1 Overview

Crow (Siouan; Montana, USA), like many other Siouan languages, is an active-stative (or Split-S) language. In other words, verbs in Crow take different person prefixes depending on whether they are active or stative – active verbs take A-set markers (bolded), as in (1) and (3), whereas stative verbs take B-set markers (underlined), as in (2) and (4). The full paradigm for A- and B-set markers are given in Table 1.2

<table>
<thead>
<tr>
<th></th>
<th>A-SET</th>
<th>B-SET</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>baa-</td>
<td>bii-</td>
</tr>
<tr>
<td>2SG</td>
<td>daa-</td>
<td>dii-</td>
</tr>
<tr>
<td>3SG</td>
<td>Ø-</td>
<td>Ø-</td>
</tr>
<tr>
<td>1PL</td>
<td>baa-+pl</td>
<td>balee-</td>
</tr>
<tr>
<td>2PL</td>
<td>daa-+pl</td>
<td>dii-+pl</td>
</tr>
<tr>
<td>3PL</td>
<td>Ø-+pl</td>
<td>Ø-+pl</td>
</tr>
</tbody>
</table>

Table 1: A- and B-set agreement morphemes in Crow.

(1) **baa-xalússhi-k** (ACTIVE INTRANSITIVE)  
'I am running'  
1A-run-decl

(2) **bii-ítchi-k** (STATIVE INTRANSITIVE)  
'I’m good'  
1B-good-decl

(3) **dii-waa-láxpii-k** (ACTIVE TRANSITIVE)  
'I hugged you'  
2B-1A-hug-decl

(4) **bii-lii-chichée-k** (STATIVE TRANSITIVE)  
'you resemble me'  
1B-2B-resemble-decl

Many proposals have relied on Case-based approaches to capture active-stative agreement systems, where A-set marking is associated with a nominative Case-marked subject, while B-set is associated with an accusative Case-marked subject (e.g. Wallace 1993 for Crow).

More recently, Woolford (2010) argues that in active-stative languages, such as Choctaw and Lakota, active agreement (A-set) is the result of true agreement between T₀ and an external argument, while stative agreement (B-set) consists of pronominal clitics. Thus, active-stative agreement systems are split agreement systems.

This study focuses on extending Woolford’s analysis to Crow by also analyzing the distribution of agreement markers in causatives constructions, and determining whether B-set markers are object agreement or pronominal clitics by applying several morphosyntactic diagnostics (Nevins 2011, Kramer 2014).

This study focuses on providing an analysis of the morphosyntax of Crow person agreement involving both φ-agreement and clitic doubling – a split agreement system.

Proposal: This analysis suggests that the A-set markers are agreement affixes that arise from true agreement via a probe on T₀, while B-set markers are pronominal clitics (D₀s) that undergoes long-distance head movement to v₀.

---

1 Many thanks to my friends in Crow Country: Felice Big Day, Cyle Old Elk, Jack Real Bird, Riley Singer, Charles Yarlott Jr., and many others for graciously sharing their language and culture with me. I am also grateful to Amy Rose Deal, Tyler Lemon, Andrew Garrett, Randolph Graczyk, Peter Jenks, Lev Michael, Line Mikkelsen, Zachary O’Hagan, Amalia Skilton, Martha Schwarz, and participants at UC Berkeley’s Fieldwork Forum and the 39th Siouan and Caddoan Languages Conference for helpful comments on this project. Data that is not cited come from my own fieldwork during summer 2018 and 2019 on the Crow Indian Reservation in Montana which was graciously funded by the Robert L. Oswalt Endangered Language Grant. As always, all errors are my own.

2 Obstruents often undergo intervocalic laxing. For example, as in (3) and (4), b, d > w, l, l V__V.
2 A-set markers as agreement affixes

2.1 Contextual allomorphy

- Zwicky and Pullum (1983) argues that contextual allomorphy (or “morphophonological idiosyncrasies) are more characteristic of affixes than clitics.3

- Table 2 provides an overview of the A-set allomorphy as prefixes. Other kinds of A-set allomorphy as suffixes, infixes, and circumfixes are displayed in (5). Thus, A-set morphemes resemble affixes.

<table>
<thead>
<tr>
<th>PARADIGM</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) dí(a) ‘by hand’</td>
<td>bu</td>
<td>di</td>
</tr>
<tr>
<td>(b) dí(a) ‘by mouth’</td>
<td>ba</td>
<td>da</td>
</tr>
<tr>
<td>(c) a‘la ‘by foot’</td>
<td>b</td>
<td>d</td>
</tr>
<tr>
<td>(d) pí(a) ‘by pushing’</td>
<td>ba</td>
<td>dá</td>
</tr>
<tr>
<td>(e) dák/dákC ‘by force’</td>
<td>b</td>
<td>d(á)</td>
</tr>
<tr>
<td>(f) a ‘by cutting’</td>
<td>b(a)</td>
<td>d(á)</td>
</tr>
<tr>
<td>(g) V (accented) ‘locative’</td>
<td>aw</td>
<td>al</td>
</tr>
<tr>
<td>(h) V (unaccented)</td>
<td>b</td>
<td>d</td>
</tr>
<tr>
<td>(i) ch,k</td>
<td>báh</td>
<td>dáh</td>
</tr>
<tr>
<td>(j) bVV, dVV, s, p, k, x, ch</td>
<td>báa</td>
<td>da</td>
</tr>
<tr>
<td>(k) bV(V), dV</td>
<td>báa</td>
<td>dáa</td>
</tr>
</tbody>
</table>

Table 2: Overview of active verb (A-set) inflection (Graczyk 2007:127, Table 6.7).

(5) a. *dia-waa ‘I make’
   b. *é-wa-hche ‘I know’
   c. *bas-itchi-waa ‘I like’
   d. *ish-b-it ‘I drink’

2.2 Referencing highest argument

- The A-set morpheme exhibits constraints on locality in that it always cross-references the highest argument within the clause. For example, with an active intransitive (6) and active transitive verb (7), the A-set morpheme refers the first person subject.

(6) baa-lísshí-k
1A-dance-decl.
‘I am dancing’ (Speaker: Riley Singer)

(7) dií-waa-líchí-k
2B-1A-hit-decl.
‘I hit you’ (Speaker: Charles Yarlott Jr.)

- When the indirect causative morpheme *hche combines with the main verb to introduce a causer, which is now the highest argument, the A-set cross-references this newly introduced argument; all other arguments (even logical subjects of active verbs) are referenced using the B-set morpheme.

- The data in (8)-(11) show that only the causer is referenced using the A-set morpheme, while all other arguments are referenced with the B-set morpheme.

3Abbreviations used in the glosses are as follow: A: A-set, AUG: augmentative, B: B-set, CONT: continutive, DECL: declarative, DIR.CAUS: direct causative, DS: different-subject, EXCL: exclamative, IMPER: imperative, INDIR.CAUSE: indirect causative, INCHO: inchoative, INDEF: indefinite, INSTR: instrumental, INTR: interrogative, MVC: multi-verb construction, NEG: negation, NOM: nominalizer, OBJ: object, PL: plural, SS: same-subject, 1: first person, 2: second person, 3: third person. Note that I do not gloss third person null morphemes, nor do I distinguish between affixes and clitics in the breakdown of the morphemes. The orthography employed here follows the conventions devised by Randolph Graczyk. See Graczyk 2007 for a detailed discussion of the orthography. While I only listed a single name next to the data, that was collected during my fieldwork in 2018 and 2019, I have double-checked most of the data in this handout with at least one other speaker.
(8) Active intransitive + causative:
\[
\text{dii-lisší-wa-hche-k} \\
2B-dance-1A-INDIR.CAUS-DECL
\]
‘I made you dance’
(Speaker: Charles Yarlott Jr.)

(9) Active transitive + causative:
\[
dihchi-lii-dít-ba-hche-k \\
2REFL-2B-hit-1A-INDIR.CAUS-DECL
\]
‘I made you hit yourself’
(Speaker: Jack Real Bird)

(10) Stative intransitive + causative:
\[
dii-háchka-wa-hche-k \\
2B-fall-1A-INDIR.CAUS-DECL
\]
‘I made you (be) tall’
(Speaker: Charles Yarlott Jr.)

(11) Stative transitive + causative:
\[
dii-wii-chichée-wa-hche-k \\
2B-1B-resemble-1A-INDIR.CAUS-DECL
\]
‘I made you look like me’
(Speaker: Jack Real Bird)

3 B-set markers: object agreement or pronominal clitics?

- Kramer (2014) provides a handful of diagnostics to distinguish between cases of clitic doubling and object agreement. For instance, object agreement displays locality constraints and are obligatory, while pronominal clitics are optional and behave like other pronominals. In what follows, I employ several of these diagnostics.\(^4\)

3.1 Are B-set morphemes optional?

- Clitics are often optional, while agreement, if it can take place, is obligatory. In Crow, B-set markers are required, as in (12), and thus pattern like object agreement.

(12) a. *(bii-)ítchi-k \\
1B-good-DECL
‘I’m good’

b. *(dii-)baa-lichí-k \\
1B-1A-hit-DECL
‘I hit you’
(Speaker: Felice Big Day)

3.2 Multiple B-set morphemes in a single clause

- Under the assumption that there is only a single \(v^0\) per clause (which does not exhibit Multiple Agree, cf. Nevins 2011), if there are multiple B-set morphemes on the verb, then the B-set is likely a clitic. If B-set agreement occurs on \(v^0\) (i.e. true object agreement), then we should only expect a single B-set morpheme.

- With stative transitives, you can in fact get multiple B-set morphemes, each cross-referencing a different argument, as in (13). You can also obtain multiple B-set morphemes when transitive verbs are causativized, as in (14), where the agent and the theme are both referenced via B-set morphemes.

(13) dii-wii-chichée-k \\
2B-1B-resemble-DECL
‘I look like you’
(Speaker: Charles Yarlott Jr.)

(14) dii-wii-lichí-hche-k \\
2B-1B-hit-INDIR.CAUS-DECL
‘he/she made me hit you’
(Speaker: Jack Real Bird)

\(^4\)One test we cannot apply is the diagnostic from Preminger (2009) who argues that failed agreement produces an overt default agreement form, while failed clitic doubling simply causes the clitic to disappear. Third person marking is null, so if agreement fails it will still be null even if the probe surfaces with default (third person) phi-features. If clitic doubling fails, the result will also be null. Likewise, tests involving semantic effects between the clitic and the associate DP cannot be tested with non-overt third person marking.
3.3 Attachment of B-set morphemes to the verbal stem

• If B-set is true object agreement with a probe on v₀, we would expect B-set morphemes to attach closer to the verbal stem; v₀ is closer to the verb in the clausal spine than T₀ and thus is able to probe first.

• In Crow, B-set morphemes always attach outside of A-set markers, as in (15). In addition, B-set markers need not directly attach to verbs, as shown by the light verb construction in Crow-English code-switching in (16).

(15) dii-waa-lichí-k
    2B-1A-hit-DECL
    ‘I hit you’ (Speaker: Cyle Old Elk)

(16) dii-carry kóot-baa-k
    2B-carry do-1.DIR.CAUS-DECL
    ‘I carried you’ (Speaker: Felice Big Day)

3.4 Referencing internal arguments

• True object agreement allows only the highest internal argument to be cross-referenced (due to locality constraints), whereas pronominal clitics, in principle, permit either the theme or the goal to be referenced.

• In Crow, the B-set morpheme may refer to either the recipient or the theme with the ditransitive verb ku- ‘give’, as in (17).

(17) dii-waa-kú-k
    2B-1A-give-DECL
    ‘I gave you to him/her’ / ‘I gave it to you’ (Speaker: Felice Big Day)

• Moreover, according to Graczyk (2007) and Wallace (1993), when there are multiple B-set markers in a single clause, it is ambiguous which argument the B-set morphemes each refer to. The ambiguity is displayed in the causative constructions in (18) and clauses with stative transitives in (19).

(18) a. John bii-lii-lichí-hche-k
    John 1B-2B-hit-INDIR.CAUS-DECL
    ‘John made me hit you’ / ‘John made you hit me’
    (Graczyk 2007:199, Ex.83a)

b. John dii-wii-lichí-hche-k
    John 2B-1B-hit-INDIR.CAUS-DECL
    ‘John made me hit you’ / ‘John made you hit me’
    (Graczyk 2007:199, Ex.83b)

(19) a. bii-lii-chichée-k
    1B-2B-resemble-DECL
    ‘you resemble me’ / ‘I resemble you’
    (Graczyk 2007:199, Ex.84a)

b. dii-wii-chichée-k
    2B-1B-resemble-DECL
    ‘you resemble me’ / ‘I resemble you’
    (Graczyk 2007:199, Ex.84b)

3.5 Invariance of B-set markers

• According to Nevins (2011), if T₀ or v₀ are loci of agreement, then the agreement marker should vary according to tense, voice, aspect, mood, and other features of T₀ or v₀.

• However, B-set morphemes in Crow are invariant – they do not display any kind of allomorphy.
3.6 Similarities to pronouns

- If B-set morphemes are pronominal D\(^0\)s, then we would expect that the clitic be morphologically similar to other kinds of pronominals.

- The basic pronoun stems for first and second persons, given in Table 3, are identical to the forms of first and second B-set morphemes (Graczyk 2007:60); Table 4 displays a set of ‘emphatic’ pronouns with these stems.

<table>
<thead>
<tr>
<th>1SG</th>
<th>1PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>bii-</td>
<td>billu-</td>
</tr>
<tr>
<td>dii-</td>
<td>diilu-</td>
</tr>
<tr>
<td>ii-</td>
<td>iilu-</td>
</tr>
</tbody>
</table>

Table 3: Basic pronoun stems (Graczyk 2007:60, Table 3.11, adapted).

<table>
<thead>
<tr>
<th>1SG</th>
<th>1PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>biileen</td>
<td>billuun</td>
</tr>
<tr>
<td>diileen</td>
<td>diiluun</td>
</tr>
<tr>
<td>iileen</td>
<td>iiluun</td>
</tr>
</tbody>
</table>

Table 4: ‘Emphatic’ pronoun (Graczyk 2007:62, Table 3.13).

- There is also a set of inalienable possession markers, given in Table 5, that parallels with B-set morphemes in form, and these possession markers are often used for nouns referring to internal body parts, such as dáaxo ‘lung’, chiwúsa ‘brain’, and ñaxa ‘stomach’.

<table>
<thead>
<tr>
<th>1SG</th>
<th>1PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>bii-láaxo ‘my lung’</td>
<td>balee-láaxo ‘our lung(s)’</td>
</tr>
<tr>
<td>dii-láaxo ‘your lung’</td>
<td>dii-láaxo-u ‘your lung(s)’</td>
</tr>
<tr>
<td>Ø-dáaxo ‘her lung’</td>
<td>Ø–dáaxo-u ‘their lung(s)’</td>
</tr>
</tbody>
</table>

Table 5: Inalienable possession with B-set prefixes (Graczyk 2007:57, Table 3.7).

3.7 Phonological status of B-set markers

- Unlike agreement affixes, syntactic pronominal clitics tend to be morphophonological clitics.

- Graczyk (2007:278) analyzes B-set markers as morphophonological clitics and suggests “a looser phonological juncture between the B-set pronominals and the stem.”

- In intervocalic position, obstruents are often lax. For example, when the A-set combines with the verb dáxpíi- ‘hug’ (20a), intervocalic laxing (double underlined) occurs (20b). However, for some speakers, when the B-set marker attaches directly next to the stem, laxing sometimes fails to occur, as in (21).

(20) a. dáxpíi- ‘hug’
    b. Logan **baa-**láxpíi-k
       Logan 1A-hug-DECL
       ‘I hugged Logan’  (Speaker: Cyle Old Elk)

(21) Logan **bii-**lissá-a-laachi-hche-k  (cf. Logan bii-lissá-a-laachi-hche-k)
    Logan 2B-dance-MVC-CONT-CAUS-DECL
    ‘Logan made me keep on dancing’  (Speaker: Felice Big Day)
• This effect involving presence and absence of laxing can also occur when B-set morphemes combine with A-set morphemes. In (22a–b), laxing the obstruent in the onset position of the first person A-set marker (i.e. \( b \rightarrow w \)) is sometimes optional – both occurrences are found in my corpus. However, laxing of the stem-initial obstruent is required when directly preceded by an A-set morpheme, as in (22c–d).\(^5\)

5Some speakers do not consider (22b) to be licit. I attribute this to interspeaker variation.

(22)  
\[ \begin{align*}
\text{a. } & \text{dii-waa-lichí-k} & \text{c. } & \text{%dii-waa-lichí-k} \\
& \text{2B-1A-hit-DECL} & \text{2B-1A-hit-DECL} & \\
& \text{‘I hit you’} & \text{‘I hit you’} & \\
\text{b. } & \text{dii-baa-lichí-k} & \text{d. } & \text{%dii-baa-lichí-k} \\
& \text{2B-1A-hit-DECL} & \text{2B-1A-hit-DECL} & \\
& \text{‘I hit you} & \text{‘I hit you’} & \text{(Speaker: Felice Big Day)}
\end{align*} \]

• By employing Zwicky and Pullum’s (1983) tests, we find additional support for B-set morphemes to pattern like morphophonological clitics:

1. Criterion B: There are no arbitrary gaps. All objects of transitive verbs are referenced via B-set morphemes; all stative intransitives are also referenced via a B-set marker.
2. Criterion C: B-set morphemes are invariant (i.e. no or very little allomorphy; see §3.5).
3. Criterion F: B-set morphemes are always outside of subject A-set agreement, contrary to Mirror Principle expectations (Baker 1985), and B-set morphemes may attach to elements already containing a clitic, as in (23–24) with the proclitic kaka- ‘again’.

(23)  
\[ \text{kaka-dii-waa-lichí-k} \]
\[ \text{again-2B-1A-hit-DECL} \]
\[ \text{‘I hit you again’} \hspace{1cm} \text{(Speaker: Felice Big Day)} \]

(24)  
\[ \text{dii-kak-baa-lichí-k} \]
\[ \text{2B-again-1A-hit-DECL} \]
\[ \text{‘I hit you again’} \hspace{1cm} \text{(Speaker: Felice Big Day)} \]

3.8 Summary of clitichood tests

• The results of the clitichood tests strongly suggest that B-set morphemes are pronominal clitics rather than object agreement. The results are summarized in Table 6.

<table>
<thead>
<tr>
<th>Clitichood diagnostic</th>
<th>Object agreement</th>
<th>Pronominal clitics</th>
<th>Crow B-set morphemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Multiple occurrences?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>‘Loose’ attachment to verbal stem?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Not restricted to highest internal argument?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Invariant?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Similarities to pronouns?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Morphophonological clitics?</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 6: A summary of the results of the clitichood tests. Note: The diagnostic involving multiple occurrences of B-set morphemes assumes that probes do not exhibit Multiple Agree.
4 Analysis

4.1 Diagnosing unaccusativity

- How are active and stative verbs syntactically represented in Crow? In what follows, I briefly argue that active intransitives are unergative verbs with an external argument while stative intransitives are unaccusative verbs with an internal argument (Perlmutter 1978).

- Noun incorporation (displayed in brackets), where a noun combines with and becomes incorporated into the verb, is attested only for nouns that are objects of active transitive verbs, as in (25), and subjects of stative intransitive verbs, as in (26). In other words, objects of active transitive verbs and subjects of stative intransitive verbs pattern in syntactically similar ways.\(^6\)

\[
\begin{array}{ll}
\text{(25)} & \text{a. Hinné baapé [Apsáalook-ilaa]-u ii baa-waachimmí-k} \\
& \text{this day Crow-talk-pl instr 1a-study-decl} \\
& \text{‘Today I learned to speak Crow’} \\
& \text{(Speaker: Felice Big Day)} \\
& \text{b. Logan [bishka-lúupia]-k} \\
& \text{Logan dog-dislike-decl} \\
& \text{‘Logan doesn’t like dogs’} \\
& \text{(Speaker: Felice Big Day; cf. Graczyk 2007:279, Ex.6)} \\
\end{array}
\]

\[
\begin{array}{ll}
\text{(26)} & \text{a. [ilúk-hilahp]-ak} \\
& \text{meat-scarce-ss} \\
& \text{‘meat is scarce’} \\
& \text{(Graczyk 2007:282, Ex.21)} \\
& \text{b. [balaás-itchi]-k} \\
& \text{my.heart-good-decl} \\
& \text{‘I feel good (lit. my heart is good)’} \\
& \text{(Speaker: Jack Real Bird)} \\
\end{array}
\]

- In contrast, actives verbs do not appear to allow incorporation of subjects and attempts to elicit noun incorporation of subjects of active verbs have not been unsuccessful, as in (27).

\[
\begin{array}{ll}
\text{(27)} & \text{*[iichíil-xaluushi]-k} \\
& \text{horse-run-decl} \\
& \text{Intended: horse runs (cf. [iichíil-isaa]-k ‘the horse is big’)} \\
& \text{(Speaker: Felice Big Day)} \\
\end{array}
\]

- Based on this and other tests, active intransitive verbs behave syntactically and semantically like unergative verbs, as in (28), while stative intransitive verbs behave like unaccusatives, as in (29). In other words, unaccusativity in Crow is semantically determined and syntactically encoded (Levin and Rappaport 1995).

\[
\begin{array}{ll}
\text{(28)} \\
\text{(29)}
\end{array}
\]

\___\(^6\)Other unaccusativity diagnostics for Crow include causative alternation and imperative formation (Ko 2019). Direct (or lexical) causative morphemes, which introduces an agent, may only attach to stative intransitive verbs since they lack external arguments. Unlike active verbs, imperatives of stative verbs require a so-called ‘inchoative’ morpheme dee-. I suggest that this inchoative morpheme transforms unaccusatives into unergatives, imbuing the subject with agentive properties. Further support come from the distribution of multiple exponence of person marking in Crow.
4.2 Evidence for clitic doubling

- Only local person B-set morphemes are overt and they do not co-occur with an independent DP associate, as in (30). Moreover, third person B-set markers are phonologically null with or without an overt DP, as in (31).

- Graczyk (2007:190-197) provides a number of arguments claiming that A- and B-set morphemes are in fact syntactic arguments (including third person null morphemes when lexical DPs are absent).

(30) **bii-ítchi-k**  
1B-good-DECL  
‘I am good’ (Speaker: Birdie Real Bird)

(31) **Logan ítchi-k**  
Logan good-DECL  
‘Logan is good’ (Speaker: Jack Real Bird)

- Drawing support from person agreement that appears on quantifiers with the argument they are associated with, I argue that B-set morphemes are a result of pronominal clitic doubling.

- Person agreement on quantifiers parallels the B-set verbal agreement morphemes (i.e. **bii-**, **dii-**). The only exception is the third person clitic **ii-** (cf. Table 3). Presence of **ii-** is optional but its use can only refer to animate entities:

(32)  
a. **ixašše** (*ii)xáxua ‘all the pemmican’  
   (INANIMATE; ungrammatical with **ii-**)

b. **xoóxaashe** (*ii)xáxua ‘all the corn’

c. **computer kootá** (*ii)xáxua ‘all the computers’

(33)  
a. **iichíile** (ii)áaxua ‘all the horses’  
   (ANIMATE; use of **ii-** permitted)

b. **shikáake** (ii)xáxua ‘all the boys’

c. **biláxpaake** (ii)xáxua ‘all the people’  
   (Speaker: Cyle Old Elk)

- There is a set of quantifiers that behave like stative verbs and these quantifiers may also take the **ii-** morpheme, which can co-occur with a DP associate, as in (34) and (35):

(34)  
a. **akbaawaachimmíhche** (ii)-chiaxxú-u-k  
   teacher 3B-five-PL-DECL

   ‘there are five teachers’  
   (Speaker: Cyle Old Elk)

b. **hee-lee-m** **iiisaxpiatahchee** ii-sáhpú-o-k  
   notice-EXCL-DS mountain.sheep 3B-seven-PL-DECL

   ‘he was surprised to see that there were seven mountain sheep’  
   (Graczyk 2007:219, Ex.16, adapted)

(35)  
a. **biské** (ii)-sáaw-uu-k  
   dog 3B-more.than.one-PL-DECL

   ‘there are more than one dogs’  
   (Speaker: Cyle Old Elk)

b. **iichíile kal-ii-sáaw-uu-?**  
   horse now-3B-how.many-PL-INTERR

   ‘now how many horses are there?’  
   (Graczyk 2007:220, Ex.21, adapted)

- Moreover, **ii-** may occur even when the lexical DP is not overtly expressed just like local person B-set morphemes **bii-** and **dii-**:

(36)  
a. **bii-lúup-kaas-uu-k**  
   1B-two-aug-PL-DECL

   ‘there are only two of us’
b. dii-lúup-kaas-uu-k
   2B-TWO-AUG-PL-DECL
   'there are only two of you'

c. ii-lúup-kaas-uu-k
   3B-TWO-AUG-PL-DECL
   'there are only two of them' (Speaker: Cyle Old Elk)

- The co-occurrence of an overt DP with ii-, which is restricted to the class of quantifiers, and the fact that ii- appears in the same paradigm as local person B-set morphemes provide evidence for B-set to be classified as part of clitic doubling phenomena observed in many other languages, such as Spanish, Greek, and Bulgarian.7

- In light of these facts, I adopt the following two assumptions:
  ◦ Overt B-set markers (e.g. bii-, dii-, ii-, etc.) are cases of clitic doubling.
  ◦ Lack of overt B-set marking for third person is due to an absence of clitic doubling.

4.3 Deriving φ-agreement and clitic doubling

- True verbal agreement involves valuation of a probing head by a goal bearing φ-features (e.g. Chomsky 2000, and subsequent work). On the other hand, clitic doubling involves co-occurrence of a pronominal clitic (e.g. D0) with a DP associate, and movement of the clitic to some host (Uriagereka 1995, Nevins 2011, Arregi and Nevins 2012, among others).

- Here, I assume a big DP treatment of object clitic doubling (Uriagereka 1995, Franks and Rudin 2005, Nevins 2011, Arregi and Nevins 2012, among others), where pronominal clitics are D0s that are generated as a constituent inside the DP associate they double before moving to a verbal host.

- The structural configurations for φ-agreement and clitic doubling are represented below (adapted from Yuan 2019), where the dashed line indicates φ-agreement and the solid line indicates clitic movement:

(37) a. Agreement: 

```
              HP
             /   \
            /     \ 
           DPφ   H0[φ]
```

b. Clitic doubling: 

```
              HP
             /   \
            /     \ 
           D0φ   DP
```

- In Crow, the locus of subject φ-agreement is T0 which is necessarily high in the clausal spine and which probes the highest accessible DP argument with φ-features.
  ◦ The structure for (38) is given in (40) where T0 probes the external DP argument in Spec,vP.

- Crow vPs are phases (Chomsky 2005), including vP in unaccusative verbs (see Legate 2003 and Deal 2009), disallowing T0 to establish an Agree relation with elements below Spec,vP.
  ◦ The structure for (39) is given in (41). T0 fails to probe the highest DP argument as it is inaccessible due to vP’s status as a phase.

---

7There is additional semantic restrictions that provide further support for a clitic doubling analysis. Specifically, the morpheme ii- must refer to a specific set of animate entities that is being quantified over (see Kramer 2014:601).
• Once $T^0$ has completed probing, regardless of whether or not probing was successful, all other DPs clitic-double and these clitics move to head-adjoin to $v^0$.\(^8,9\)

  ◦ In (41), the pronominal clitic $D^0$ undergoes long-distance head movement to $v^0$.

(38) \textbf{baa-xálusshi-k} \hfill (39) \textbf{bii-ítchi-k}
\hfill \begin{tabular}{l}
1A-run-DECL \hfill 1B-good-DECL \\
\end{tabular}
\hfill \begin{tabular}{l}
‘I am running’ \hfill ‘I’m good’
\end{tabular}

(40) \hfill (41)
\begin{tabular}{c}
\begin{array}{c}
TP \\
$\textbf{vP}$
\end{array}
\end{tabular}
\begin{tabular}{c}
\begin{array}{c}
TP \\
$\textbf{vP}$
\end{array}
\end{tabular}
\begin{tabular}{c}
\begin{array}{c}
$\phi$ \\
$T^0$
\end{array}
\end{tabular}
\begin{tabular}{c}
\begin{array}{c}
$\phi$ \\
$v^0$
\end{array}
\end{tabular}
\hspace{0.5cm}
\begin{tabular}{c}
\begin{array}{c}
$\phi$ \\
$v^0$
\end{array}
\end{tabular}
\hspace{0.5cm}
\begin{tabular}{c}
\begin{array}{c}
$\phi$ \\
$v^0$
\end{array}
\end{tabular}

• The lack of optionality across B-set morphemes can be captured by the fact that $v^0$ establishes Agree relations, a pre-condition for clitic movement (see Chomsky 2000, among others), with all local person DPs within its c-command domain but only after $T^0$ has completed probing.

• In causatives of active transitive verbs, the external argument is referenced by the B-set marker, as in (42), which indicates that external arguments may also clitic-double. However, their position in Spec,$v$P is outside of the c-command domain of $v^0$.

(42) John bii-lii-lichí-hche-k
\begin{tabular}{l}
John 1B-2B-hit-CAUS-DECL \\
\end{tabular}
\begin{tabular}{l}
‘John made me hit you’ / ‘John made you hit me’
\end{tabular}
\hfill (Graczyk 2007:199,Ex.83a)

• Following Baker and Kramer (2018), I argue that there is an additional syntactic operation involved, namely \textit{reduce}, which transforms the DP into a pronominal $D^0$. Postsyntactically, the $D^0$ undergoes m-\textit{merger}, and the Spec-Head configuration is rebracketed as a complex $v^0$ head (Matushansky 2006).\(^10,11\)

• The steps in the derivation of the sentence given in (42), represented schematically in (43), are as follow:

  1. $T^0$ probes and interacts with the highest DP argument – the causer, which is the argument introduced by $v_{\text{CAUS}}^0$.
  2. DP arguments that are lower than (or within the c-command domain of) $v^0$ clitic-double and their clitic $D^0$s head-adjoin to $v^0$.
  3. The remaining external DP argument in Spec,$v$P is converted into a pronominal $D^0$ via Reduce.
  4. In the morphological component, m-mergers applies and the $D^0$ in Spec,$v$P is rebracketed into a complex $v^0$ head.

\(^8\)Readers are invited to derive constructions with transitive verbs which trivially follow the same steps described above for unaccusatives and unergatives.

\(^9\)I have omitted the CP layer in these structures for ease of exposition.

\(^10\)Crucially, external arguments that are third person overt DPs in causatives of active transitive verbs do not undergo Reduce and m-merger nor do external argument DPs that have interacted with $T^0$. The issue of when Reduce and m-merger occur is an area for future research.

\(^11\)See also Kramer 2014, Harizanov 2014, and Yuan 2019 for treatments of clitic doubling that involve m-merger.
5 Conclusion

- The clitichood tests provided by Nevins (2011) and Kramer (2014) strongly suggest that B-set morphemes in Crow are syntactic pronominal clitics, and evidence from agreement on quantifier points to these pronominal clitics as instances of clitic doubling.

- I provide an analysis of A-set morphemes as arising from true $\phi$-agreement involving $T^0$, whereas B-set morphemes are a result of clitic doubling in which pronominal $D^0$ head-adjoint to $v^0$.

- Overall, this study extends Woolford’s 2010 analysis to Crow, shedding additional light on the theory of agreement of active-stative languages as a split agreement system.

References


