Chickasaw and Choctaw, the two Western Muskogean languages, have several different relative clause constructions, each of which is internally headed: (1) relative clauses with final demonstratives; (2) relative clauses in which the verb is marked with the suffix -kaash; and (3) relative clauses in which the verb is marked with a form of the complement switch-reference marker -ka. Western Muskogeans relative clauses sometimes take the marking predicted by the case system, sometimes the marking predicted by the switch-reference system, and sometimes can take either marker, with different conditions for the three different relative clauses types and for extraposed modifying clauses. This complexity, we argue, arose from syntactic change in progress.

Keywords: internally headed relative clauses; case marking; switch-reference; Chickasaw; Choctaw

1 Introduction

Chickasaw and Choctaw, the two Western Muskogean languages, have several different relative clause constructions. We describe three types of relative clauses (RCs) in this paper: (1) RCs with final demonstratives (which we will refer to as demonstrative RCs); (2) RCs in which the verb is marked with the suffix -kaash (-kaash RCs); and (3) RCs in which the verb is marked with a form of the switch-reference marker -ka (-ka RCs).

All of these types of clauses are internally headed (IHRCs), although an RC minus its head (which we will refer to as a modifying clause) can be extraposed to the end of its sentence.

IHRCs are structurally both clauses (CPs) and nominal arguments of a higher predicate (DPs). Features associated with both structures—most crucially switch-reference marking (typically found on CPs) and morphological case marking (typically found on DPs)—
are found in each of these closely related languages. Most of the RCs (and modifying clauses) that this paper describes end in either \( t \) or a nasalized vowel, an opposition which is structurally ambiguous. In the case-marking system, \(-t\) vs. a nasalized vowel marks nominative vs. accusative case markers; in the switch-reference system, \(-t\) vs. a nasalized vowel marks same subject vs. different subject. In addition, it will be important that these IHRCs can also appear with one suffix that unambiguously marks case, oblique \(-ak\) in Chickasaw. We will find a complex system in which RCs sometimes take the marking predicted by the case system, sometimes the marking predicted by the switch-reference system, and sometimes can take either marker, with different conditions for the three different RC types and for IHRCs and extraposed modifying clauses.

Choctaw and Chickasaw are close to mutually intelligible, but exhibit noticeable differences at all levels of grammar, including the distribution of final markers on RCs and modifying clauses.

The focus of this paper is the description of this complex system in each of the two languages, giving tests to identify these final suffixes as either case markers or switch-reference markers. A short final section argues that the complexity arises from syntactic change in progress. Comparing the different behavior of the three types of RC, and the slightly different patterns in Choctaw and Chickasaw, we propose that the current system represents a merger in progress. In Pre-Western Muskogean, the demonstrative and \(-kaash\) RCs had only case-marking, fitting with their other overt DP markings; and \(-ka\) RCs had only switch-reference, fitting with their overtly clausal \(-ka\) switch-reference marking. In the partially merged systems shown in the two present-day languages, all three can take both case-marking and switch-reference marking, but under different conditions. It is of some additional interest that the merger appears to be sensitive to whether or not the switch-reference information is semantically redundant, and to reflect a historically more clause-like structure for the extraposed modifying clauses. This paper introduces some general properties of Western Muskogean sentence structure in section 1 and examines the three types of RCs mentioned above, first in Choctaw in section 2, and then in Chickasaw in section 3, and finally considers (in section 4) how the patterns of marking developed in the two languages.

2 Western Muskogean sentence structure

The unmarked word order in both Choctaw and Chickasaw is SOV. The verb agrees in person and number with the subject and at most one object. The subject is marked with a suffix ending in \( t \) (most commonly neutral \(-at\)) in both languages. (Choctaw (Ct) has an alternative nominative suffix ending in \( sh \).) The first object in the sentence can optionally have a suffix ending in a nasalized vowel (most commonly neutral \(-a\)). Chickasaw (Cs) also has an optional “oblique” suffix \(-ak\) that appears primarily on locative objects. Other objects are generally unmarked. These unmarked objects must occur immediately before the verb.

---

5 We have avoided proposing a specific analysis for the internal structure of these IHRCs, because our data appears to be compatible with a range of possible analyses (cf footnote 4). To handle our data, it is essential that the IHRC structure provide both a clause/CP element to fit with the clausal switch-references system and an argument/DP element to receive overt case marking. In addition, the case-marking and switch-reference systems must allow for an interaction in which exactly one of the two markers is phonologically expressed.

6 The alternative Choctaw nominative suffix ending in \( sh \) also unambiguously marks case and not switch-reference; unfortunately, we do not have sufficient data showing how this \(-sh\) interacts with RCs. The alternative switch-reference markers mentioned in footnote 11 are not homophonous with case markers, but they do not appear in structures relevant to our analysis.

7 For more information on case marking and agreement in Western Muskogean, see (among others) Nicklas (1972), Ulrich (1986), and Broadwell (2006) for Choctaw, Munro and Gordon (1982) and Munro and Will mond (2008) for Chickasaw. For nominative \(-sh\), see also footnote 6.
(1) **Choctaw**

Pam-at hattak pisa-tok.

Pam-NOM man see-PT

‘Pam saw the man.’

(2) **Choctaw**

Hattak-at ohooyo(-yä) i-nokshoopa-h.

man-NOM woman(-ACC) DAT-fear-TNS

‘The man is afraid of the woman.’

(3) **Chickasaw**

Hattak-at ihoo(-ä) pisa.

man-NOM woman(-ACC) see

‘The man sees the woman.’

(4) **Chickasaw**


man-NOM DAT-house-OBL / DAT-house / DAT-house-ACC LOC-eat-PT

‘The man ate at his house.’

It is also sometimes possible to leave subjects of main clauses unmarked for case in Choctaw (though not in Chickasaw):

(5) **Choctaw**

Ofi-ma sa-kobli-tok.

dog-that 1sII-bite-PT

‘That dog bit me.’

Both languages use switch-reference\(^8\) to mark verbs of subordinate clauses to indicate whether the referents of the subjects of the subordinate and matrix clauses are the same or different. Most\(^9\) switch-reference markers end either in \(t\) to indicate same subject or with nasalization to indicate different subject, reflecting an apparent homophony with the case markers. Thus, (6) and (7) illustrate the complement switch-reference markers: in (6), the subjects of the matrix and complement clauses are the same; in (7) they are different.

(6) **Chickasaw**

Jan-at ithåna toksali-kat.

Jan-NOM know work-CMP.SS

‘Jan, knows she, is working.’

(7) **Chickasaw**

Jan-at ithåna toksali-ka.

Jan-NOM know work-CMP.DS

‘Jan, knows she, is working.’ [Cs]

---

\(^8\) This term originated with Jacobsen (1967). The switch-reference system in Western Muskogean is discussed in detail in Payne (1980), Broadwell (1990; 2006), Munro and Willmond (1994; 2008), and Munro (2016), among others.

\(^9\) One pair of switch-reference markers uses Cs -cha, Ct -chah for same subject and Cs -na, Ct -nah for different subject. For discussion, see Linker (1987).
In both Chickasaw and Choctaw, RCs also normally end in t or nasalization. Is this final marking switch-reference or case marking?

3 Choctaw relative clauses
3.1 Demonstrative RCs

Demonstrative RCs typically end in the distal ‘that’ demonstrative suffix -mat/-mg, which marks farther off items:\(^{10}\)

(8) *Choctaw*\(^{11}\)

Ofi Jan kobli-tok-mat bali-t kaniya-h.
dog Jan bite-PT-THAT.NOM|SS run-PRT go.away-TNS

‘The dog that bit Jan ran away.’

(9) Charles-at Jan(-at) hattak ayoppachi-ma apila-h.
Charles-NOM Jan(-NOM) man like-that.ACC|DS help-TNS

‘Charles helped the man Jan likes.’

(10) Hattak ayoppachi-li-ma ish-apila-h.
man like-1SG-that.ACC|DS 2SG-help-tns

‘You helped the man I like.’

*Ofi* ‘dog’ is not marked for case in (8), even though it is the subject of both the RC and the matrix clause; similarly, *Jan*, the subject of the RC in (9), may optionally be left unmarked. Nominative marking in both Choctaw RCs and main clauses is variable, as discussed in connection with (5) above. In our data, subjects of RCs are more frequently unmarked for case than subjects of main clauses.

In (8) the RC is both a subject RC and a same-subject switch-reference clause, since its referent, *ofi* ‘dog’, is the subject of both the matrix and the RC. Thus, it is impossible to determine whether the -mat demonstrative indicates nominative case or same subject. In (9) and (10), conversely, the RC is an object (its referent is the object of the main clause) and the subjects of the RC and matrix clause are different, so it is indeterminate whether the demonstrative -mg indicates accusative case or different subject.

The useful test cases are those in which the appropriate switch-reference marking and case marking would produce different forms. For example, if the RC is a different-subject/subject clause (i.e. it is the subject of the main clause, but the subjects of the two clauses are different), then final -mat can only indicate nominative case and -mg can only be a different-subject marker. Either marking is acceptable in examples like (11), in which *Jan* is the subject of the RC and the RC is the subject of the matrix clause

(11) Jan ofi ipita-tok-ma/-mat bali-t kaniya-h.
Jan dog feed-PT-that.DS/-that.NOM run-PRT go.away-TNS

‘The dog Jan fed ran away.’

\(^{10}\) The proximate –pat / -p demonstrative can be used similarly but is rare in our data. This makes sense, since people tend to use RCs to identify things out of sight or at a distance.

\(^{11}\) All examples in this section are from Choctaw; all those in section 4 are from Chickasaw.

\(^{12}\) In principle, before any other data is considered, -mat may be marking either nominative case or same-subject switch-reference. We will continue to gloss these suffixes this way, until we make the argument that the use of the two can be distinguished in certain cases. At that point, we will gloss more precisely.
The other situation in which case marking and switch-reference produce different forms is a same-subject/object clause, as in (12). Here, -mat on the RC must mark same subject and -ma must mark accusative case. Again both forms are acceptable.

(12) Hattak ayoppáchi-li-ma/-mat apila-li-h.
    man like-1SI-that.ACC/-that.SS help-1SI-TNS
    ‘I helped the man I like.’

An alternative to the analysis that these clauses can be marked for either switch-reference or case would be that -mat and -ma mark neither switch-reference nor case, but instead vary freely on any RC. The data, however, refute such an analysis, since it is ungrammatical to mark a different-subject/object RC with -mat, as in (13), or a same-subject/subject RC with -ma, as in (14).

(13) Hattak ayoppáchi-li-ma/*-mat ish-apila-h.
    man like-1SI-that.ACC|DS/*that.SS|NOM 2SI-help-TNS
    ‘You helped the man I like.’

(14) Hattak iya-tok-mat/*-ma a-ki i-toksali-h.
    man go-PT-that.SS|NOM/*that.DS|ACC 1SI.DAT-father DAT-work-TNS
    ‘The man that left works for my father.’

In addition, there are structures where one of these apparently ambiguous affixes has only one reading: for example, to get the good reading of (15), -mat has to be interpreted as a case marker and cannot be interpreted as a same-subject marker. If -mat is the nominative marker, then the RC must be the subject, and we correctly get the reading ‘The dog Jan bought hit her_i/j/him/it’ with a third-person singular null pronoun as object in the main clause. If we could take the -mat in (15) as marking same subject, leaving case unmarked, we’d get the blocked reading *‘Jan hit the dog she_i bought’, parallel to the good reading of (12). To block the bad reading of (15), something must force -mat to be the nominative case marker and not the same-subject marker. The structural effect must be strong, since the blocked reading is pragmatically much more plausible than the observed reading.

(15) Jan-at ofi chopa-tok-mat isso-tok.
    Jan-NOM dog buy-PT-that.NOM hit-PT
    ‘The dog Jan bought hit her_i/j/him/it.’ but not *‘Jan hit the dog she_i bought.’

What structural difference distinguishes (12), where -mat can indicate same subject, from (15), where the same-subject parsing is blocked and -mat must mark nominative case? Checking the full range of main-clause and RC subjects, the descriptive generalization appears to be that the same-subject parsing is blocked only if both the main-clause and RC subjects are third person.\(^{13}\)

If the -mat in (15) is replaced with the accusative/different-subject marker -mg as in (16), the plausible reading that was blocked for (15) becomes the primary reading, ‘Jan hit the dog she_i bought’. This same-subject reading requires interpreting -mg as an accusative case marker; the accusative parsing also permits different-subject readings with the RC as object. For these readings it cannot be determined whether -mg is marking switch-reference or case.

\(^{13}\) Looking ahead, this condition is surprising, because in other cases we find that third-person subjects favor switch-reference readings over case marking, presumably because switch-reference provides potentially important coreference information for third person, but is redundant for marked first and second persons.
(16) Jan-at ofi chopa-tok-ma isso-tok.
    Jan-NOM dog buy-PT-that.ACC|DS hit-PT
    ‘Jan hit the dog she/he bought.’

(15) provides an example where the subjects are third person and -mat must be interpreted as a case marker, but we haven’t found any case with third-person subjects where -mat must be interpreted as a same-subject marker. In contrast (11) and (16) combine to show that -mg can be interpreted as either an accusative case marker or a different-subject switch-reference marker. In (16), -mg must be parsed as an accusative case marker to get the pragmatically preferred same-subject interpretation; but the available different-subject readings might be accounted for by parsing -mg as marking different subject or as marking accusative case, which would leave switch-reference unmarked and permit both same-subject and different-subject readings. In (11), however, the use of -mg on a subject RC shows an instance of -mg which must be parsed as different-subject marking.

In all situations, then, demonstrative RCs can be marked appropriately for case, but only a subset of them can be marked in ways that the switch-reference system would predict. Because the switch-reference interpretation is not always available, we conclude that while case marking on demonstrative RCs is fully productive, switch-reference on demonstrative RCs is not. We will return to this point when we consider the historical origin of these patterns.

The RC can be extraposed to the end of the main clause, with the head left in the main clause, as in (17) and (18). If both the extraposed modifying clause and the main clause have a third-person subject, then both the switch-reference-marked and the case-marked versions are possible. (18) shows that -mat can have the same-subject switch-reference interpretation in an extraposed modifying clause, contrasting with (15) and (16), where the RC is not extraposed and -mat must be interpreted as a case marker.

(17) Ofi bali-t kaniya-h Jan kobli-tok-mat.
    dog run-PRT go.away-TNS Jan bite-PT-that.NOM|SS
    ‘The dog that bit Jan ran away.’

(18) Jan-at ofi isso tok chopa-tok-ma /-mg.
    Jan-NOM dog hit-PT buy-PT-that.SS /-that.ACC|DS
    ‘Jan hit the dog she/he bought.’

The two variants of (18) differ crucially in meaning. The same-subject variant with -mat forces a reading in which Jan and she are coreferential; the version with mg permits the subject of the subordinate clause to be interpreted as the same as the subject of the matrix clause or different from it. As with (15) and (16), the -mg must be accusative if the subjects are coreferent, but might be either accusative or different-subject if the subjects are not coreferent.

The distribution of suffixes found at the end of demonstrative relative clauses in Choctaw is summarized in Table 1 below. For ease of comparison with the data presented in Tables 2–6 below, we indicate the possibility of nominative/same-subject -mat with T (since all these forms have final -t) and accusative/different-subject -mg with N (since these have final nasalization). When both forms are given in a cell of the table, it means either the form predicted by case or the form predicted by switch-reference is acceptable.

---

14 As we noted in footnote 4, an alternative analysis might treat the extraposed RC as an appositive with a null internal head. We will not consider this approach further here.
3.2 -kaash RCs

In -kaash RCs, the suffix -kaash appears on the verb of a relative clause with past reference.\(^{15}\)

(19) Ofi ipita-li-kaash bali-t kaniya-h.
    dog feed-1sI-kaash run-PRT go-away-TNS
    ‘The dog I fed ran away.’

Bare -kaash-marked RCs like (19) are unmarked for both case and switch-reference. To mark either case or switch-reference, the -kaash-marked verb can be followed by a marked demonstrative, in the same way as the tense-marked verbs in the demonstrative RCs discussed above.

(20) Ofi ipita-li-kaash-mat/* -m a bali-t kaniya-h.
    dog feed-1sI-kaash-that.NOM/*-that.DS run-PRT go.away-TNS
    ‘The dog I fed ran away.’

(21) Hattak Jan pisa-kaash-mat/* -ma mishshamahma atta-h.
    man Jan see-kaash-that.SS|NOM/*-that.DS|ACC over.there stay-TNS
    ‘The man who saw Jan lives over there.’

(22) Ofi ipita-li-kaash-ma /*/-mat ish-písa-tok.
    dog feed-1sI-kaash-that.DS|ACC/*-that.SS|NOM 2sI-see-PT
    ‘You saw the dog I fed.’\(^{16}\)

The distribution of -mat and -ma in these -kaash RCs matches that in the demonstrative RCs: Compare (20) with (12), (21) with (14), and (22) with (13). Thus, the same arguments let us conclude that -kaash RCs also mark either case or switch-reference. In-situ -kaash RCs with third-person subjects in sentences with third-person subjects (as in (23) and (24)) show the same marked pattern as the demonstrative RCs in (15) and

\(^{15}\) -kaash includes the nominal ‘aforementioned’ suffix -aash (Broadwell 2006: 89; Munro & Willmond 1994: xxxiv, li). No other tense marking appears on the verb of a -kaash RC; -tok, for example, is incompatible with -kaash.

\(^{16}\) Example from Broadwell (2006: 299–300, (186)), orthography and gloss adapted.
(16): -mat is always interpreted as a case marker, while -mg can be interpreted as either switch-reference or case marking.

(23) Jan-at ofi chop-a-kaash-ma isso-tok.
    Jan-NOM dog buy-kaash-that.ACC|DS hit-PT
    ‘Jan hit the dog she/i/j/he bought.’

(23), with -mg, works like the parallel demonstrative RC in (16). That is, the subjects of the two clauses may be interpreted as the same or different. If the interpretation is same subject, we must interpret the -mg as case marking; if the interpretation is different subject, it cannot be determined whether the -mg marks case or switch-reference.

(24) Jan-at ofi chop-a-kaash-ma isso-tok.
    Jan-NOM dog buy-kaash-that.NOM hit-PT
    ‘The dog Jan bought hit her/i/j/him/it.’ but not *‘Jan hit the dog she bought.’

The -kaash RC in (24) acts like the demonstrative RC in (15). The final suffix on the embedded clause (-mat) in (24) cannot be interpreted as forcing a same-subject reading. (24) has only the reading in which -mat marks nominative so that the RC, which has ofi ‘dog’ as its head, is the subject of isso-tok ‘hit-PT’. The object of isso-tok is freely interpretable as any third-person entity identifiable in the discourse.

Like the demonstrative RCs, -kaash RCs can be extraposed, leaving the head in the main clause, as in (25) and (26). When the modifying clause is extraposed, it can be marked with either switch-reference or case.

(25) Ofi bali-t kaniya-h ipita-li-kaash-ma/-mg.
    dog run-PRT go.away-TNS feed-1I-kaash-that.NOM/-that.DS
    ‘The dog I fed ran away.’

(26) Jan-at ofi isso-tok chop-a-kaash-ma/-mg.
    Jan-NOM dog hit-PT buy-kaash-that.SS/-that.ACC|DS
    ‘Jan hit the dog she/i/j/he bought.’

The two variants of (26), like those of (18), mean crucially different things. In the -mat version, the subjects of the two clauses are obligatorily coreferent, as expected with -mat marking same subject. In the -mg version, the subjects may be coreferent or disjoint in reference, as predicted by the same analysis as (18).

The summary in Table 1 above accounts for the data in -kaash RCs as well as in the demonstrative RCs, except that it is possible to have -kaash RCs without demonstratives, and such clauses do not mark either case or switch-reference.

3.3 -ka RCs

Verbs in the third type of RC end in the complement switch-reference markers -kat and -ka as seen in (6) and (7). The distribution of t and nasalization in these -ka RCs shows that these can indicate either case or switch-reference, just like demonstrative and -kaash RCs. Same-subject/subject -ka RCs can only appear with -kat, as in (27), while different-subject/object -ka RCs can only appear with -ka, as in (28) and (29).
(27) Ofi Jan kobli-tokat\textsuperscript{17}/\textsuperscript{*}-toka bali-t kaniya-h.
dog Jan bite-PT.CMP.NOM|DS/\textsuperscript{*}-PT.CMP.ACC|DS run-PRT go.away-TNS
‘The dog that bit Jan ran away.’

(28) Hattak Pam i-toksali-ka/\textsuperscript{*}-kat apila-li-h.
man Pam DAT-work-CMP.ACC|DS/\textsuperscript{*}-CMP.NOM|SS help-1SI-TNS
‘I helped the man who works for Pam.’

(29) Hattak ayoppáchi-li-ka/\textsuperscript{*}-kat ish-apila-h.
man like-1SI-CMP.ACC|DS/\textsuperscript{*}-CMP.NOM|SS 2SI-help-TNS
‘You helped the man I like.’

When switch-reference and case marking would produce different forms, either type of
marking is possible. Different-subject/subject RCs can be marked with either -kat or -ka,
as in (30) and (31), as can same-subject/object RCs, as in (32).

(30) Ofi ipita-li-tokat/-toka bali-t kaniya-h.
dog feed-1SI-PT.CMP.NOM/-PT.CMP.DS run-PRT go.away-TNS
‘The dog I fed ran away.’

(31) Jan-at ofi ipita-tokat/-toka bali-t kaniya-h.
Jan-NOM dog feed-PT.CMP.NOM/PT.CMP.DS run-PRT go.away-TNS
‘The dog Jan fed ran away.’

(32) Jan-at ofi chopa-tokat/-toka isso-tok.
Jan-NOM dog buy-PT.CMP.SS/-PT.CMP.ACC hit-PT
‘Jan\textsubscript{1}, hit the dog she\textsubscript{1} bought.’

As with the other RC types, modifying -ka clauses can be extraposed, leaving the head in
the main clause, as in (33) and (34).

(33) Ofi-it bali-t kaniya-h Jan-at isso-toka/-toka.
dog-NOM run-PRT go.away Jan-NOM hit-PT.CMP.DS/PT.CMP.NOM
‘The dog Jan hit ran away.’

(34) Jan-at ofi isso-tok chopa-tokat/-toka.
Jan-NOM dog hit-PT buy-PT.CMP.SS/-PT.CMP.ACC
‘Jan\textsubscript{1}, hit the dog she\textsubscript{1} bought.’

-Ka relative clauses in Choctaw, unlike the other two relative clause types, are never sensi-
tive to whether switch-reference marking would be informative (when both subjects are
third person) or redundant (when the RC or MC subject is first or second person), and -ka
relative clauses can always mark either switch-reference or case. The distribution of final
suffixes on -ka relative clauses is summarized in Table 2, where T indicates a -kat clause
and N a -ka clause.

\textsuperscript{17} -Tokat / -toka is composed of the past/perfective marker –tok plus complement –kat/-ka.
3.4 Summary

To account for the range of acceptable marking on all three kinds of RCs in Choctaw, it is necessary to analyze them as marked either with switch-reference or case marking. Thus, final -t in -mat or -kat in (11), (24), (25), (30), and (31), must be identified as indicating nominative case, while in (12), (18), and (32) it must be identified as indicating same subject. In the same way, final nasalization in -ma or -ka can mark either accusative case or different-subject switch-reference. Thus, in cases like (30), (31), and (32), for example, although the surface variation in the sentences looks the same, it reflects different relationships: in (31) and (32) -kat is nominative case marking contrasting with -ka, the different-subject marker, while in (33) -kat is the same-subject marker contrasting with -ka, the accusative case marker.

In general, when only one of these markings is possible, that marking is structurally ambiguous. For example, final -mat or -kat on a relative clause serving as the subject of the main clause and having the same subject as the main clause can be interpreted as either a nominative case marker or a same-subject switch-reference marker. The ambiguity here produces not different meanings, but different structural properties, like the ambiguity Hankamer (1977) called “disjunctive multiple analyses”.

Almost all Choctaw RCs can be marked with either case or switch-reference; the only exception to this generalization is found in sentences in which an in-situ demonstrative or -kaash RC has a third-person subject and the matrix clause has a third-person subject, in which case any -mat marking must be interpreted as nominative, rather than as same-subject marking.  

4 Chickasaw relative clauses

4.1 Demonstrative RCs

As in Choctaw, the usual Chickasaw demonstrative on RCs is distal, yamma ‘distant, unmarked, that’. Chickasaw typically requires overt nominative marking on all subjects, except subjects of RCs. In RCs, the subject is obligatorily unmarked if the relative verb is intransitive, and optionally unmarked if the verb is transitive.

Just as in Choctaw, either switch-reference or case can be marked on demonstrative RCs.

(35) Ofi’ wooci-yammat/*yamma-sa-kisili-tok. 
   dog bark that.NOM|SS/*-that.ACC|DS 1SII-bite-PT 
   ‘The dog that barked bit me.’

(36) Ofi’ Jan kisi-tok yammat mali-t kaniya-tok. 
   dog Jan bite-PT that.NOM|SS run-PRT go.away-PT 
   ‘The dog that bit Jan ran away.’

Table 2: Final suffixes on -ka relative clauses in Choctaw.

<table>
<thead>
<tr>
<th>Case role of RC in MC</th>
<th>Form predicted by case</th>
<th>Switch-reference</th>
<th>Form predicted by switch-reference</th>
<th>Actual form on in-situ RCs</th>
<th>Actual form on extraposed RCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>T</td>
<td>Same subject</td>
<td>T</td>
<td>T</td>
<td>T or N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>T or N</td>
<td></td>
</tr>
<tr>
<td>Non-subject</td>
<td>N</td>
<td>Same subject</td>
<td>T</td>
<td>T or N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Final suffixes on -ka relative clauses in Choctaw.

For plain demonstrative RCs with -mat, see discussion of (11), (15), (16), and (18) on pages 4–6; for RCs with -kaash plus demonstrative, see discussion of (23), (24), and (26) on pages 7–8.
Hattak píš-li-tok yamma/yammat chaaha.
man see-1SI-PT that.ds/that.NOM be.tall
'The man I saw is tall.'

Hattak píš-li-tok yamma/yammat ayoppásh-li.
man see-1SI-PT that.ACC/that.SS like-1SI
'I like the man I saw.'

Hattak a,sa,pila-tok yamma ayyoppásh-li.
man 1SI,help-PT that.ACC|DS like-1SI
'I like the man who helped me.'

Another piece of evidence that supports the hypothesis that either switch-reference or case can be marked on demonstrative RCs is the distribution of the oblique case marker -ak (illustrated in (4)), which is not homophonous with any switch-reference marker. Object RCs can be marked with -ak as in (40), where the subject of the RC can be treated as the same as or different from the subject of the matrix clause.

Pam-at kaar chompa-tok yammak ayyoppánchi
Pam-NOM car buy-PT that.OBL like
'Pam likes the car she bought.'

Subject RCs cannot be marked with -ak, as in (41), even when the subjects of the two clauses are different. Yammak in all of its occurrences marks case, not switch-reference. An unambiguous non-subject case marker can be used in examples with an object RC like (40), but not in examples like (41) in which the RC is a subject.

Kaar chompa-li-tok yamma/yammat/*yammak ik-ayyo’b-o.
car buy-1SI-PT that.NOM/that.DS/that.OBL HYP-be.good.NEG-NEG
'The car I bought is no good.'

This distribution implies that when yamma follows a subject RC like (41), it must indicate different subject, rather than accusative, since if it were a case marker it should be ungrammatical in exactly the way that yammak is ungrammatical.19

As in Choctaw, it is possible to extrapose RCs, leaving the head in the main clause, as in (42), (43), and (44). When the clause is extraposed and has a third-person subject, only switch-reference marking is possible. This suggests that, in Chickasaw, the extraposed

---

19 It seems attractive to suppose that earlier in the history of Western Muskogean, these RCs were marked with case suffixes, since demonstratives would seem to be most appropriately marked with nominal suffixes. These constructions would then have undergone (partial) reanalysis with the demonstrative reanalyzed as a complementizer and appropriate to mark with switch-reference. Superficially such a historical analysis certainly seems possible. It is difficult, however, to find independent support for it; instead there appears to be some (slight?) evidence that demonstratives are verbal. For instance, the ‘aforementioned’ nominal suffix -aash used in (i) appears as -kaash when attached to a verb (as in the -kaash RCs in section 2.2 above and section 3.2 below); it is also -kaash following a demonstrative, as in (ii):

(i) Ofi’aash falama-t aya-tok.
dog-afore return-PRT go-PT
'The (aforementioned) dog went back again.'

(ii) Ofi’ yamma-kaash falama-t aya-tok.
dog that-kaash return-PRT go-PT
'That (aforementioned) dog went back again.'

Also, the nominative and accusative forms of the demonstratives are phonologically aberrant: since their final syllable is heavy (distal yamm-, proximate yapp-), we’d expect their nominative forms to be yammaat and yappat instead of yammat and yappat. These unexpected forms look like the same-subject form of the verb mígma ‘to be all’, which is mígmat.
modifying RC keeps its clausal status while losing its DP role; rather, the head functions as the DP in the matrix clause, while the RC does not.

(42) Ofi’-at mali-t kaniya-tok Jan-at ipita-tok yamm/a*yammat.
    dog-NOM run-PRT go.away-PT Jan-NOM feed-PT that.DS/*that.NOM
    ‘The dog Jan fed ran away.’

(43) Jan-at ofi’ ipita-tok chompa-tok yammat.
    Jan-NOM dog feed-PRT buy-PRT that.SS
    ‘Jan, fed the dog she, bought.’

(44) Jan-at ofi’ ipita-tok chompa-tok yamm/a.
    Jan-NOM dog feed-PRT buy-PRT that.DS
    ‘Jan, fed the dog she, bought.’

The distribution of suffixes found at the end of demonstrative relative clauses in Chickasaw is summarized in Table 3 below. Here, T indicates nominative/same-subject yammat and N accusative/different-subject yamm/a. The third option is -ak, indicating oblique yammak.

### Table 3: Suffixes on demonstrative relative clauses in Chickasaw.

<table>
<thead>
<tr>
<th>Case role of RC in MC</th>
<th>Form predicted by case</th>
<th>Switch-reference</th>
<th>Form predicted by switch-reference</th>
<th>Non-third person subjects in either RC or MC</th>
<th>Actual form on in-situ RCs</th>
<th>Actual form on extraposed RCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>T</td>
<td>Same subject</td>
<td>T</td>
<td>Yes</td>
<td>T or N</td>
<td>T or N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>Yes</td>
<td>No</td>
<td>T or N</td>
</tr>
<tr>
<td>Non-subject</td>
<td>N or -ak</td>
<td>Same subject</td>
<td>T</td>
<td>Yes</td>
<td>T or N</td>
<td>T or N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>Yes</td>
<td>No</td>
<td>N</td>
</tr>
</tbody>
</table>

4.2 -kaash RCs

In Chickasaw, as in Choctaw, -kaash can be used on past tense RCs in all roles without any further marking.20

More interestingly, -kaash RCs can be followed by the focus suffix -oot or -o,21 showing the same case/switch-reference variation discussed above.

(45) Jan-at ofi’ ipita-kaash-oot/-o mali-t kaniya-tok.
    Jan-NOM dog feed-kaash-FOC.NOM/-FOC.DS run-PRT go.away-PRT
    ‘The dog Jan fed ran away.’

---

20 Thus, the focus suffixes -oot and -o following -kaash in the examples below can be omitted without change in acceptability.

21 Focus suffixes are used in typical focus contexts such as answers to wh- questions, but they also show up in other modifying contexts, following stative verbs and quantifier verbs used as modifiers (which are arguably reduced RCs).
(46) Ofi’ Jan kisili-kaash-o/*-o mali-t kaniya-tok.
       dog Jan bite-kaash-F.OC.SS/NOM/*-FOC.DS/ACC run-PRT go.away-PT
   ‘The dog that bit Jan ran away.’

In examples like (45), Chickasaw -kaash RCs, like demonstrative RCs, appear to be freely marked for either case or switch-reference. However, (46) shows that using -o is blocked where switch-reference would require same-subject marking. It is impossible to mark -kaash RCs with accusative -o when switch-reference would require same-subject marking, as in (47) and (48). Thus, case marking on these RCs is not fully productive.22

(47) Jan-at ofi’ isso-kaash-o/*-o ipita-tok.
       Jan-NOM dog hit-kaash-F.OC.SS/*-FOC.ACC feed-PT
   ‘Jan fed the dog she hit.’

       dog feed-1S-1S-kaash-F.OC.SS/*-FOC.ACC hit-1S-PT
   ‘I hit the dog I fed.’

Extraposed -kaash RCs can only be marked for switch-reference. Compare (45) with (49):

(49) Ofi’-at mali-t kaniya-tok Jan-at ipita-kaash-o/*-o/*-oot.
       dog-NOM run-PRT go.away-PT Jan-NOM feed-kaash-F.OC.DS/*-FOC.NOM
   ‘The dog Jan fed ran away.’

Table 4 summarizes the data for Chickasaw -kaash RCs, with T indicating -kaashoot and N -kaasho.

### 4.3 -ka RCs

Options for marking Chickasaw RCs ending with the complement switch-reference markers -kat and -k are more restricted than for -kaash RCs. As with -kaash RCs, same-subject/object RCs can only be marked with switch-reference (with one exception illustrated in (52), (53), and (54)).

<table>
<thead>
<tr>
<th>Case role of RC in MC</th>
<th>Form predicted by case</th>
<th>Switch-reference</th>
<th>Form predicted by switch-reference</th>
<th>Actual form on in-situ RCs</th>
<th>Actual form on extraposed RCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>T</td>
<td>Same subject</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>T or N</td>
<td>N</td>
</tr>
<tr>
<td>Non-subject</td>
<td>N</td>
<td>Same subject</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Table 4: Suffixes on -kaash relative clauses in Chickasaw.

22 This constraint on case marking may reflect a grammaticization of a preference for nominative/same-subject marking. If so, the grammaticization is incomplete since nominative marking varies with different-subject marking where appropriate. It seems possible that this reflects an incomplete reanalysis from a structure which exclusively marked switch-reference to one which allows limited case marking as well; same-subject marking appears to be less susceptible to replacement by case markers than different-subject marking.
A different-subject/subject RC can always be marked with the different-subject switch-reference marker -ka, but it can be marked for nominative case (with -kat) only if the subject of the RC is first or second person, as in (51). If the subject is third person, only switch-reference marking is possible, as in (52).

(51) Ofi’ ipita-li-tok/*-tokat mali-t kaniya-tok.
    dog feed-1SI-CMP.DS/*-CMP.NOM run-PRT go.away-PRT
    ‘The dog I fed ran away.’

(52) Jan-at ofi’ ipita-tok/*-tokat mali-t kaniya-tok.
    Jan-NOM dog feed-CMP.DS/*-CMP.NOM run-PRT go.away-PRT
    ‘The dog Jan fed ran away.’

In this kind of RC, therefore, case marking is even more restricted. Case marking is allowed only when the agreement marking on the matrix and RC verbs clearly allows the switch-reference facts to be inferred without requiring overt switch-reference marking.23

As noted above, the Chickasaw oblique suffix -ak is not homophonous with any switch-reference suffix, so if -ak appears on a RC, that clause is marked as an object. Object RCs can be marked with -ak, as in

(53) Chokka’ chompa-li-tok-ak Pam-at ahánta.
    house buy-1SI-CMP.OBL Pam-NOM live
    ‘Pam lives in the house I bought.’

(54) Chokka’ chompa-li-tok-ak ahánta-li.
    house buy-1SI-CMP.OBL live-1SI
    ‘I live in the house I bought.’

However, the availability of -ak marking is limited. It can only appear on object RCs under two conditions: when the subject of the RC is either first or second person, as in (53)–(54), or when the subject of the RC is different from the matrix clause subject, as in (55).

(55) Pam-at nipi’ hopoon-tok-ak apa-tok.
    Pam-NOM meat cook-CMP.OBL eat-PRT
    ‘Pam ate the meat she cooked.’

The first condition is reminiscent of the distribution of the nominative interpretation of -kat RCs: it restricts -ak to marking those clauses in which switch-reference marking would be redundant. Otherwise, -ak can only be used on different-subject/object RCs like (55).

23 Perhaps, since -ka cannot otherwise be used except on different-subject RCs, -ka RCs are never case-marked. Instead, one might propose that under some circumstances an object DP can control switch-reference—perhaps a rule promotes an object to subject (as proposed and rejected in the appendix to this paper) or alters the control of switch-reference without affecting other subject properties. This kind of analysis has several drawbacks—for example, the promotion or feature assignment process would be restricted to occurring in subject RCs with first- or second-person subjects and the promotion of the object in a subordinate clause which has the same subject as the main clause would be pragmatically odd.
Same-subject marking can only be displaced when the information it bears is redundant; this distribution is parallel to nominative marking on RCs which similarly can displace different-subject marking only when the information it bears is redundant. Case marking on -ka RCs is restricted, suggesting a secondary development based on the homophony between the switch-reference and case systems and the structure of RCs as both DPs (and therefore eligible for case marking) and embedded CPs (and therefore eligible for switch-reference marking).24

These modifying clauses can also be extraposed, in which case the final marking on the RCs is only interpretable as switch-reference. Compare (51) above with (56) and (52) with (57). In (51), the in-situ RC with a first-person subject can be marked for either case or switch-reference; in (56), the extraposed modifying clause with a first-person subject can only be marked for switch-reference. In (52) and (57), the subordinate clause (in situ or extraposed) with the third-person subject can only be marked for switch-reference, not case.

(56) Ofi’-at mali-t kaniya-tok ipita-li-tok/*-tokat.
    dog-NOM run-PRT go.away-PT feed-1SI-PRT.CMP.DS/*-PT.CMP.NOM
    ‘The dog I fed ran away.’

(57) Ofi’-at mali-t kaniya-tok Jan-at ipita-tok/*-tokat.
    dog-NOM run-PRT go.away-PT Jan-NOM feed-PRT.CMP.DS/*-PT.COMP.NOM
    ‘The dog Jan fed ran away.’

Table 5 summarizes the data for Chickasaw -ka RCs. Here, again, T indicates same-subject/nominative -kat, N indicates different-subject/accusative -ka, and -ak indicates the oblique -kak.

4.4 Summary

In Chickasaw, as in Choctaw, multiple analyses are required to account for the distribution of final markers on RCs. On in-situ demonstrative RCs both case-marking and switch-reference analyses are available to some extent. In -kaash and -ka RCs, case marking is not always possible, but switch-reference marking always is. On extraposed clauses in which switch-reference would not be redundant, only switch-reference marking is possible.

<table>
<thead>
<tr>
<th>Case role of RC in MC</th>
<th>Form predicted by case</th>
<th>Switch-reference</th>
<th>Form predicted by switch-reference</th>
<th>Non-third person subjects in either RC or MC</th>
<th>Actual form on in-situ RCs</th>
<th>Actual form on extraposed RCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>T</td>
<td>Same subject</td>
<td>T</td>
<td>Yes</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>Yes</td>
<td>T or N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-subject</td>
<td>N or ak</td>
<td>Same subject</td>
<td>T</td>
<td>Yes</td>
<td>T or ak</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different subject</td>
<td>N</td>
<td>Yes</td>
<td>N or ak</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Suffixes on -ka relative clauses in Chickasaw.

24 Complement clauses potentially share the property of functioning as both DPs and as CPs. The distribution of markers ending in same-subject/nominative t vs. different-subject/accusative nasalization on complement clauses is discussed in the appendix.
5 Conclusion

In Western Muskogean, the case markers and the switch-reference markers have historically converged in marking RCs. Table 6 below provides a summary of the distribution of markers on all three types of RCs, both in-situ and extraposed, in both languages.

In Choctaw this convergence is almost complete—in most cases, either marking is possible. Switch-reference rather than case marking is required only when the subjects of both clauses are third person (and therefore not uniquely specified by the verbal agreement marker).

In Chickasaw, the situation is somewhat different. First, when the RC is extraposed with its head in the matrix clause, the modifying clause must be marked for switch-reference, rather than for case. This seems like a natural secondary development once a structure has been perceived as a potential carrier of switch-reference and has been extracted from the position in which it functions as a DP (and in which the nominal head is serving as an argument in the matrix clause): thus, the extraposed clause is treated like typical subordinate clauses (and marked with switch-reference) while the head is case-marked for its role in the matrix clause.

Moreover, in some Chickasaw -kaash and -ka RCs, case marking is barred and only switch-reference marking is possible. Case marking is limited to those cases in which the head is truly inside the RC (i.e., where the RC is not extraposed) and the agreement on the verb makes the switch-reference redundant. These look plausibly like instances in which originally switch-reference marked forms have been reanalyzed as taking case marking.

In Western Muskogean, therefore, it appears that switch-reference marked IHRCs and case-marked IHRCs are converging, but that merger is not yet complete. This convergence is driven by the shared clausal and nominal functions of IHRCs and enabled by the homophony of the switch-reference markers and the case markers.

<table>
<thead>
<tr>
<th>Case role of RC in MC</th>
<th>Subject</th>
<th>Non-Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form predicted by case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch-reference</td>
<td>Same subject</td>
<td>Different subject</td>
</tr>
<tr>
<td>Form predicted by switch-reference</td>
<td>T</td>
<td>N</td>
</tr>
<tr>
<td>Non-third person subjects in either RC or MC</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Actual form on in-situ demonstrative RCs</td>
<td>Ct</td>
<td>T</td>
</tr>
<tr>
<td>Cs</td>
<td>T</td>
<td>T or N</td>
</tr>
<tr>
<td>Actual form on extraposed demonstrative RCs</td>
<td>Ct</td>
<td>T</td>
</tr>
<tr>
<td>Cs</td>
<td>T</td>
<td>T or N</td>
</tr>
<tr>
<td>Actual form on in-situ -haash RCs</td>
<td>Ct</td>
<td>T</td>
</tr>
<tr>
<td>Cs</td>
<td>T</td>
<td>T or N</td>
</tr>
<tr>
<td>Actual form on extraposed -haash RCs</td>
<td>Ct</td>
<td>T</td>
</tr>
<tr>
<td>Cs</td>
<td>T</td>
<td>N</td>
</tr>
<tr>
<td>Actual form on in-situ -ha RCs</td>
<td>Ct</td>
<td>T</td>
</tr>
<tr>
<td>Cs</td>
<td>T</td>
<td>T or N</td>
</tr>
<tr>
<td>Actual form on extraposed -ha RCs</td>
<td>Ct</td>
<td>T</td>
</tr>
<tr>
<td>Cs</td>
<td>T</td>
<td>N</td>
</tr>
</tbody>
</table>

Table 6: Summary of suffixes on relative clauses in Western Muskogean.
Abbreviations
ACC = accusative, CMP = complement, DAT = dative, DS = different subject, LOC = locative, NOM = nominative, OBL = oblique, PRT = participle, PT = past/perfective, Q = question, SS = same subject, TNS = tense (Ct-h, per Broadwell 2006).

We use a period to separate elements of a complex gloss and commas to set off infixed material and | between the different glosses for ambiguous forms.

Muskogean languages have a complex active system of pronominal agreement, with two main agreement classes, which we identify as “I” and “II”; a third agreement class used with non-third person datives is glossed “III”. Person and number are indicated with 1, 2, S, P (third person is unmarked). For more discussion, see the sources cited in footnote 7.

Choctaw and Chickasaw verbs may occur in several “grades” (ablaut forms, including an accented vowel), which are not specially indicated in our glosses.

Additional File
The additional file for this article can be found as follows:
- Appendix. Marking on complement clauses. DOI: https://doi.org/10.5334/gjgl.184.s1

Acknowledgements
This paper is a revision and extension of Gordon (1987). We are grateful to Catherine Willmond (for Chickasaw) and the late Josephine Wade (for Choctaw), as well as to the many other speakers who have taught us about their wonderful languages. Thanks also to the late William H. Jacobsen, Jr., and Guy Carden for comments on earlier versions of this paper (and in Guy’s case, this one), and to an anonymous reviewer, who made many useful suggestions.

Competing Interests
The authors have no competing interests to declare.

References


