
Mandan ϕ -marking and the morphosyntax of first person plural

Marcel den Dikken

*Department of English Linguistics • SEAS • Eötvös Loránd University
& Hungarian Research Centre for Linguistics • Budapest*

- in the Mandan (Western Siouan) complex verb, a wide variety of prefixes can occur before the verbal root, which can, in turn, be followed by one or more enclitics
- these occur in a fixed order
- in its richest form, the make-up of the prefixal field looks as in (1)
- two loci for ϕ -feature marking, separated from one another by what the Siouanist literature calls ‘preverbs’ (PV)

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the **post-PV** ϕ -slot is for markers of speech-act participants
[there is no marking of non-participants ('third person') on the verb; as Kasak (2019:287) points out, 'when multiple individuals are involved in the discourse, it can become confusing to keep track of who did what']

(2) waa-o-wa-rEEh=rjx=o'sh (Hollow 1973a:48)

NEG-PV:IRR-1.ACT-go.there=NEG=IND.M

'I am not going to go there'

(3) waa-w-rq-krah=rjx=o'sh (Hollow 1973b:96)

NEG-1.STAT-2.ACT-be.afraid.of=NEG=IND.M

'you are not afraid of me even now'

(4) a. e-w-rj-pE=o'sh (Kasak 2019:171)

PV-1.ACT-2.STAT-say.1.ACT=IND.M

'I said it to you'

b. e-w-rq-tE=o'sh

PV-1.STAT-2.ACT-say.2.ACT=IND.M

'you said it to me'

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the **pre-PV** ϕ -slot is for marking first person plural

→ the referent for this prefix is typically dual inclusive (i.e., the speaker and a single addressee)

(5) a. rɯ-rEEh=o'sh (Kasak 2019:202)

1.ACT.PL-go.there=IND

'we_{DU} went there'

b. rɯ-rEEh=rɨt=o'sh

1.ACT.PL-go.there=2PL=IND.M

'we_{PL} went there'

(6) r-aa-ra-rEEh=rɨt=o'sh (Kasak 2019:208)

1PL.STAT-PV:TR-2.ACT-go.there=2PL=IND.M

'you brought us here'

- CENTRAL QUESTION: what causes the positioning of the 1PL marker and the other φ -morphology relative to the preverbs to be so strikingly different?
- Kasak (2019): a **templatic morphological** analysis, representing 1PL and the first and second person markers in different ‘slots’ in the templatic make-up of the complex verb
- McCann (2023): an OT-theoretic **phonological** analysis, treating the placement of 1PL relative to the preverb with the aid of **metathesis**
- THIS PAPER: a **morphosyntactic** analysis

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- PREAMBLE: the status of the non- ϕ -marking prefixes occurring on Mandan verbs
- three inflection-like prefixes can precede 1PL

(1) [V REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the ‘**unspecified argument**’ prefix *wa-*, shows up in instances of unspecified object deletion; it has traditionally been treated on a par with the prefix *waa-*, which functions as the indefinite subject prefix, the partitive marker, and the nominaliser
- these functions of *wa(a)-* can be unified if this prefix is treated as similar to ‘linkers’ in nominal constructs — such as French *de*, occurring in nominalisations (*la destruction de la ville* ‘the destruction of the city’), in partitives (*la moitié/plupart de la population* ‘half/most of the population’), and in the counterparts of English bare indefinites (*de la viande* ‘(lit.) of the meat, i.e., meat’)
- if this is a valid parallel, the syntax of the prefix *wa(a)-* places it in a position far removed from the verb, not within the verb’s extended projection

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the other two other prefixes that come to the left of 1PL do belong to the syntax of the verbal clause:
 - the negative prefix (always co-occurring with a negative enclitic: negative concord)
 - the relativiser prefix *ko-* (stemming from a Proto-Siouan demonstrative)

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the other two other prefixes that come to the left of 1PL do belong to the syntax of the verbal clause:
 - the negative prefix (always co-occurring with a negative enclitic: negative concord)
 - the relativiser prefix *ko-* (stemming from a Proto-Siouan demonstrative)
- in other Siouan languages (incl. Biloxi, Crow), the **relativiser** is a free-standing element
- although the Mandan relativiser is phonologically dependent on the verb, I treat it as an occupant of either C or SpecCP (the choice between these is immaterial)

(1) [_V REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the other two other prefixes that come to the left of 1PL do belong to the syntax of the verbal clause:
 - the negative prefix (always co-occurring with a negative enclitic: negative concord)
 - the relativiser prefix *ko-* (stemming from a Proto-Siouan demonstrative)
 - the **negative** prefix always precedes all the verbs in multi-verb constructions (such as causatives), which suggests that it is syntactically autonomous
- I treat the clause-internal prefixes that precede 1PL as phonological prefixes exponing syntactic positions, morphologically independent of V

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- Mandan **preverbs** are mostly (high) applicative or (high) aspectual in nature
- Kasak (2019:137): they resemble the prepositional prefixes of Indo-European, semantically clearly discrete and rather loosely connected to the verbal root
- ‘preverbs and verbs likely do not form an atomic morphological unit’
- if an assimilation of the Mandan preverbs to the (prefixal) particles of Indo-European or the preverbs of Hungarian is feasible, they are base-generated in syntax as independently projecting elements, not as integral subparts of the complex verb

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- to the right of the first and second person markers:

- voice (middle) prefixes
- low aspectual (iterative, inchoative) prefixes

→ these are plausibly treated as heads that define their own syntactic projections

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- to the right of the first and second person markers:
 - ‘INS’ (for ‘instrumental’) and a set of prefixes which when combining with transitive verbs ‘indicate the manner by which an action occurs’ (Kasak 2019:144) and when occurring on intransitive verbs transitive them
- especially their behaviour in combination with intransitive verbs suggests that these prefixes are exponents of ‘little *v*’
- I will treat them as such, and hence give them a syntactic head position outside VP

(1) [V REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- this gives us a reimaging of (1) as in (7), minus the prefix that Kasak (2019) labels as ‘UNSP’, for which I have proposed that it stands outside the extended projection of the verb, and minus the φ -markers

(7) [CP REL [NegP NEG [AspP PV_{Asp} [AppIP PV_{Appl} [VceP VCE [AspP ITER/INCH [vP v=MAN/TRANS [VP

→ the focus of the rest of the paper is on the status of these φ -markers

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- the immediately post-PV φ -slot is for first and second person markers, of which the latter is itself unspecified for number: a postverbal enclitic (= *nit*) has the function of marking plurality for it
 - I have assigned the prefixes that separate the post-PV φ -markers from the verb positions in the extended projection of the verb
 - one could give the person markers that follow the preverb a syntactic treatment
 - it is certainly interesting that the prefix that is linearly closest to the post-PV person prefixes is the voice prefix: this might be taken to suggest that the post-PV person prefixes are in their normal syntactic positions, and only become part of the complex verb in the PF component
- BUT there are problems for an approach along these lines

- a second problem for a treatment of the post-PV ϕ -markers is that these are strictly ordered in terms of their person specification, not their thematic status or grammatical function
- in the post-PV field, first person markers consistently precede second person markers, regardless of the thematic status of the arguments that they represent
- an analysis placing agents in SpecVceP and person-marked objects in SpecAspP would, all else equal, predict an ordering of person markers along thematic or grammatical function lines
- a treatment of the post-PV ϕ -markers as agreement inflections is preferable

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

Q why do the post-PV person prefixes and the 1PL marker occur on opposite sides of the preverbs?

→ Kasak: they represent different ‘slots’ in the templatic make-up of the complex verb

→ Kasak accepts that the ordering of the Mandan enclitics reasonably reflects syntax; but he rejects that syntax could be responsible for the order of prefixes in (1), based on:

(a) Anderson’s (1977, 1982) hypothesis that derivational and inflectional morphology are to be treated strictly separately and assigned to separate strata

(b) the assumption that all the non- ϕ -marking prefixes in (1) from PV down to the verb are derivational

(8) ro-o-ra-hE=rjt=o’sh (Hollow 1970:477)
1PL-PV:IRR-2.ACT-see=2PL=IND.M
‘you_{PL} are going to see us’

(1) [_v REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- nothing that precedes 1PL in the string in (1) is a morphological prefix according to the syntactic treatment of the REL, NEG and UNSP prefixes offered previously in this paper
- nothing in principle stands in the way of a treatment of 1PL as a syntactically autonomous element, occupying a phrasal position in the tree
- I will eventually identify SpecTP as the locus of the 1PL marker

- each of the ϕ -markers of Mandan comes in two basic forms, each with a number of surface variants
- the two basic forms are differentiated based on the grammatical function or (non-)agency of their referent: ACTIVE ~ STATIVE

(11)

	ACTIVE	STATIVE
1SG	<i>wa-</i>	<i>ma-</i>
2	<i>ra-</i>	<i>ni-</i>
1PL	<i>nu-</i>	<i>ro-</i>

- Mandan has a set of personal pronouns as well; the differences between the forms quoted by Kennard and Mixco are centred on their nasality, exactly as in the active/stative contrasts in (11)

(12)

	Mixco (1997)	Kennard (1936)
a. 1SG	<i>wi</i>	<i>mi</i>
b. 2	<i>ri</i>	<i>ni</i>
c. 1PL		<i>nu</i>

- in the phonology of Mandan, [n] is an allophone of /r/ (rendered orthographically as ⟨r⟩) and [m] is an allophone of /w/ (Kasak 2019:44, 65, 110; Hollow 1970)
- for Mandan sonorants, place of articulation (coronal vs bilabial) is distinctive but nasality is not; the nasality of sonorants is generally the product of regressive nasal assimilation to underlyingly nasal vowels
- the vowels of the basic forms of the first and second person prefixes/pronouns are oral
- the nasality of the initial consonants of the stative markers *ma-* and *ni-* and the pronouns *mi* and *ni* is not triggered by these vowels
- HYPOTHESIS: the first and second person markers are specified for [bilabial] and [coronal], resp.; ‘stative’ is a non-segmental morpheme represented by the feature [nasal], exponed on the bilabial/coronal consonant

- (13) a. PERSON 1 = [bilabial]
 2 = [coronal]
- b. STAT [nasal]

(11)		ACTIVE	STATIVE
	1SG	<i>wa-</i>	<i>ma-</i>
	2	<i>ra-</i>	<i>ni-</i>
	1PL	<i>nu-</i>	<i>ro-</i>

(13)	a. PERSON	1 = [bilabial]
		2 = [coronal]
	b. STAT	[nasal]

(12)		Mixco (1997)	Kennard (1936)
	a. 1SG	<i>wi</i>	<i>mi</i>
	b. 2	<i>ri</i>	<i>ni</i>
	c. 1PL		<i>nu</i>

- the 1PL forms are **composites** of the [coronal] feature of the second person marker (exponed on C) and the [bilabial] feature of the first person marker (exponed on V)

(14)	a. 1PL	2 = [coronal] + 1 = [bilabial]
	b. STAT	[nasal]

- Q1 why does the second person marker precede the first person in the output CV-string?
 Q2 how to understand the fact that [nasal] is realised in the *active* form of the 1PL marker?

- ‘1PL’ is not the plural of 1SG, neither semantically nor morphosyntactically
→ it is the syntactic juxtaposition of a plural pronoun and a combination of the first person singular pronoun and the other referent(s) of ‘1PL’
- juxtaposition is an instance of specifying asyndetic coordination (Koster 2000, De Vries 2006)
- combining the first person singular pronoun with the other referent(s) could be done via conjunction (15a) or comitative modification (15b), with the aid of a silent P_{COMIT}

- (15) a. [_{DP} 1PL : [1SG [_{&P} & [x (& y (& z ...))]]]]
 b. [_{DP} 1PL : [1SG [_{PP} P_{COMIT} [x (& y (& z ...))]]]]

- (15) a. [_{DP} 1PL : [1SG [_{&P} & [x (& y (& z ...))]]]]
 b. [_{DP} 1PL : [1SG [_{PP} P_{COMIT} [x (& y (& z ...))]]]]

② the order in which the constituent parts of the 1PL forms of Mandan occur in the string: second person (exponed as the C of the CV syllable) precedes first person (exponed as V)

→ (15a): a (metalinguistic or deferential) preference for *you and me* over *me and you*

→ (15b): a linguistic fact — the comitative PP is *left*-adjoined to the projection of the first person pronoun, like adnominal PPs

- (17) [báashee-m awuuá] taláashpita-m (Crow; Graczyk 2007:217)
 boat-DET inside oil-DET
 ‘the oil inside the boat’

- for a dual inclusive interpretation of 1PL, the reading that is typical of 1PL in Mandan, this gives us the structure in (18)

(18) $[_{DP} 1PL : [_{DP} [_{PP} P_{COMIT} [2SG]] 1SG]]$

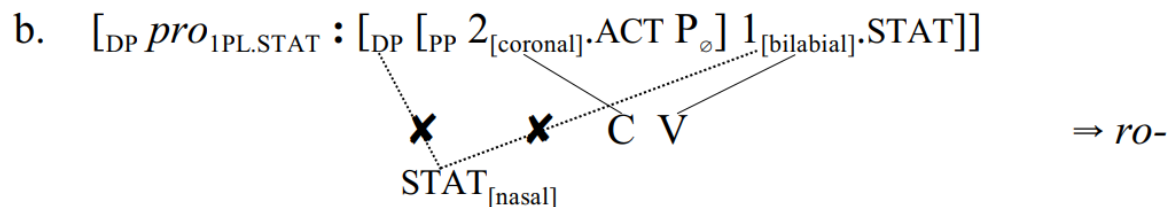
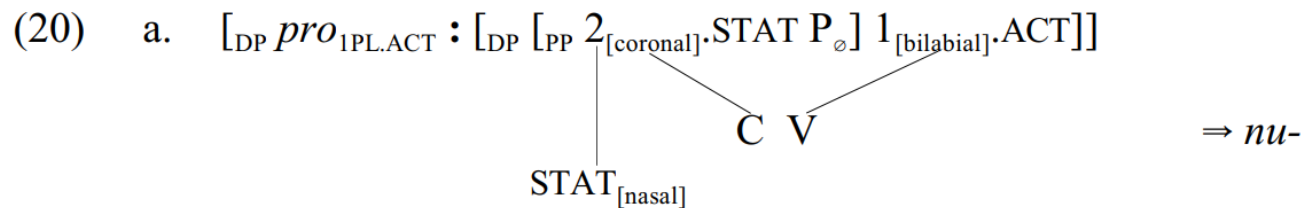
- the 1PL pronoun is itself silent (*pro*)
- second person is realised as [coronal], exponed on C
- 1SG is realised as [bilabial], exponed on V

(19) $[_{DP} pro_{1PL} : [_{DP} [_{PP} 2_{[coronal]} P_{\emptyset}] 1_{[bilabial]}]]$

C V

(11)		ACTIVE	STATIVE	
	1SG	<i>wa-</i>	<i>ma-</i>	→ post-PV ϕ -markers: [nasal] = STATIVE
	2	<i>ra-</i>	<i>ni-</i>	
	1PL	<i>nu-</i>	<i>ro-</i>	→ 1PL forms: [nasal] = ACTIVE

- the participant markers specifying *pro*'s content have **opposite** specifications for ACT/STAT
 - when 1PL is ACTIVE, the speaker is active so the first person marker (exponed on the vowel) is oral; the second person marker must then be in the STAT form: [nasal] C
 - when 1PL is STATIVE, the speaker is not active (hence STAT); the second person marker is in the ACT form — the unmarked form for ACT/STAT, phonologically oral



Q why is the feature [nasal] not exponed on the vowel of 1PL.STAT in (20b)?

→ the answer lies in the syntax:

- the first person marker in (20b) is a segment of a disegmental adjunction structure
- the floating [nasal] feature cannot associate to a segment: only categories are visible to the syntax and the interpretive components
- associating STAT to the entire adjunction structure headed by the first person marker and exponing it on that is impossible because the lower DP comprises both the first person marker and the second person marker, which must be opposites for ACT/STAT
- the floating feature [nasal] associated with STAT in (20b) remains unrealised

(20) b. $[_{DP} \textit{pro}_{1PL.STAT} : [_{DP} [_{PP} 2_{[coronal].ACT} P_{\emptyset}] 1_{[bilabial].STAT}]]$



- Kasak (2019:202): 1PL is ‘in complementary distribution with the first person singular prefixes, though it can co-occur with second person prefixes’
- cf. the fact that Hungarian (21)

- (21) a. én minket/bennünket is {*beleveszek/[?]beleveszem} a névsorba
 I us.ACC also include.1SG.INDEF/1SG.DEF the namelist.into
 ‘I also include us into the list of names’
- b. te minket/bennünket is {beleveszel/*beleveszed} a névsorba
 you_{SG} us.ACC also include.2SG.INDEF/2SG.DEF the namelist.into
 ‘you_{SG} also include us into the list of names’

- Den Dikken *et al.* (2001): in (21a) 1SG would be bound within its governing category (the clause) by the subject if *minket/bennünket* were in the regular object position
- a definite placeholder proform must be inserted in this position, to which *minket/bennünket* (itself not occupying an A-position) is associated
- in (21b), *minket/bennünket* is welcome to occupy the regular object position, giving rise to the usual indefinite inflection on the verb: 2SG is an adjunct, hence has no governing category, hence cannot violate the ban on pronouns bound in their governing category

(1) [V REL NEG UNSP 1PL PV 1SG 2 VCE ITER/INCH MAN/TRANS V ...]

- for the **post-PV first and second person markers**, no argument can be made that they occupy a phrasal A-position in syntax
- the post-PV person markers are ordered strictly as a function of their person specification, not by the thematic role or grammatical function that their referents have
- if the first and second person markers found themselves in A-positions, one would expect that in sentences in which a first person marker combines with a second person marker, the relative positioning of these markers would be governed by the θ -roles or grammatical functions of their referents

(8) ro-o-ra-hE=rjt=o'sh
1PL-PV:IRR-2.ACT-see=2PL=IND.M
'you_{PL} are going to see us'

- the post-PV ϕ -markers are agreement inflections, linked to *pro*'s in A-positions
- the ϕ -markers originate in the functional categories in whose specifiers the *pro*'s that they cross-reference are licensed — Vce in the case of ACT and the lower Asp-head in (22) for STAT

(22) $[\text{CP REL } [\text{NegP NEG } [\text{TP 1PL } [\text{AspP PV}_{\text{Asp}} [\text{AppIP PV}_{\text{Appl}} [\text{VceP VCE } [\text{AspP ITER/INCH } [\text{vP v=MAN/TRANS } [\text{VP ...}]]]]]]]]]]]]]$

- the ordering of the inflectional ϕ -markers is subject to morphophonological constraints, ones which syntax has nothing to say about
- because Vce and the lower Asp-head are immediately contiguous and nothing overt occupies the SpecAspP position, the relative order of the ϕ -markers output by syntax can be flipped in the PF component by Distributed Morphology's morphological merger *cum* local dislocation

- while the post-PV person markers are arguably agreement inflections originating lower than the preverbs, the 1PL marker represents a complex DP that occupies a phrasal position in syntax — specifically, SpecTP
- this placement of 1PL ensures that the 1PL marker is spelled out to the right of negation and to the left of all preverbs
- this is what solves the morpheme order puzzle with which I started the paper

Acknowledgements

This paper was triggered by a suggestion I made in the discussion of McCann's (2023) GLOW-paper on the difference in placement relative to preverbs of the 1PL marker and the other φ -markers of Mandan. I would also like to acknowledge the detailed descriptive work reported in Kasak's (2019) dissertation on Mandan morphology.

- Anderson, Stephen. 1977. On the formal description of inflection. *CLS* 13. 15–44.
- Anderson, Stephen. 1982. Where's morphology? *Linguistic Inquiry* 13. 571–612.
- Bartos, Huba. 2000. Az inflexiós jelenségek szintaktikai háttere [The syntactic background of inflectional phenomena]. In Ferenc Kiefer (ed.), *Strukturális magyar nyelvtan [Structural Grammar of Hungarian]* II. Budapest: Akadémiai Kiadó. 653–761.
- Cinque, Guglielmo. 1999. *Adverbs and functional heads: A cross-linguistic perspective*. New York: Oxford University Press.
- Coppock, Elizabeth & Stephen Wechsler. 2012. The objective conjugation in Hungarian: Agreement without phi-features. *Natural Language & Linguistic Theory* 30. 699–740.
- Dikken, Marcel den. 1999. On the structural representation of possession and agreement. The case of (anti-)agreement in Hungarian possessed nominal phrases. In István Kenesei (ed.), *Crossing boundaries: Theoretical advances in Central and Eastern European languages*. Amsterdam: John Benjamins. 137–78.
- Dikken, Marcel den, Anikó Lipták & Zsófia Zvolenszky. 2001. On inclusive reference anaphora: New perspectives from Hungarian. *WCCFL 20 Proceedings*. 137–49.
- É. Kiss, Katalin. 2013. The inverse agreement constraint in Uralic languages. *Finno-Ugric Languages and Linguistics* 2. 2–21.
- Graczyk, Randolph. 2007. *A grammar of Crow*. Lincoln: University of Nebraska Press.

- Hollow, Robert. 1970. A Mandan dictionary. PhD diss., University of California, Berkeley.
- Hollow, Robert. 1973a. Mandan texts. Box 3: Robert C. Hollow materials. North Dakota State Historical Society.
- Hollow, Robert. 1973b. Mandan texts. Box 5: Robert C. Hollow materials. North Dakota State Historical Society.
- Jelinek, Eloise. 1984. Empty categories, case and configurationality. *Natural Language & Linguistic Theory* 2. 39–76.
- Kasak, Ryan. 2019. Affix ordering and templatic morphology in Mandan. PhD diss., Yale University.
- Koster, Jan. 2000. Extraposition as parallel construal. Ms., University of Groningen.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In Johan Rooryck & Laurie Zaring (eds), *Phrase structure and the lexicon*. Dordrecht: Kluwer. 109–37.
- McCann, Katie. 2023. Phonological exceptions are morphotactic exceptions given phonological underspecification. Paper presented at GLOW46, Vienna.
- Mchombo, Sam. 2004. *The syntax of Chichewa*. Cambridge: Cambridge University Press.
- Mixco, Mauricio. 1997. *Mandan*. Munich: LINCOM Europa.
- Moskal, Beate. 2018. Excluding exclusively the exclusive: Suppletion patterns in clusivity. *Glossa* 3. 1–34. DOI: <https://doi.org/10.5334/gjgl.362>
- Rooryck, Johan. 1998. Disjoint reference and the internal structure of pronouns. Ms., University of Leiden/HIL.
- Vries, Mark de. 2006. The syntax of appositive relativization: On specifying coordination, false free relatives, and promotion. *Linguistic Inquiry* 37. 229–70.

Thank you very much

*Hungarian Research Centre for Linguistics
Benczúr u. 33
H-1068 Budapest
Hungary*

*Department of English Linguistics, ELTE
Rákóczi út 5
H-1088 Budapest
Hungary*

<https://marceldendikken.wordpress.com>

marcel.den.dikken@nytud.hu
