1 Introduction

• Similar surface patterns can arise via distinct underlying mechanisms

• What pretheoretically looks like “agreement” in the verbal domain can be divided into two distinct phenomena
  – Agreement: feature sharing between a nominal argument and a verbal head
  – Clitic doubling: a realization of the functional head D within the verbal complex

► We argue that a similar distinction can be made in the domain of nominal case concord
  – Case concord: feature sharing between multiple categorially distinct elements in the DP
  – Case doubling: realization of multiple instances of the functional head D

• In some languages, a noun and its modifiers match in case, regardless of whether the DP is continuous or discontinuous

1 Note that concord in continuous DPs is optional in Warlpiri, while concord in discontinuous DPs is obligatory [Simpson 1991].

(1) ‘(The) two small children are chasing the dog.’
Warlpiri (Pama-Nyungan, [Simpson 1991:257-259])

   child-DU-ERG small-DU-ERG PRES-3ds dog chase-NPST

   child-DU-ERG PRES-3ds dog chase-NPST small-DU-ERG

• In other languages, a noun and its modifiers only match in case if the DP is discontinuous

(2) ‘Mukton fed rice to a newborn baby.’
Tiwa (Tibeto-Burman)

a. Mukton mai-go [ korkhyá(-na) lurí(-na) ] cháí os-ga.
   Mukton rice-ACC child-DAT tender-DAT eat CAUS-PFV

b. Mukton [ korkhyá(-na) ] mai-go [ lurí(-na) ] -lo cháí
   CAUS-PFV

• Languages like Warlpiri display true concord while languages like Tiwa display case doubling

► We argue that case doubling is the result of multiple DP shells
  – Each instance of D in the shell structure can be realized as case
  – Overt realization of multiple instances of D happens only in discontinuous DPs

The upshot

► Surface patterns of concord derive from two distinct mechanisms: one involving feature sharing and one involving multiple instances of D

• Roadmap:
  – §1: Introduction
  – §2: Case doubling in Tiwa
  – §3: The DP-shell analysis
  – §4: Comparison with theories of concord
  – §5: Case doubling crosslinguistically
  – §6: Conclusion
2 Case doubling in Tiwa

- General background:
  - Tibeto-Burman language spoken primarily in Assam, India by approximately 27,100 speakers (Simons and Fennig, 2017)
  - Data collected by the second author between 2015 and 2018 in Um-swai, Karbi Anglong district, Assam
  - Head-final with basic SOV order, accusative alignment
  - Case surfaces as an enclitic on the final element of the DP

- A noun and its modifiers can be separated to form a structurally discontinuous DP
  - In a continuous DP, case can only surface on the final element
  - In a discontinuous DP, case surfaces as an enclitic on each piece of the DP

(3) ‘Mukton fed rice to a newborn baby.’
     Mukton rice ACC child DAT eat CAUS-PFV
  b. Mukton [ korkhyá(-na) ] mai-go [ lurí(-na) ]-lo chái
     Mukton child DAT rice ACC tender DAT -FOC eat os-ga.
     CAUS-PFV

- Both elements of a discontinuous DP behave like independent DPs
  - Both receive case marking, cliticized to their final element
  - Both elements can undergo scrambling independently

(4) ‘Mukton fed rice to a newborn baby.’
  a. [ Lurí-na ]-lo Mukton [ korkhyá-na ] mai-go chái
     tender-DAT -FOC Mukton child-DAT rice-ACC eat
     os-ga.
     CAUS-PFV
  b. [ Korkhyá-na ] Mukton [ lurí-na ]-lo mai-go chái
     child-DAT Mukton tender-DAT -FOC rice-ACC eat
     os-ga.
     CAUS-PFV
  c. [ Lurí-na ]-lo Mukton mai-go [ korkhyá-na ] chái
     tender-DAT -FOC Mukton rice-ACC child-DAT eat
     os-ga.
     CAUS-PFV
  d. [ Korkhyá-na ] Mukton mai-go [ lurí-na ]-lo chái
     child-DAT Mukton rice-ACC tender-DAT -FOC eat
     os-ga.
     CAUS-PFV

- Case doubling is found for all DP modifiers that can be separated from the noun
  - Adjectives
  - Numerals

(5) ‘I gave money to five priests.’
     1SG five CL priest-PL-DAT money give-PFV
     five CL-DAT -FOC 1SG priest-PL-DAT money give-PFV

Note that while the modifier in a discontinuous DP usually surfaces with focus marking, this is a tendency rather than a requirement.

     dog-DAT yesterday hundred-one-CL-DAT Lastoi chicken meat-ACC give-PFV

‘Lastoi gave chicken to a hundred dogs yesterday.’
(6) ‘Mansing gave flowers to every woman.’
   Mansing every woman-PL-DAT flower-ACC give-PFV
   Mansing woman-PL-DAT flower-ACC every-DAT -FOC
   os-ga.
give-PFV

(7) ‘My mother gave water to the man that was running.’
   my mother water-ACC run AUX-NMLZ person-DAT give-PFV
b. [ Cholói li-wa-na ] -lô ái má ti-go
   run AUX-NMLZ-DAT -FOC my mother water-ACC
   [ lîbing-a ] os-ga.
   person-DAT give-PFV

(8) ‘Mukton gave money to this person.’
   Mukton this person-DAT money-ACC give-PFV
   Mukton person-DAT money-ACC this-DAT -FOC give-PFV

(9) ‘Mukton gave money to some priest.’
   Mukton some priest-DAT money-ACC give-PFV
   Mukton priest-DAT money-ACC some-DAT -FOC give-PFV

(10) ‘Monbor saw Sonali’s cat.’
   Monbor Sonali-GEN cat-ACC yesterday see-PFV
   Monbor cat-ACC yesterday Sonali-GEN-ACC -FOC see-PFV

- In addition to dative case, case doubling in discontinuous DPs occurs
  with:
  
  - Nominative (-Ø)

(11) ‘Every woman didn’t come yesterday.’
a. [ Sógol margî-raw ] khóna phi-ya-m.
    every woman-PL yesterday come-NEG-PST
    woman-PL yesterday every -FOC come-NEG-PST

- Accusative (-gô)

(12) ‘Mukton greeted every priest in the market.’
   Mukton every priest-PL-ACC market-LOC greet-PFV
   Mukton priest-PL-ACC market-LOC every-ACC -FOC
   sêwa os-ga.
   greet-PFV

- Genitive (-n)e

(13) ‘Lastoi bought the book that every teacher read yesterday.’
a. Lastoi [sogol sigai kirî-raw-e ] khóna lekhé-wa
   Lastoi every teacher-PL-GEN yesterday read-NMLZ
   lái-go ] pre-ga.
   book-ACC buy-PFV
   Lastoi teacher-PL-GEN yesterday every-GEN -FOC
   read-NMLZ book-ACC buy-PFV
Feature sharing and functional heads in concord

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– Comitative (-rê)

(14) ‘Lastoi went to market with every man.’

   Lastoi  every man-PL-COM  market-DAT  go-PFV

   Lastoi  man-PL-COM  market-DAT  every.COM -FOC  go-PFV

• Summary:
  – Case doubling occurs only in structurally discontinuous DPs
  – Both elements of the discontinuous DP behave like full DPs
  – Case doubling occurs with all modifiers and with a variety of case markers

3 The DP-shell analysis

• Desiderata:
  – Derive case doubling only under discontinuity
  – Account for the fact that each piece of a discontinuous DP behaves like an independent DP

➤ Both can be achieved on an account which assumes multiple DP shells

• We assume that DPs contain two nested DP layers
• The head of the highest DP selects a DP complement
  – The structure of the DP korkhyá lurî ‘tender child’ is given below

(15) \[
\begin{array}{c}
\text{DP}_1 \\
\text{DP}_2 \\
\text{NP} \\
\text{AP} \\
korkhyá \\
lurî
\end{array}
\]

• Discontinuous DPs involve movement of a subconstituent of DP₂ to the specifier of DP₁
• The element that will be stranded (in this case the AP) undergoes movement to Spec,DP₁

(16) \[
\begin{array}{c}
\text{DP}_1 \\
\text{AP} \\
lurî \\
\text{DP}_2 \\
\text{NP} \\
\text{D}_1 \\
\text{D}_2 \\
korkhyá \\
lurî
\end{array}
\]

• After the AP has moved to Spec,DP₁, DP₂ can undergo remnant movement to a position higher in the clausal spine
• This remnant movement strands DP₁, which contains the adjective, and results in discontinuity

Mukton  child-DAT  rice-ACC  tender -DAT -FOC  eat
os-ga.
CAUS-PFV
‘Mukton fed rice to a newborn baby.’

• Evidence that the pieces of a discontinuous DP are related via movement comes from islands
• A noun cannot be separated from its modifier across any type of island boundary
  – Coordinate structure (18)
  – Relative clause (Appendix A)
  – Conditional (Appendix A)
(18) ‘Lastoi saw one cat and two elephants.’
   a. Lastoi khôna [[ miyâw kishá-gô ] arô [ hadi
     Lastoi yesterday cat one.CL-ACC and elephant
     two.CL-ACC see-PFV
     Lastoi elephant-ACC yesterday cat one.CL-ACC and
     two.CL-ACC -FOC see-PFV

Multiple realizations of case in discontinuous DPs

- DP₁ and DP₂ each contain an instance of D that can realize case
  - While the two DPs are nested, the case feature of D₁ is spread to D₂
  - This feature transmission is limited to heads of category D
- When the two DPs are separated via movement, both instances of D realize case

     Mukton child-DAT rice-ACC tender -DAT -FOC eat
     os-ga.
     CAUS-PFV
     ‘Mukton fed rice to a newborn baby.’

A single instance of case in continuous DPs

- When DP₁ and DP₂ remain nested, there are two adjacent instances of D, so we would expect two DP-final case enclitics
- Instead, only one instance of D is realized due to haplology

(20) Mukton mai-go [DP₁ [DP₂ korkhyá lurî-na ] (*-na) ] cháieat
     Mukton rice-ACC child tender-DAT -DAT eat
     os-ga.
     CAUS-PFV
     ‘Mukton fed rice to a newborn baby.’

Case mismatches in DOM contexts

- With accusative case, case doubling sometimes appears “optional”

(22) Lastoi [ ngá-gô ] khôna [ mile(-go) ] -lo pre-ga.
     Lastoi fish-ACC yesterday every-ACC -FOC buy-PFV
     ‘Lastoi bought every fish yesterday.’

- Case doubling is obligatory for other morphological cases

(23) ‘Sonali gave milk to three cats.’
      Sonali three-CL cat-DAT milk-ACC give-PFV
      Sonali cat-DAT milk-ACC three-CL-DAT give-PFV

- Differential object marking (DOM) is independently attested in Tiwa

(24) Sonali [ ngá(-gô) ] pre-ga.
     Sonali fish-ACC buy-PFV
     ‘Sonali bought (the) fish.’
DOM is conditioned by multiple factors, but the same conditioning factors hold for discontinuous elements
- If a continuous DP must be marked in a particular context, a piece of a discontinuous DP in that same position must also be marked

(25) ‘I quickly plucked all the flowers.’
  a. Ang [ mile km*(go] salang ha-ga.
     1SG every flower-ACC quickly pluck-PFV
  b. Ang [ khum*(go] salang [ mile(g0] ]-lo ha-ga.
     1SG flower-ACC quickly every-ACC -FOC pluck-PFV

- When a DP is split, the higher portion is an independent DP, DP₂, and is independently eligible for case assignment
- Since DP₁ and DP₂ are no longer nested at the time of accusative case assignment to DP₂, the case is not spread to both instance of D
- This results in a case mismatch

4 Comparison with theories of concord

- Various mechanisms for deriving case concord both within continuous DP structures and in non-contiguous structures have been proposed
  - One family of views assumes that case is assigned independently to multiple elements
  - Another set of analyses assumes that case is assigned only once and then spread to all of the elements that bear case
- Neither family of analyses provides a way to rule out case matching in continuous DPs while allowing it in discontinuous DPs
  - If case can be assigned independently to multiple elements in the DP, it is unclear why that assignment would only take place in discontinuous structures
  - If case is assigned once and spread, it is unclear how this spreading would take place only under discontinuity

- If we found the reverse pattern where concord only occurred in continuous DPs, we could derive this by assuming that concord applied after movement, allowing movement to bleed concord
- The pattern found in Tiwa, where movement feeds concord, cannot be derived by reordering the operations of movement and concord
- We could consider a modification to traditional accounts that assumes that concord always applies, but is sometimes not realized
  - Case concord always takes place in Tiwa
  - In continuous DPs, only one instance of case is realized due to a morphological impoverishment rule that limits the number of case markers that can be realized in a single continuous DP
- This account requires some stipulations to derive the attested patterns
  - The evidence from DOM shows that the higher piece of a discontinuous DP must be independently eligible for case assignment
    - Under the current account, this falls out from the fact that this higher piece is a full DP
  - The single case marker in a continuous DP must always occur as the final element in the DP
    - Under the current account, this is because case realizes the head-final head of DP
- Our account shares similarities with the impoverishment account
  - Multiple instances of case are present in continuous DPs, but only one is realized
  - Non-pronunciation of the second case marker is motivated by haplogy, which is independently attested in Tiwa case marking, rather than by a stipulative impoverishment rule
- We conclude that the Tiwa pattern derives from a different underlying mechanism than traditional concord
  - The empirical profile is different – case doubling occurs only under discontinuity in Tiwa
  - Traditional analyses of concord cannot be straightforwardly extended to cover this pattern
5 Case doubling crosslinguistically

5.1 Amahuaca

- Amahuaca is an endangered Panoan language spoken in the Peruvian and Brazilian Amazon
  - All data come from the first author’s fieldwork from 2015 to 2018
- Like Tiwa, Amahuaca shows case doubling in discontinuous DPs

(26) ‘All the men are killing a peccary.’
  a. \[
  \text{kìyyo} = \text{vi}^{(n)} = \text{mun jono}
  \]
  all = EMPH = ERG man = ERG = C peccary
  rutu = hi = ki = nu
  kill = IPFV = 3.PRES = DECL

  b. \[
  \text{mun jono} = \text{kiyyo} = \text{vi}^{(n)}
  \]
  man = ERG = C peccary all = EMPH = ERG
  rutu = hi = ki = nu
  kill = IPFV = 3.PRES = DECL

- Amahuaca shows differential case marking for subjects
- Unlike the Tiwa pattern of DOM, this differential case marking is purely structural, based on syntactic position (Clem, 2018)
  - When the transitive subject remains in its base position, it does not surface with ergative case
  - When the transitive subject moves to a higher position, it must surface with ergative

(27) ‘The man is killing the peccary.’
  a. \[
  \text{jono}^{(n)} = \text{mun jono} \quad \text{rutu} = \text{hi} = \text{ki} = \text{nu}
  \]
  man = ERG = C peccary all = EMPH = ERG
  kill = IPFV = 3.PRES = DECL

  b. \[
  \text{mun jono} = \text{kiyyo}^{(n)} = \text{ki} = \text{nu}
  \]
  man = C peccary kill = IPFV = 3.PRES = DECL

5.2 Kanum

- Kanum (Papuan; Donohue, 2011) shows evidence that case concord and case doubling can be active in the same language
- Case concord is not possible for adjectives in continuous DPs

(28) \[
\text{all} = \text{EMPH} = \text{ERG} \quad \text{man} = \text{ERG}
\]
  all = EMPH = ERG peccary kill = IPFV man = ERG
  = ki = nu
  = 3.PRES = DECL

  ‘All the men are killing a peccary.’

➤ This provides further evidence that the higher piece of a discontinuous DP must be independently eligible for case assignment
- The Amahuaca data also provide evidence for the proposed remnant movement of DP₂
  - When a noun occurs with multiple modifiers, the noun can be stranded while all of its modifiers move together to a higher position
    - The NP moves to Spec,DP₁
    - The modifiers remain in DP₂ and undergo remnant movement

(29) ‘Three black dogs are chasing a chicken.’
  a. \[
  \text{hatapa} = \text{mun chivan} = \text{hi} \quad \text{chivan} = \text{hichase} = \text{IPFV}
  \]
  ki=nu
  \[
  \text{chaho} = \text{black} \quad \text{kimish} = \text{nan} \quad \text{three} = \text{C}
  \]
  \[
  \text{hino} = \text{dog}
  \]
  =ki=nu
  \[
  = 3.\text{PRES} = \text{DECL}
  \]

  b. \[
  \text{mun hatapa} = \text{chivan} = \text{hi} \quad \text{chivan} = \text{hichase} = \text{IPFV}
  \]
  dog =ki=nu
  \[
  \text{chaho} = \text{black} \quad \text{kimish} = \text{nan} \quad \text{three} = \text{C}
  \]
  =ki=nu
  \[
  = 3.\text{PRES} = \text{DECL}
  \]

➤ This strengthens the argument that the moving DP₂ in these discontinuous structures is a remnant constituent

5.2 Kanum

- Kanum (Papuan; Donohue, 2011) shows evidence that case concord and case doubling can be active in the same language
- Case concord is not possible for adjectives in continuous DPs

(30) ntaop^{(n)ne} klawo-ne
  big-DAT child-DAT

  ‘for the big child’

- Demonstratives do show case concord in continuous DPs
Feature sharing and functional heads in concord

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6 Conclusion

• We have argued that case concord and case doubling constitute two empirically distinct phenomena

• Case concord
  - Surface distribution: case on multiple DP-internal elements in both continuous and discontinuous DPs
  - Underlying mechanism: shared case features on categorically distinct elements in the DP

• Case doubling
  - Surface distribution: case matching only in discontinuous DPs
  - Underlying mechanism: realization of multiple instances of the functional head D

• The concord/case doubling distinction mirrors the agreement/clitic doubling distinction
  - One is due to the sharing of features between categorially distinct elements

• Similar insight into the domain of concord can be gained by further investigating the distinction between case concord and case doubling

Appendix A: Discontinuous DPs and islands in Tiwa

• Evidence that movement is involved in the derivation of discontinuous DPs comes from islands

• It is impossible to separate the two elements of a discontinuous DP across a relative clause island

(33) ‘Tomorrow, Lastoi will catch the dog that bit all the people (last year).’

a. Lastoi khónana [dp [rc [líbing-râw-go] (mokhále)] last.year]
  every-ACC -FOC bite-NMLZ dog-ACC catch AUX-NEUT

  Lastoi person-PL-ACC tomorrow last.year
  every-ACC -FOC bite-NMLZ dog-ACC catch AUX-NEUT

c. *Lastoi khónana [dp [mokhále) [sógol-gô] -lo]
  Lastoi tomorrow last.year every-ACC -FOC
  bite-NMLZ dog-ACC person-PL-ACC catch AUX-NEUT

• It is similarly ungrammatical to split a DP across a conditional island

(34) ‘If Lastoi sees every man, she’ll be happy.’

a. [COND Chidi Lastoi [sógol mewâ-raw-go] -lo nú-gaidô, ]
  if Lastoi every man-PL-ACC -FOC see-COND
  khâdu-gam.
  happy-CF
Appendix B: Case stacking in Tiwa

- The DP-shell analysis can straightforwardly derive instances of case stacking in discontinuous DPs
- When a possessor is split from the possessum, the possessor surfaces with genitive case, plus the case that was assigned to the possessum

Monbor [ cat-ACC yesterday Sonali-GEN-ACC ] -FOC see-PFV  
‘Monbor saw Sonali’s cat yesterday.’

- This is because the DP containing the possessor contains two instances of D
- A DP-shell structure for the DP Sonaline miyw ‘Sonali’s cat’ is given below, where the possessor is assumed to be a full DP

(36)  

- The possessor, which will be stranded, moves to Spec,DP₁

(37)  

- When DP₂ undergoes remnant movement, the head of the possessor DP, D₃, and the head of the outer DP shell, D₁, are adjacent

(38)  

- D₃ is realized as genitive case, while D₁ was assigned accusative case
- Since the two adjacent instances of D have different case values they both surface, resulting in stacking
- Independent evidence for case stacking when multiple instances of D surface adjacent to one another comes from NP ellipsis
- When a possessed noun is elided, the possessor surfaces with genitive case plus the case of the entire larger DP

(39) Milton-e [ Monbor-e thľu-gô ] chá-wa-ne khélango,  
Milton-GEN Monbor-GEN banana-ACC eat-NMLZ-GEN after  
Monbor-ADD Milton-GEN-ACC eat-PFV  
‘After Milton ate Monbor’s banana, Monbor ate Milton’s.’
References


