/ is adjacent to the leftmost position. However, as this is not yet clear at the stage where /w/ needs to move left, its movement must be predicted by an independent principle, namely the CYCLIC PRINCIPLE, in order for the derivation to be myopic. For insertion and deletion operations, on the other hand, it is the SCC which is relevant.

Furthermore, as we have seen in sections 4.1.2 and 4.2.2, by adopting a derivational branching approach, the weakest version of the SCC in (48c) may be abandoned, leaving us with the two stronger versions. An attempt to strengthen the SCC even further by deriving deletion in terms of derivational branching (where information about the deleted item is possibly stored on the adjacent item and deleted under adjacency with the next merged or moved item) might be worth considering in the future.

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