Feeding agreement: 
Anti-locality in Crow applicatives of unaccusatives 
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1 Introduction

- Anti-locality effects, which ban “too close” movement, have been reported for A-movement, particularly subject-extraction asymmetries across a variety of languages (Erlewine 2014, 2016, 2020, Bošković 2016, Brillman and Hirsch 2016, Douglas 2017, Amaechi and Georgi 2019, Issah and Smith 2020).
- There is some indication that anti-locality effects can also be observed for A-movement (Deal 2019).
- In Crow, so-called A-set markers (bolded) reference subject-like arguments (e.g. agents) and B-set (underlined) mark object-like arguments (e.g. themes).

(1) Unaccusative

bii-wíisshi-k
B-tell.lie-DECL
'I lied'

(2) Applicative of unaccusative

dii-wíissa-a-wa-ku-k
2B-tell.lie-JUNCT-1A-APPL-DECL
'I lied for you'

Puzzle: In applicatives of unaccusatives, which argument is the subject?

Proposal: In Crow applicatives of unaccusatives, the underlying theme moves over the applied object into Spec, vP thereby feeding A-set agreement. Movement occurs in (4) but not (3) due to an ANTI-LOCALITY constraint.

2 Overview of Crow syntax

2.1 Language background

- The Crow (Apsáalooke) language is part of the Siouan language family (e.g. Lakota) and it is spoken in south-central Montana, USA on the Crow Indian Reservation.
- Unless otherwise indicated, the Crow data that appears in this handout come from my own fieldwork, conducted on the Crow Reservation, as well as from remote elicitation sessions from 2018 to 2020.

2.2 Active-stative agreement in Crow

- Crow is a highly polysynthetic, head-final language with an SOV word order and an active-stative (or Split-S) morphosyntactic alignment.
- In unergatives (or active intransitives), the A-set marker index the subject:¹

(5) baa-chiwakíi-k
1A-pray-DECL
'I prayed'

- In unaccusatives (or stative intransitives), B-set markers are instead used to mark subjects:²

(6) bii-ámmichi-k
1B-fall-DECL
'I fell'

- In unaccusatives (or stative intransitives), B-set markers are instead used to mark subjects:²

(7) dii-waa-láxpii-k
2B-1A-hug-DECL
'I hugged you'

¹Based on the noun incorporation diagnostic, I assume active verbs and stative verbs are unergatives and unaccusatives, respectively. Noun incorporation is attested only for objects of transitive verbs and subjects of stative intransitives. Active intransitives do not allow incorporation of their subjects; attempts to elicit such constructions have been unsuccessful.
²The split between active and stative verbs is generally based on the verb’s meaning: active verbs tend to denote events with agentive subjects while stative verbs are commonly states with non-agentive subjects (Ko 2019).
³In Crow, obstruents undergo intervocalic laxing.
Note that overt A- and B-set agreement markers are restricted to local person; third person agreement markers are phonologically null.

A-set agreement in unergatives, as in (8), is the result of an Agree relation with Asp, whereas B-set agreement in unaccusatives, as in (9), is intimately linked to agreement with \( v \).

Following Legate (2003) and Deal (2009), I assume that unaccusative \( v \) is a phase head and agreement between VP-internal DP and Asp is prohibited.

\[
\begin{align*}
\text{(8) } & \text{A-set in unergatives} \\
& \text{CP} \quad \text{AspP} \quad C \\
& \quad \text{vP} \quad \text{Asp} \\
& \quad \text{DP} \quad \text{VP} \\
\end{align*}
\]

\[
\begin{align*}
\text{(9) } & \text{B-set in unaccusatives} \\
& \text{CP} \quad \text{AspP} \quad C \\
& \quad \text{vP} \quad \text{Asp} \\
& \quad \text{DP} \quad \text{VP} \\
\end{align*}
\]

Two generalizations on Crow agreement:

(i) A-set agreement is controlled by the highest DP argument within the c-command domain of Asp.
(ii) B-set agreement is controlled by the highest DP argument within the c-command domain of \( v \).

2.3 The structure of Crow applicatives

In this talk, I focus on the benefactive applicative \(-ku\).\(^5\)

Both unergatives and unaccusatives may combine with the applicative \(-ku\), as in (10a) and (10b).\(^6,7\)

\[
\begin{align*}
\text{(10) a. } & \text{Applicative of unergative} \\
& \text{dii-wah-chiwas-a-[wa]} ku-k \\
& \text{2B-1A-pray-JUNCT-1A-APPL-DECL} \\
& \text{‘I prayed for you’} \\
\text{b. } & \text{Applicative of unaccusative} \\
& \text{dii-wiissa-a-[wa]} ku-k \\
& \text{2B-tell-lie-JUNCT-1A-APPL-DECL} \\
& \text{‘I lied for you’} \\
\end{align*}
\]

For both types of applicative constructions, A-set marking is used to reference the subject, whereas B-set markers refer to the applied object.

I follow the typology of Pylkkänen (2002, 2008) and assume that \(-ku\) is a high applicative, in which ApplP sits between above VP but below \( v \), as in (11).

\[
\begin{align*}
\text{(11) The structure of applicatives of unaccusatives} \\
& \text{ApplP} \quad \text{v} \\
& \quad \text{DP_Appl} \quad \text{VP} \quad \text{Appl} \\
& \quad \text{DPTheme} \quad \text{V} \\
\end{align*}
\]

Core assumption: I adopt the position that distinct theta roles are configurationally determined (UTAH; Baker 1988, 1997).

3 Diagnosing applicatives of unaccusatives

Main observation: Themes of applicatives of unaccusatives are in a syntactically higher position that applied objects.

3.1 Diagnostic #1: Word order

The meaning of applicative constructions involving intransitive verbs is sensitive to the order of the nominal DP elements.

When both arguments in an applicative construction with an unergative verb are overt, the agent must precede the applied object, as in (12).
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This is the expected result given that external arguments are introduced in a position higher than the applied object (cf. 11).

(12) a. Logan Taylor chiwaká-a-ku-k
    Logan Taylor pray-JUNCT-APPL-DECL
    ‘Logan prayed for Taylor’
    NOT ‘Taylor prayed for Logan’

b. Taylor Logan chiwaká-a-ku-k
    Taylor Logan pray-JUNCT-APPL-DECL
    ‘Taylor prayed for Logan’
    NOT ‘Logan prayed for Taylor’

• Similarly, in applicatives of unaccusatives, the theme must also precede the applied object, as in (13).

(13) a. Logan Taylor bíiss-a-ku-k
    Logan Taylor tell.lie-JUNCT-APPL-DECL
    ‘Logan lied for Taylor’
    NOT ‘Taylor lied for Logan’

b. Taylor Logan bíiss-a-ku-k
    Taylor Logan tell.lie-JUNCT-APPL-DECL
    ‘Taylor lied for Logan’
    NOT ‘Logan lied for Taylor’

• This diagnostic suggests that in applicatives of unaccusatives the theme is the structurally highest argument.

3.2 Diagnostic #2: sapéen/sapée ‘who’

• In Crow, the word sapée(n) ‘who’, which is used to refer to humans, has a nominative-accusative-like distribution.8

• The form sapéen is used for subjects of all verbs, such as unergatives (14a), unaccusatives (14b), and transitives (14c):9

(14) a. sapéen xalússhi-?
    who.SBJ run-INTERR
    ‘Who ran?’
    (Unergative)

b. sapéen bíissi-?
    who.SBJ tell.lie-INTERR
    ‘Who lied?’
    (Unaccusative)

c. sapéen Logan dichí-?
    who.SBJ Logan hit-INTERR
    ‘Who hit Logan?’
    (Transitive)

• To refer to objects of transitive clauses, however, the form sapée must be used, as in (15).

(15) Logan sapée dichí-?
    Logan who.OBJ hit-INTERR
    ‘Who did Logan hit?’

• Two generalizations about sapéen and sapée:10
  (i) sapéen must be used to reference the highest DP argument.
  (ii) sapée must be used to reference the lowest DP argument.

• In applicatives of unaccusatives, only sapéen can be used to refer to the theme DP argument, as in (16a); if sapée instead appears, the construction is considered ill-formed, as in (16b).

(16) a. sapéen Taylor-sh bíiss-a-ku-?
    who.SBJ Taylor-DEF tell.lie-APPL-INTERR
    ‘Who lied for Taylor?’

b. *sapée Taylor-sh bíiss-a-ku-?
    who.OBJ Taylor-DEF tell.lie-APPL-INTERR
    Intended: Who lied for Taylor?

• On the other hand, applied arguments must be realized as sapée, not sapéen:

(17) a. Logan sapée bíiss-a-ku-?
    Logan who.OBJ tell.lie-APPL-INTERR
    ‘Who did Logan lie for?’

8The set of wh-words in Crow is perhaps better referred to as s-words because, as the term suggests, these words all begin with an ‘s’, e.g. saape ‘what’, sapée ‘who’, sáapa ‘why’, shóota ‘how’, sáawi ‘how many’, shóo ‘when, where’, etc.

9The Hidatsa cognate of -n (as in sapéen) appears to have a wider distribution of use as a topic/focus marker (Boyle 2007) or an ergative marker (Park 2012).

10The question mark symbol <?> represents a glottal stop [ʔ] (see Graczyk 2007 for a discussion of the orthography of Crow employed here).

11In (indirect) causative constructions involving a transitive verb, the sapéen must be used for the causer while sapée is used for the theme. However, either sapéen or sapée may be used for the agent.
b. *Logan sapéen bíss-a-ku-?
   Logan who.SBJ tell.lie-JUNCT-APPL-INTERR
   Intended: ‘Who did Logan lie for?’

- Results of the sapéen sapéen diagnostic:
  (a) the highest argument is the theme
  (b) the lowest argument is the applied object

3.3 Diagnostic #3: Incorporation of baa ‘indefinite object’

- The Crow morpheme baa- is homophonous with first-person A-set, has been referred to as an incorporated indefinite object in the literature by Wallace (1993) and Graczyk (2007).12

- In (18a), the transitive contains an overt DP object xóoxaashe ‘corn’, which is the structurally lowest DP argument. To render the object generic, a common strategy is to recruit the use of baa-, as in (18b).

(18) a. xóoxaashe baluushí-k
corn 1.eat-DECL
‘I’m eating corn’

b. baa-waluushí-k
INDEF.OBJ-1.eat-DECL
‘I’m eating (something)’

- In applicatives of transitives with baa-, only the theme argument – the structurally lowest argument – may be interpreted as non-specific, as in (19a), but not the applied argument, as (19b) shows.

(19) a. Logan baa-óosh-b-aa-wa-ku-k
Logan INDEF.OBJ-cooked-1A-DIR.CAUS-1A-APPL-DECL
‘I’m cooking (something) for Logan’

b. *xóoxaashe baa-óosh-b-aa-wa-ku-k
corn INDEF.OBJ-cooked-1A-CAUS-1A-APPL-DECL
Intended: I’m cooking corn for people

12 According to Marsault (2019:53), across all Siouan languages, the prefix baa- has been described in a variety of ways: “valence-decreasing” (Boyle 2009), “detransitivizing” (Hartman 2015:1270), “absolutive” (Carter et al. 2006:928), “indefinite object marker” (Ullrich 2008:735), and “unspecified argument” (Kasak 2019:231).

- Generalization of baa-: In structures with more than one argument, baa-references the lowest DP argument.13

- In applicatives of unergatives and unaccusatives with baa-, as in (20a) and (20b), the non-specific argument is the applied object.

(20) a. Applicative of unergative
   baa-waa-waláxx-ba-ku-k
   AP-1A-sing-1A-APPL-DECL
   ‘I sing for people (e.g. a crowd)’

b. Applicative of unaccusative
   baa-wíiss-a-wa-ku-k
   AP-tell.lie-JUNCT-1A-APPL-DECL
   ‘I lie for people’

- Applicatives of unaccusatives involving baa- suggest that the lowest argument is the applied object – theme DP arguments in these constructions can never be interpreted as indefinite via baa-.

3.4 Summary

- The three tests suggest that in applicatives of unaccusatives, the theme DP is structurally highest argument and the applied DP is the structurally lowest DP. The results of these tests are given in Table 1.

<table>
<thead>
<tr>
<th>Diagnostic</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word order</td>
<td>theme DPs must precede applied DPs</td>
</tr>
<tr>
<td>sapéen(n)</td>
<td>theme DPs, sapéen = applied DPs</td>
</tr>
<tr>
<td>sapéen</td>
<td>baa may only refer to applied DPs</td>
</tr>
</tbody>
</table>

Table 1: Summary of diagnostics for applicatives of unaccusatives

- Adopting UTAH, I interpret these results as suggesting that the theme DP undergoes A-movement into a structurally higher position – namely, SpecP.13

13 Graczyk (2007:48) also describes baa- as an “indefinite nominalizer.” When baa- attaches to an unaccusative verb, it derives a noun (e.g. baa- + chíkua > baachíkua ‘sugar’).
4  Feeding agreement: An anti-locality-based account

• Consider again the simple unaccusative and the applicative of unaccusative, which are given in (21a) and (21b).
  ◦ B-set agreement marks the theme in an unaccusative, but A-set marks the theme in an applicative of unaccusative.

(21) a.  **Unaccusative**
  bii-wíisshi-k
  1B-tell.lie-DECL
  ‘I lied’

b.  **Applicative of unaccusative**
  dii-wíissa-a-wa-ku-k
  2B-tell.lie-APPL-JUNCT-1A-APPL-DECL
  ‘I lied for you’

• Proposal for the agreement asymmetry:
  ◦ In simple unaccusative constructions, the theme arguments remain in-situ and receive B-set marking via a probe on \( v \).
  ◦ In applicatives of unaccusatives, the theme arguments move to Spec, \( vP \) and receive A-set marking via a probe on Asp.

• The structural configurations of (21a) and (21b) before movement are given in (22a) and (22b), respectively. In both constructions, the theme DP arguments are generated in the same position – Spec, VP.

(22) a.  **Unaccusative**

\[
\begin{array}{c}
\text{vP} \\
\text{VP} \\
\text{V} \\
\text{DP_{THEME}} \\
\end{array}
\]

b.  **Applicative of unaccusative**

\[
\begin{array}{c}
\text{vP} \\
\text{VP} \\
\text{ApplP} \\
\text{DP_{APPL}} \\
\text{V} \\
\text{DP_{THEME}} \\
\end{array}
\]

• To account for these A-movement asymmetries, I adopt the Deal’s (2019:408) revised version of Erlewine’s (2016:445) original formulation of Spec-to-Spec anti-locality, given in (23).

(23)  **Generalized Spec-to-Spec anti-locality:** Movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

(24)  **Definition of crossing:** Movement from position \( \alpha \) to position \( \beta \) crosses \( \gamma \) if and only if \( \gamma \) dominates \( \alpha \) but does not dominate \( \beta \).

• The derivation for unaccusatives, as illustrated in (25), is as follows:
  (i) The theme DP is unable to move to Spec, \( vP \) due to an anti-locality constraint in Crow.
  (ii) \( v \) agrees with the theme and results in B-set marking.

(25)

\[
\begin{array}{c}
\text{vP} \\
\text{VP} \\
\text{V} \\
\text{TOO_LOCAL} \\
\end{array}
\]

• In unaccusatives, theme arguments are unable to move to Spec, \( vP \) and ultimately receives B-set marking to reference the subject.

• The derivation for applicatives of unaccusatives (26) is as follows:
  (i) The applied object cannot move to Spec, \( vP \); movement out of ApplP is too local.
  (ii) Instead, the theme DP moves to Spec, \( vP \) crossing over ApplP.
  (iii) Asp agrees with the theme DP and \( v \) agrees with the applied object, which results in A- and B-set marking, respectively.

(26)

\[
\begin{array}{c}
\text{AspP} \\
\text{vP} \\
\text{VP} \\
\text{Appl} \\
\text{TOO_LOCAL} \\
\end{array}
\]

• In applicatives of unaccusatives, the theme raises over the applied object and receives A-set marking.\(^{14}\)

\(^{14}\text{As Baier (2017), Deal (2019), and Erlewine (2020) note, a solution based on anti-locality is inherently 'fragile' as a change in the number of intervening projections can determine whether movement can or cannot take place. That said, I am not aware of any projections between ApplP and vP in Crow, although a logical next step would be to investigate the class of so-called aspectual auxiliaries in Crow (see Travis 2010).} \)
5 Alternative proposals

- Restrictions on applicative arguments to undergo A-movement:
  - **Applicative arguments as PPs**: Applied arguments are PPs which prohibits them from undergoing A-movement (Baker 2014:367).

- However, these two accounts are unable to account for the inability of theme arguments to undergo movement in simple unaccusatives:

\[(27)\]

- Thus, an anti-locality account provides an explanation for why themes move to Spec\(\iota P\) in applicatives of unaccusatives, but not in simple unaccusatives.

6 Conclusion

- **Core observations of applicatives of unaccusatives**:
  1. A-set, and not B-set marking, is used to cross-reference the theme
  2. The theme is structurally higher than the applicative argument

- **Proposal**: The theme moves over the applied object to Spec,\(\iota P\); the applied object does not undergo movement due to a ban on “too close” movement.
  - Movement of the theme into Spec,\(\iota P\) feeds A-set agreement.

- **Implications**: Although discussions on the anti-locality constraint have focused on \(\dot{A}\)-movement, Crow represents another case in which A-movement also exhibits anti-locality effects.
  - Obtaining a fuller picture of the lower bounds of A/\(\dot{A}\)-movement across different languages.
  - Reducing the gap between A/\(\dot{A}\)-movement (see van Urk 2015).

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References


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