MOSETÉN AND CHIMANE ARGUMENT CODING: A LAYERED SYSTEM [1]

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This paper discusses the argument-coding system of Mosetenan, a small language family spoken in the Bolivian Amazon. While there is no case marking on nouns, all coding of arguments is found in the cross-reference ending of verbs. Intransitive verbs are marked for the gender of their subjects, except for the first-person plural inclusive, which has a marker, *-ja'*, that does not indicate the gender of the subject. Transitive cross-referencing is more complicated. It is a layered system that combines the grammatical relation of the participant (S, A, or O) with the person (1, 2, 3) and number (singular and plural). Again, the forms of first-person plural inclusive subjects are unique. The second most important forms are third-person objects, which appear before any of the speech-act participants (SAP). I analyse the Mosetenan system, discussing how language contact can shape the general outline of an argument-coding system by the introduction of a new category such as an inclusive/exclusive distinction in the first-person plural.

[KEYWORDS: Mosetén, Chimane, cross-reference, inclusive/exclusive, hierarchical system]

1. Introduction. This article analyzes the system of argument coding in the Mosetenan languages Mosetén and Chimane. The Mosetenan argument-coding system is layered, with a typologically unusual ranking of participants. First-person plural inclusive subjects (S and A) outrank all other elements in the paradigm, followed by third-person objects. The system is complex: the ranking involves the grammatical relation of the participant (S, A, or O) as well as the person (1, 2, 3) and number (singular and plural). I analyze the Mosetenan system and consider how language contact can shape the general outline of an argument-coding system, for example, by the introduction of a new category such as an inclusive/exclusive distinction in the first-person plural.

In sections **2** and **3**, I present background information on Mosetén and Chimane, including a typological sketch of the Mosetenan languages. In **4**, I look at the way NP arguments are marked and discuss the cross-reference marking of intransitive and transitive verbs in **5**. In **6**, I present the markers for the first-person plural inclusive in detail, looking at the role language contact may have played in shaping the system of Mosetenan argument coding. Finally, **7** provides a summary and overview of the history and possible diachronic and contact-induced development of the argument-coding system in the Mosetenan languages.

2. Mosetén and Chimane: background. Mosetén and Chimane are the only members of the small language family Mosetenan. While some regard Mosetén and Chimane as two separate languages (Sakel 2004), others consider them as the same language with two different names (e.g., the *Ethnologue* [see Gordon 2005]). Mosetén has two main varieties: Mosetén of Covendo and Mosetén of Santa Ana. Geographically, they are situated in a continuous region that extends to the Chimane

area, with Santa Ana at the center. Linguistically, Santa Ana is intermediate and mutually intelligible with the other varieties. In my discussion of argument coding, I refer to the three varieties separately as Mosetén of Covendo (CO), Mosetén of Santa Ana (SA), and Chimane (CH).

Both varieties of Mosetén are spoken in the foothills of the Bolivian Andes, along the Upper Beni river area and adjoining rivers leading to the Amazonian lowlands. They are both seriously endangered, with approximately 800 speakers for Mosetén of Covendo and 150 speakers of Mosetén of Santa Ana, most of whom are over the age of 40. The situation with Chimane, however, is quite different: Chimane has at least 4,000 speakers (many monolingual), and this number is steadily increasing. Chimane is spoken in the Amazonian lowland area around the city of San Borja, which is adjacent to the Andean foothill region that is the home of the Mosetenes.

The first texts in and about the Mosetenan languages were published in the nineteenth century, beginning with a prayer-book by Herrero (1834). Other missionaries, anthropologists, and adventurers who have since collected firsthand information on Mosetén include N. Armentia, J. Cardús, E. R. Heath, E. von Nordenskiöld, F. Caspar, J. Riester, I. Daillant (see Sakel 2004 for further references and discussion of these), and, most notably, B. Bibolotti, whose "Moseteno Vocabulary and Treaties" was published in 1917 by Schuller. Schuller wrote a grammatical sketch of the language, although he never worked with Mosetén speakers. Similarly, Lucien Adam and Lafone Quevedo worked on the language using data collected by others. Gill (1999) compiled a dictionary and a pedagogical grammar to help missionaries learn Chimane. Grinevald (1996) proposed a revised alphabet for Chimane and Mosetén. I carried out fieldwork on Mosetén, in particular

Mosetén of Covendo, between 1999 and 2002. Based on a corpus of over 20 hours of texts and numerous interviews with more than 20 different speakers, I have published several articles on the language and a reference grammar (Sakel 2004).

Various attempts have been made to classify the Mosetenan languages with other language families of South America, but so far these have proved unconvincing. For example, Suárez (1969; 1973) argued that Mosetenan could be Pano-Tacanan. Swadesh (1959; 1960) argued that Mosetén belonged to Macro-Kechua and later suggested that Mosetén be grouped with the Chon family (Swadesh 1963). These classifications were based on old word lists and do not appear to be very reliable. Further study may prove them right or wrong; for now I consider Mosetenan to be unrelated to other languages.

3. Typological sketch of Mosetenan languages. Mosetenan is mainly agglutinating, with a fairly high degree of affixation, particularly in the verbal system.[2] It also displays fusional characteristics, and vowel assimilation may occur at morpheme boundaries. The nominal system is relatively simple; there are no core cases, and oblique case relations and number are expressed by clitics rather than inflectional affixes. The gender system, distinguishing feminine and masculine, shows elaborate agreement, which extends to the placement of adverbs across clause boundaries (Sakel 2002).

The verbal morphology is highly complex, with many derivational suffixes, a handful of prefixes, and one infix. These include markers for associated motion, aspect, and voice and markers expressing repetition or emphasis of an action. Most verbs are complex predicates (Sakel 2007*a*), consisting of a lexical root, e.g., *sak-* 'leave', and an inflecting element or stem extension (glossed SE). The latter classifies

the action or event in terms of transitivity and subject control, e.g., the general marker *-yi* 'do, be' (see example 1*a* below).[3] Elements of any part of speech can act as lexical roots, e.g., nouns, adjectives, and particles. Loanwords from other languages are also integrated into the Mosetenan system in this way. In most cases, the inflecting element can appear on its own as a simple verb (1*b*) with a different meaning, e.g., *yi-* 'say':

(1*a*) *Yäe* *sak-**yi**-Ø.*
1SG leave-SE(*yi*)-M.S
'I leave'. (CO)

(1*b*) *Yäe* ***yi**-Ø.*
1SG say-M.S
'I say (something)'. (CO)

Mosetenan has an SV(O) word order which is flexible in certain constructions.

The three varieties of Mosetenan differ lexically, phonologically, and in the use of certain grammatical markers, including the cross-reference system and the verbal derivational system. These differences are pointed out in the discussion that follows when relevant. The data from Mosetén of Santa Ana (SA) and Mosetén of Covendo (CO) are from my own fieldwork-based corpus of the language; all of the Chimane (CH) data are from Gill (1999).

4. Marking of NPs and independent pronouns. At the sentence level, the Mosetenan languages receive no core case marking, as illustrated in the following examples from Mosetén of Covendo:

(2*a*) ***Yäe*** *saeks-i-Ø.*

1SG eat(intr.)-SE(*i*)-M.S

'I (M) eat'. (CO)

(2*b*) ***Iits*** ***mintyi'*** *saeks-i-Ø.*

DEM.M man eat(intr.)-SE(*i*)-M.S

'That man eats'. (CO)

(2*c*) ***Yäe*** *tyaj-ke-te* ***iits*** ***mintyi'.***

1SG meet-SE(*ki*)-3M.O DEM.M man

'I met that man'. (CO)

(2*d*) ***Iits*** ***mintyi'****tyaj-ki-n* ***yäe.***

DEM.M man meet-SE(*ki*)-3SG.S→1.O 1SG

'That man met me'. (CO)

The free pronominal subject of the intransitive verb in (2*a*) and the noun phrase subject of the intransitive verb in (2*b*) have exactly the same forms as when used as subjects or objects of transitive verbs (2*c* and 2*d*). Word order often clarifies the situation since subjects generally precede objects. The most reliable disambiguation device, however, is verbal cross-reference marking.

Free pronouns differ slightly in Mosetén of Covendo and Chimane/Mosetén of Santa Ana, as shown in table 1. While there is only one free pronoun for first-person plural, *tsin*, the cross-reference endings of verbs (i.e., bound pronouns) distinguish between first-person plural inclusive and first-person plural exclusive.

5. Cross–reference. While free pronominal forms are optional, the Mosetenan languages have obligatory cross-reference in the verb. Transitivity is marked in Mosetenan verbs in that intransitive verbs cross-reference the subject of the clause, following an intransitive paradigm, while transitive verbs mark for subject and object of the clause in a transitive paradigm. Intransitive verbs usually agree with the gender of the subject, while transitive verbs show different combinations of person, gender, and number of subject and/or object. These do not follow a clear ergative or accusative pattern. Rather, they must be analyzed as having more complex patterns.

5.1. Intransitive verbs. The intransitive system primarily marks the gender of the subject, which is otherwise expressed in independent pronominal forms for third person only (see table 2).

Examples (3*a*)–(4*b*) show the intransitive verb *chhii-* 'know' with second-person singular masculine and feminine subjects (3) and first-person plural exclusive masculine and feminine subjects (4) in Mosetén of Covendo:

(3*a*) *Adyaj mi chhii-**Ø***
as.already 2SG know-M.S
yäe i-khan' jij-tii-Ø Ra Pash-khan'.
1SG M-INES go.to-SE(*ti*)-M.S La Paz-INES
'As you already know, I have come here to La Paz'. (CO)

(3*b*) *Khin raise' chhii-' mi, Jeanette,*
now want know-F.S 2SG Jeanette
*jäen' yäe bae'-i-**Ø** mi'-chhe' Köwë'do-we.*
how 1SG live-SE(*i*)-M.S 3SG-SUPERES Covendo-ADES

‘Now you, Jeanette, want to know how I live there in Covendo’. (CO)

(4*a*) *Tsin* *chhii-**Ø***.

1PL know-M.S

‘We (exclusive) know’. (CO) (masculine/mixed group)

(4*b*) *Tsin* *chhii-**’***.

1PL know-F.S

‘We (exclusive) know’. (CO) (feminine/mixed group)

The gender of the subject alone determines the form of the cross-reference ending, whether *-’* in the feminine or *-Ø* in the masculine. The pattern is the same for all persons except first-person plural inclusive, which marks person with the suffix *-ja’* (or a variant *-n’*) without regard to the gender of the subject:

(5) *Räej* *chhii-**ja’*** *jäena’-ra’* *mi* *dyaeke-ti-Ø.*

all know-1PL.IN.S where-IR 2SG stay-SE(*ti*)-M.S

‘We (including you) all know where you are staying’. (CO)

As mentioned above, there is no distinction between inclusive and exclusive first-person plural in the free pronoun, which invariably has the form *tsin* (compare example 6 to 4 above):

(6) ***Tsin*** *saeks-e-ja’.*

1PL eat-SE(*i*)-1PL.IN.S

‘We (inclusive) eat’. (CO) (gender not marked)

The forms discussed so far are the same in CO, SA, and CH. The only difference is that there is variation in the forms in Mosetén: a number of families in CO and SA use *-n'* for first-person plural inclusive, instead of *-ja'*. This variation also appears in the transitive paradigm and is discussed in more detail below.

5.2. Transitive verbs. In the transitive, the cross-reference endings reflect person, number, and gender of subject and/or object to a varying degree. Table 3 shows the distribution of cross-reference endings.[4]

The only differences in CO, SA, and CH are in the forms for first-person plural inclusive subjects (presented in boldface in table 3). These forms are noteworthy in another way: they apparently outrank other forms in the paradigm, and so I discuss them in more detail below. Let us first consider the cross-referencing forms, beginning with those of the first-person plural inclusive, and then look at three distinct configurations, following Hockett (1966): "local" configuration within speech-act participants (1 → 2, 2 → 1), "non-local" configuration between third persons (3 → 3) and "mixed" configuration between speech-act participants and third persons (1/2 → 3, 3 → 1/2).

5.2.1. First-person plural inclusive forms. The first-person plural inclusive forms are outsiders in the paradigm. They are do not correspond to other forms in either the intransitive or transitive paradigm, and I argue that they are likely later additions to the system. While CO marks first-person plural inclusive subject with *-ja'* in the intransitive and *-ti* and *-kseja'* in the transitive, CO and SA use *-ja* and *-kseja'* in both the transitive and intransitive (see table 4).

The system in CH and SA seems to be more consistent than that in CO in its use of *-ja* in all cases for the first-person plural inclusive subject in the intransitive and

transitive. When comparing these to the marker for first-person plural inclusive objects *-sin'* (7), we can conclude that the system is accusative, in that subjects of intransitive and transitive verbs are marked in the same way, while objects are marked differently.

(7) *Chhata' anik me' ji'-karij-**sin'**.*
sure sure DM CAUS-work-SE(*tyi*)[5].1PL.IN.O
'Sure, like that he makes us work'. (CO)

Althought the forms are different (*-ti-* in CO, *-ja-* in SA and CH), the use of the markers is the same: when appearing with third-person singular objects, the gender of the object is indicated by presence (F) or absence (M) of a glottal stop (8).

(8*a*) *Tsun ñïbe'-je-**ja-'** mö' phen.*
1PL give-SE(yi)[6]-1PL.IN.S-F.O 3F.SG woman
'We gave (something) to the woman'. (CH) (examples from Gill 1999:23, 43, 64, with orthography adjusted by me)

(8*b*) *Tsun ñïbe'-je-**ja-Ø** mu' muntyi'.*
1PL give-SE(*yi*)-1PL.IN.S-M.O 3M.SG man
'We gave (something) to the man'. (CH)

In third-person plural objects, the object is indicated by *-ksi*, followed by the subject marker *-ja'*. There is no gender marking on the object. I consider these forms in greater detail below (**4.2.3**) and argue that their irregularities can be explained by the underlying intransitive nature of *-ksi*.

To return to CO, the forms used with first-person plural inclusive subjects and third-person singular objects are likely later additions to the system, as they deviate from the corresponding forms in CH and SA. The source of *-ti* might be found elsewhere in the cross-reference system: it looks suspiciously like the native Mosetén marker used for the reflexive, as well as the forms used for second person acting on first person. I investigate the history of this and other first-person plural inclusive markers below. For now, let us consider the other cross-reference forms.

As in the intransitive, there is further variation in that some speakers of both varieties of Mosetén consistently replace *-ja'* (9*a*) with *-n'* (9*b*):

(9*a*) *Tsin* *soba-kse-**ja'**.*
1PL visit-SE(*i*).3PL.O-1PL.IN.S
'We are visiting them'. (CO)

(9*b*) *Tsin* *soba-kse-**n'**.*
1PL visit-SE(*i*).3PL.O-1PL.IN.S
'We are visiting them'. (CO)

In these cases, *-n'* is synonymous with *-ja'*.[7] It originates in a participial marker used to derive nonfinite forms from verbs; so *sobaksen'* (9*b*) could also mean 'being visiting' in a different context (see Sakel 2004:294).

5.2.2. Local configurations (between SAPs). Speech-act participants, i.e., first and second persons, are marked for person and number. A first-person singular acting on a second-person singular (1 → 2) is marked by *-ye*, while 2 → 1 is marked by *-ti'*. These are fused forms, for which it is not possible to say which part marks the

first and which the second person. When one or both arguments are plural, the plural suffixes *-yak* '1 → 2, at least one of which is plural' and *-tikha'* '2 → 1, at least one of which is plural' are used:

(10*a*) *ji'-chhae-ye-**yak***.

CAUS-know-SE(*yi*)-1.S→2.O/PL

'I teach you (PL); we teach you (PL); we teach you (SG)'. (CO)

(10*b*) *ji'-chhae-yi-**tikha'***

CAUS-know-SE(*yi*)-2.S→1.O/PL

'You (PL) teach me; you (PL) teach us; you (SG) teach us'. (CO)

(10*c*) *ji'-chhae-ye-**ye***

CAUS-know-SE(*yi*)-1SG.S→2SG.O

'I teach you (SG)'. (CO)

(10*d*) *ji'-chhae-yi-**ti'***

CAUS-know-SE(*yi*)-2SG.S→1SG.O

'You (SG) teach me'. (CO)

The plural markers *-yak* and *-tikha'* seem to be derived from the singular forms, as they begin with the same consonant. The plural forms are longer than the singular forms and both contain /a/ and /k/, although in different configurations.[8] The plural forms are used when one or both participants are plural, regardless of their role as subject or object. This type of plural marking in cross-referencing is attested in a number of other languages (see Zúñiga 2006:217 for a similar scenario in Mapudungun).

5.2.3. Non-local configurations (third persons). Third persons acting on third persons (3 → 3) display gender and number marking in cross-referencing. A masculine singular object is marked by *-te* and a feminine singular object by *-'*. In the plural, the forms are *-ksi* and *-ksi'*, but instead of marking the gender of the object, these mark the gender of the subject: *-ksi* marks a third-person plural object with a masculine subject and *-ksi'* a third-person plural object with a feminine subject. I consider the singular object forms first and return to the plural forms below.

From the system, it is clear that the 3 → 3SG forms are exactly the same as all the other forms with singular third-person objects. Indeed, a third-person object takes preference over any other persons in the system, apart from the first-person plural inclusive. The following examples all have third-person feminine objects, with a third-person masculine subject (11*a*), a local first-person singular subject (11*b*), and a first-person plural inclusive subject (11*c*).

(11*a*) *kawe-'*
see-3F.SG.O
'he sees her'

(11*b*) *kawe-'*
see-3F.SG.O
'I see her'

(11*c*) *kawi-ti-'*
see-1PL.IN.S-3F.SG.O
'we (inclusive) see her'

Now consider other third-person object forms. The third-person feminine singular object forms resemble the intransitive feminine subject forms in that both are marked by a glottal stop (see table 4). There is no indication of the subject in the cross-referencing. This aspect of cross-referencing follows an ergative pattern in that the transitive O is marked in the same way as the intransitive S. The transitive third-person masculine object forms are marked by *-te*, while the intransitive masculine forms are unmarked. Except for this additional affix, the system is identical in that all forms are marked the same way independent of the subject person (see table 5). Only the gender of the intransitive subject and the third-person transitive object determines the cross-referencing used.

Let us now turn to the third-person plural object forms. Rather than marking for the gender of the object, these forms distinguish masculine and feminine subjects. In this way, the third-person plural object forms resemble the intransitive inflection in distinguishing masculine and feminine subjects. Hence, gender agreement follows an accusative pattern in these markers. They contrast with the third-person singular object forms, for which gender agreement is with the object, following an ergative pattern.

This naturally leads one to ask why there are two different systems for singular and plural third-person objects. I have argued elsewhere (Sakel 2004:189) that the third-person plural object marker *-ksi* is likely to have originated in a detransitivizing derivational marker, such as an antipassive marker that downplays reference to a plural object. This original antipassive then developed into a general strategy of plural marking within the cross-reference system. If we treat *-ksi* as a separate element which was not originally used as a cross-reference marker, we are left with the forms in table 6.

The markers in table 6 are the same as in the intransitive. This explains why the third-person singular and third-person plural object forms are different: the latter are formally intransitive and are marked for the subject gender. This also explains why the forms for the first-person plural inclusive subject with third-person singular objects and with third-person plural objects are different; the latter again display intransitive forms. The distribution of the third-person plural object forms with *-ksi* may also indicate that it originated as a derivational intransitive marker: additional derivational markers generally appear after rather than before *-ksi*, while the rest of the cross-reference endings appear after the derivational markers. The derivational applicative marker *-bi* 'doing something to someone against their will' in (12) appears after *-ksi* and before the inflectional cross-reference marker *-ja'*:

(12) *Jeb-a-kse-**bi**-ja'.*

eat(tr)-SE(*i*)-3P.O-APPL.BI-1PL.IN.S

'We are eating them against their will'. (CO)

5.2.4. Mixed configurations (SAP and third person). Let us now turn to the mixed configuration, involving both speech-act participants and third persons. As discussed above, while the third-person plural object forms can be analyzed as intransitive, the third-person singular object forms all follow the same pattern, marking the gender and person of the object exclusively. Hence, except for cases with a first-person plural inclusive subject, the third-person object take precedence over the subject forms referencing speech-act participants.

This leaves the remaining third-person subject and first- or second-person object forms. As discussed above, for first-person plural inclusive objects, *-sin'*

appears before other persons in this layered system (13). The other forms for a third-person subject and a SAP object are *-n* '3SG → 1SG', '3SG → 2SG', '3SG → 1PL.EX' (14*a*) and *-nak* '3SG → 2PL' (14*b*). All are based on *-n*, with 2PL objects having an additional *-ak* following the *-n*.

(13) *näij-sin'*
look.at-SE(*tyi*)[9].1PL.IN.O
'he looks at us (inclusive)'

(14*a*) *näij-tyi-n*
look.at-SE(*tyi*)-3S→1PL.EX.O'
'he looks at us (exclusive)'

(14*b*) *näij-tyi-nak*
look.at-SE(*tyi*)-3S→2PL.O'
'he looks at you (plural)'

Intriguingly, the mixed form 3 → 2PL only occurs with second-person plural objects, unlike the local configuration forms which are marked for plural when either one or both arguments are plural. Hence, the latter extended plural form seems to occur in local configurations only.

Let us consider the forms in more detail. The singular and first-person plural exclusive forms all have *-n*, which may be a marker for a third person acting on a speech-act participant (3→SAP).[10] A second-person plural object has *-nak*. Comparing this to *-yak* 'second person acting on first person, at least one of which is plural', we can assume that *-ak* is a plurality marker on second-person objects. The

first part, *-n*, is used for third-person subject; thus this cross-reference ending can be divided into subject and object person markers. Other markers are less transparent, e.g., *-sin'*, which is used with third-person subjects and first-person plural inclusive objects. It includes an *-n(')*, which could be the marker of third-person subjects, but its form also somewhat resembles the free pronoun *tsin* 'we', from which it could have developed.

5.2.5. The ranking of the cross-reference markers. The transitive cross-referencing forms in Mosetenan, summarized in table 7, express the categories person, gender, and number for both subject and object. In many cases, only some of these categories are realized.

The first-person plural inclusive subject forms mark the person and number of the subject. When the object is singular, the gender of the object is indicated; when the object is plural, the person and number of the object are indicated.

In the case of SAP → SAP, the person markers are fused, i.e., the markers for subject and object cannot be separated. With regard to number, a separate marker is added for the plural; gender does not play a role as there is no gender marking in SAP → SAP.

The 3 → SAP forms are similar in that there is no gender marking and the plural requires an additional form. Again, no separate person markers can be identified. The first person plural inclusive object form is unusual in that it requires different marking altogether.

In third-person object forms (including both SAP→3 and 3→3), gender is an important category. There is a split between singular and plural forms. Singular object forms have marking for gender and person. For third-person plural objects, I have

argued for an intransitive-type system, where the gender of the subject is indicated along with the person (third person) of the object.

The grammatical categories (gender, number, and person) and the grammatical relations (subject and object) discussed above are distributed as shown in table 8.

A formula for which elements take precedence over others in cross-referencing in Mosetenan can now be presented. As shown above, first-person plural inclusive subjects always take precedence, ranking the highest. Following this, third-person singular object forms show no marking for their subject forms at all, while the other cross-referencing forms mark both subject and object (at least in some of the grammatical categories). Hence, we can say that third-person singular object forms outrank other cross-referencing form, as shown in the formula in (15).

(15) 1PL.IN.S > 3SG.O > X^{11}.S → SAP

It is possible to make even finer differentiations in the rankings. So far, I have looked at the category of person in relation to subject and object, but one can also consider the way in which the other grammatical categories are used in the system. Gender marking appears only with third persons. Gender marking need not be ranked with respect to SAPs. Cross-linguistically, third-person pronouns typically show distinctions such as gender, while first- and second-person pronouns do not (Bhat 2004:14). The mixed forms provide information on the ranking of gender marking: while 3 → SAP do not mark for gender, SAP → 3 do. Hence, gender marking of an object ranks higher than subject gender marking. Also, number marking of objects appears to rank somewhat higher than the marking of subjects, since 3 →S AP mark for the number of the objects only, while SAP → SAP are neutral. In 3 → 3 and SAP

→ 3, there is the additional complication of exceptional plural forms that do have marking for number. In general, number marking and gender marking are realized by separate forms, where they are present, as opposed to person marking which is generally a fused form of the two persons or restricted to one person only.

5.2.6. Comparison with other languages. We are now in a position to compare the Mosetenan system to those in other languages. DeLancey (1981) has described argument-coding systems in which indexation reflects hierarchical patterns, rather than grammatical relations, as subcategories of split-ergative systems; he now considers these as a separate type of HIERARCHICAL AGREEMENT PATTERNS (2003:sec. 8.2.1). According to DeLancey (2003), hierarchical agreement patterns are typologically relatively rare, appearing in Tibeto-Burman, Tangut, and Sahaptian languages. Hierarchical agreement is functionally similar to inverse systems, the difference being that there are no separate inverse markers. Overall, hierarchical alignment systems and inverse systems have identical hierarchies, namely, SAP arguments outrank third-person arguments. For various languages, subhierarchies have been suggested in order to deal with competing hierarchies. For example, Zúñiga (2006:84) shows that in Plains Cree first-person plural markers sometimes outrank other forms, with third-person animate forms appearing higher on the subhierarchy than singular SAP forms.

Mosetenan displays a somewhat different ranking in which only one SAP argument—first-person plural inclusive subjects—appears before third-person objects, which in turn outrank other SAPs. We could apply subhierarchies similar to those proposed for Plains Cree to Mosetenan. But is it possible to explain why the third-person object forms are preferred over any other person forms? One possibility

is that Mosetenan argument coding is the conflation of deictic SAP marking with an old ergative system involving third persons, in which third-person object forms aligned with intransitive subject forms. While these layers of the system are difficult to explain, it is possible to shed more light on why the first-person plural inclusive forms come before all other person forms.

6. The markers for the first-person plural inclusive revisited. Finally, let us consider the reasons that the first-person plural inclusive appears before other forms in the Mosetenan cross-reference system. The first-person plural inclusive seems to be the latest layer in the system, both in the ways in which it functions in the cross-reference system and because there are no separate pronouns for first-person plural inclusive and first-person plural exclusive; in both cases the form is *tsin*.

As to the source of the distinction in the first-person plural, I have argued elsewhere that *-ja* is likely a direct loan from another language, transferred both in form and meaning to Mosetén (Sakel 2005) and that the markers *-ti* and *-n'* of CO are native Mosetén markers that have been reanalyzed and grammaticalized into first-person plural inclusive markers, following the foreign pattern. In recent publications on language contact, a number of factors that lead to similarities and differences in language-contact situations have been identified (see, e.g., contributions in Aikhenvald and Dixon 2007 [in particular, Aikhenvald 2007] and Matras and Sakel 2007*b*). Sociolinguistic factors and dominance relationships between the languages are often seen as the main reasons for different types of language-contact situations, while at the lower level hierarchies of categories likely to undergo contact-induced changes can be identified (Matras 2007, which also discusses previous borrowing hierarchies; see references therein). A distinction that is particularly useful in the

analysis of contact phenomena is that of MAT versus PAT loans (Sakel 2007*b*). A MAT (matter) loan involves the borrowing of an element with its morphophonological material; while a PAT (pattern) loan is the calquing of a structure from another language, using native language markers. In the case of grammatical loans, the native forms are usually reinterpreted and there is an identifiable "pivot" of overlap between the functions in the source language and those in the recipient language (Matras and Sakel 2007*a*).[12] This distinction is relevant for the discussion of Mosetenan grammatical markers.

6.1. The marker *-ja*. Having introduced different types of loans, I now return to the first-person plural inclusive markers in Mosetenan. I have previously analyzed *-ja* as a MAT loan (Sakel 2005), arguing that the form is clearly a recent addition: the first-person plural inclusive markers do not follow the general rules of cross-referencing and I was unable to identify a marker *-ja* in Mosetenan that could have been reinterpreted as a first-person plural inclusive marker. On the other hand, one could argue that originally there was a productive form *-ja* that marked plurality or a related notion and that was later reinterpreted as a first-person plural inclusive. Later, these forms were grammaticalized and now occur only in cross-referencing, where one can see the remnants of *-ak* and *-ja* marking plurality, e.g., in the form *-tikha'* '2 → 1, PL'; but their exact source is not clear synchronically. Evidence for syncretism between inclusive forms and first- and second-person forms is found in many other languages, as shown in Cysouw (2005).

Whether *-ja* is a MAT or PAT loan, it is likely to have been introduced through language contact. Possible structural characteristics of the source language are (*a*) pro-drop, (*b*) no gender agreement in the verb, and (*c*) accusative alignment in bound

pronouns (Sakel 2005). Let us consider each of these. First, the source language was likely a pro-drop language, since only the cross-reference form referring to the first-person plural inclusive was borrowed, not any free pronouns. Alternatively, one could argue that Mosetenan is a pro-drop language and therefore there was no need to borrow a free pronoun along with the new cross-reference forms. Second, I predicted that the source language did not have gender agreement in the verb, based on the fact that the marker *-ja* has only this one intransitive form, while all the other cross-referencing markers have gender agreement. When looking at the SA and CH forms, however, one can see that with third-person singular objects the transitive forms show gender agreement with the object. This could be a later change in the transitive paradigm, but why doesn't gender agreement occur in the intransitive forms? The final characteristic involves accusative alignment in the source language. The reason for assuming accusative alignment is that *-ja* in Mosetenan is used with first-person plural inclusive subjects, while first-person plural inclusive objects are marked differently. This is the most pervasive of the characteristics listed above, although the Mosetenan system of argument coding is not clearly accusative or ergative in nature; various configurations are possible, depending on the speech-act participants and third persons in subject and object positions.

There does not seem to be a clear source language from which a MAT loan *-ja* was borrowed into Mosetenan (see detailed discussion in Sakel 2005). Still, it is possible to say that because the first-person plural inclusive marking has exceptional status within the cross-reference system, it is therefore likely to be a later addition to the system and likely to have been introduced by language contact. First, the distinction between an inclusive and exclusive first-person plural is frequently borrowed in contact situations (see Matras 2007 and Matras and Sakel 2007*b*).

Second, many languages near the Mosetenan-speaking area have such a distinction in the first-person plural and there has been areal influence between languages with this distinction (see Crevels and Muysken 2005). For example, Quechua has an inclusive–exclusive distinction and has been in contact with Mosetenan before and during the time of European colonization. This distinction is common in hierarchically superior languages and Mosetenan could have borrowed it, overriding existing tendencies within that system.

One explanation for the exceptional patterning of the marker *-ja* could be that it is a MAT loan from another language. If it is a loan, it is likely to be old enough to have been in the language since before the varieties split, as the form *-ja* is found in all Mosetenan languages. A likely time for this loan is the precolonial period, and the source would probably be an influential language from that era, suggesting Quechua as the likely source language. However, there is no marker of the type *-ja* in Quechua that could have been borrowed into Mosetenan. Another scenario is that *-ja* already existed in Mosetenan in other uses and was reinterpreted as a first-person plural inclusive subject marker following a pattern from another language. In this case, Quechua is a likely source, as the local varieties of Quechua have pro-drop and the verbal affixes follow hierarchical patterns (van de Kerke 1996). As discussed above, these are characteristics that I predict would be found in the source language.

6.2. The CO markers *-ti* and *-n'*. Mosetén of Covendo uses *-ja'* and the morphemes *-n'* and *-ti* to mark first-person plural inclusive subjects in cross-referencing. The latter two are clearly native Mosetén: *-n'* marks participles (such as *tsakan'* 'opened') and *-ti* occurs with 2 → 1 and also marks reflexives. If one considers a scenario where the first-person plural inclusive was introduced through

language contact, these two markers would be PAT loans that involve reinterpretations of native markers to express the new structure. They also were likely reinterpreted after *-ja* was established, since *-ja* is present in all three variants and in particular in intransitive forms in CO. The morpheme *-ti* could have been reinterpreted to mark the first-person plural inclusive because it is part of *-tikha'* (2→1, PL), i.e., the form in which the element *-ja'* appears. The reflexive element could have been highlighted in first- person plural inclusive forms under the influence of Spanish impersonal reflexives such as *se hace* 'it is done', *se dice* 'it is said'.[13]

The marker *-ti* also has a number of other points of functional overlap, referred to as "pivot" by Matras and Sakel (2007*a*), with the first person plural inclusive: it also involves speech act participants, but in a different construction. The use of this marker to express a first-person plural inclusive subject form could be due to pragmatic skewing of person distinctions, especially in the first and second person, to avoid direct reference to speech-act participants (Heath 1998). In this way, impersonal forms can be used to mark certain speech-act participants, as is the case in many languages, e.g., in colloquial Brazilian Portuguese *a gente* 'we' (literally, 'the people'). Use of the participial marker *-n'* for the first-person plural inclusive, as discussed above, could be interpreted as another skewing mechanism favored by some families in Covendo. Skewing can also occur in the number distinctions in Mostenan, i.e., where the singular forms 1SG → 2SG and 2SG → 1SG are distinct, while other numbers in the same person combinations are lumped together as 1 → 2(OTHER) and 2→1(OTHER).

Returning to *-ti*, one could ask why speakers of Mosetén of Covendo did not choose to use the plural form *-tikha'* instead. This would have included *-ja* and at the same time been consistent with the system. The reason must certainly be that the

category of first-person plural inclusive takes priority over the other persons. The strongest distinction in the Mosetenan cross-reference paradigm is that of the first-person plural inclusive subjects, contrasting with the other forms.

Another issue is why the forms of a second person acting on a first person are *-ti'* and *-tikha'*, i.e., they appear with a glottal stop that is typical of the feminine gender, although these forms are used with both genders. Perhaps these forms come from a form (reflexive) that distinguishes genders, but in cases like 2 → 1, etc.—parallel to the others like 1 → 2—gender distinctions are not needed and the originally neutral gender form—the feminine—was used. The same thing is happening with first-person plural inclusive subjects and third-person plural objects, where the form, *-kseja'*, always ends in a glottal stop, and in the intransitive paradigm, where the first-person plural inclusive marker *-ja'* always ends in a glottal stop.

7. Conclusions. The system of argument coding in Mosetenan is confined to the verbal cross-reference ending, as there is no case marking of overt NPs in the clause. There are some possible remnants of an ergative system, which are limited to third-person singular object forms. Apart from that, the cross-reference system of Mosetenan is layered: first-person plural inclusive forms appear before third-person objects, which in turn outrank the remaining persons in the paradigm. The most likely reason for the special status of the first-person plural inclusive forms is that they are the most recent layer of the hierarchy, due to language contact. The remaining Mosetenan forms can be described in terms of a layered system in which third persons outrank speech-act participants. This ranking order is contrary to the order found in

other hierarchical and inverse systems (DeLancey 2003) but can be compared to ranking found in subhierarchies, e.g., in Plains Cree (Zúñiga 2006).

[1] I wish to express my gratitude to the editors of this volume, Antoine Guillaume and Francoise Rose, for organizing the original workshop on argument coding in Lowland Bolivian languages, and for their detailed and helpful comments on this paper. I am also grateful for the comments from an anonymous reviewer and from participants at the workshop. Finally, as always, I am grateful for the help of the Mosetenes, in particular Juan Huasna Bozo, to whom I am very much indebted.

[2] The phoneme inventories for vowels and consonants in Mosetén and Chimane are as follows. Mosetén of Covendo vowel phonemes are: oral /a/, /i/, /e/, /ə/ (written *ae*), and /o/ (with the allophones [o] and [u]) and nasal /,]) (written *ä, ï, ë, äe,* and *ö* respectively). Mosetén of Santa Ana and Chimane vowel phonemes include one additional vowel pair: oral /a/, /i/, /e/, /ə/ (written *ae*), /o/ (with the allophones [o] and [u]), and /ɨ/ (written *u*) and nasal / /), and /ɨ/ (written *ä, ï, ë, äe, ö* and *ü* respectively). A phonemic difference in vowel length affects /, /, which can appear as short and long vowels (the long vowels are written *ii, ee, aee, ïï, ëë, äeë* respectively). Mosetenan consonant phonemes are: /p/, /t/, /tʲ/ (written *ty*), /k/, /ʔ/ (written ’), /pʰ/ (written *ph*), /kʰ/ (written *kh*), /b/, /d/, /dʲ/ (written *dy*), /f/, /s/, /ʃ/ (written *sh*), /h/ (written *j*), /ts/, /tʃ/ (written *ch*), /tsʰ/ (written *tsh*), /tʃʰ/ (written *chh*), /m/, /n/, /ɲ/ (written *ñ*), /r/, and the approximants /ʊ/ (written *w*) and /j/ (written *y*). The consonants /l/ and /g/ appear in some Spanish loanwords that are not phonologically integrated into Mosetén. The syllable structure of Mosetenan is (C)V(C)(ʔ). Stress is generally predictable and falls on the first syllable of a word, with a number of exceptions which are probably (old) loanwords.

[3] Abbreviations used in this paper are: ADES = adessive relation ‘at’; APPL.BI = applicative ‘against someone’s will’; CAUS = causative; CH = Chimane; CO = Mosetén of Covendo; DM = discourse marker; DEM = demonstrative pronoun; EX = exclusive; F = feminine; IN = inclusive; INES = inessive relation ‘in”; IR = irrealis marker; L = linker (of noun phrase elements); M = masculine; MAT = matter loan; PAT = pattern loan; O = object; PL = plural; PS = before, past marker; RD = reduplicated form (emphasis); SA = Mosetén of Santa Ana; SE = stem extension, verbal marker; S = subject; SG = singular; SUPERES = superessive relation ‘on, upriver’; TO = associated motion marker ‘to’; V = verb; 1, 2, 3 = first, second, third person; → = acting on; > = ranked higher than.

[4] I have omitted reflexive forms in table 3 in order to avoid confusion. Reflexive forms act like intransitive cross-reference markers in that all persons and numbers show the gender of the subject only, *-ti* ‘reflexive masculine’ and *-ti’* ‘reflexive feminine’, except for first-person plural inclusive subjects. The latter have only one form (without gender distinctions): *-tikha’* (see also Sakel 2004:191). This form can be analyzed as consisting of the reflexive marker *-ti-* plus *-ja’* ‘first-person plural inclusive, intransitive marker’, with an intervening consonant *-k-*. It is unclear what the function of this *-k-* is; it may be a phonological remnant of an older form.

[5] The stem extension *-tyi-* is exceptional in the Mosetenan system in that it is fused with a number of cross-reference markers. For this reason, no overt *-tyi-* marker appears in this example (see Sakel 2004:230–31).

[6] The Chimane stem extension *-je-* is related to the Mosetén form *-yi-* and occurs in many cases as *jeyi-* (see Sakel 2007*a*). For this reason, it is glossed as SE(*yi*) in these examples.

[7] In both varieties of Mosetén *-n'* can occur with intransitive verbs and with first-person plural inclusive subjects acting on third-person plural objects (these are historically intransitive forms). In SA, where *-ja* also occurs with first-person plural inclusive subjects acting on third-person singular objects, *-ja* is not replaced by *-n'*.

[8] Note that the singular forms *-ti-* and *-ti'-* and the plural form *-tikha'* are the same as the reflexive forms. The forms *-ti-* and *-ti'-* are used in all instances, except for reflexive first-person plural inclusive subjects, which are marked by *-tikha'*.

[9] The stem extension *-tyi-* is fused with the cross-reference marker (see also n. 6).

[10] Alternatively, one could argue that *-n* is a marker of third-person subject only and does not mark the person of the object. The *-n* does not appear in 3 → 3SG forms since third person singular objects outrank subject forms in the paradigm.

[11] X stands for any element, i.e., it summarizes the two possible structures: 3.S → SAP and SAP → SAP.

[12] An example of a lexical MAT loan would be the outright loan of a word, such as *igloo* from Greenlandic *illu* 'house' (interestingly, the original spelling of *illu* was *igdlo*, which indicates that the loan may have entered the European languages in written form). A typical lexical PAT loan is the German word *Wolkenkratzer*, literally 'clouds scraper', modeled on English *skyscraper*.

[13] This scenario was suggested to me by an anonymous reviewer.