Quantifier stranding and reflexive stranding in Mayrinax Atayal*

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The stranding of quantifiers/prepositions is argued to show the path of movement. Mayrinax Atayal, a verb-initial ergative language, displays a wide range of positions for the quantifier kahabaag ‘all’ and the reflexive anaphor nanaq ‘self’ when they are interpreted with absolutive DPs. Assuming stranding phenomena as diagnostics for movement, I investigate quantifier stranding and reflexive stranding in Mayrinax Atayal, and explore the structure of this language. The sentence-final absolutive DP is argued to be singled out in Spec of CP. Before moving to Spec of CP, the absolutive DP passes through Spec of vP. The V initial word order is derived from a V to T movement followed by a TP remnant movement. The positions of the quantifier and the reflexive anaphor reflect the movement path of the absolutive DP: base position, the intermediate Spec of vP, and Spec of CP.

1 Introduction

The stranding of quantifiers/prepositions is argued to show the path of movement (Sportiche 1988, McCloskey 2000, Martin 2003, but see also Dowty & Brodie 1984 and Dowty 1978 for a transformationless approach).1 Consider the following stranding phenomena in English:

(1) a. All the children have _ left.
   b. The children have all _ left. (McCloskey 2000)

(2) a. Which book, did they talk [about ti ]?
   b. This book, was talked [about ti ] (Martin 2003)

The sentences in (1) show that the base position of all the children is Spec of vP; the stranding of all shows the path of the movement from Spec of vP to Spec of TP. This movement is illustrated by the solid line in (3). The sentences in (2) show that which book and this book are moved from inside the PPs, as shown in (4).

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1 Dowty & Brodie (1984) argue that the determiner all and the VP-quantifier all are of different logical types, but have equal truth-conditions. The VP-quantifier all shows relations between a VP and its argument, including subject, object and indirect object, but not modifiers. This approach is not discussed in this paper since we need at least three positions for the quantifier.
Mayrinax Atayal, an Austronesian language, displays a wide range of positions for the quantifier *kahabaag* ‘all’ and the reflexive anaphor *nanaq* ‘self’. In this paper, I will investigate these two stranding phenomena, quantifier stranding (QS) and reflexive stranding (RS). Assuming that stranding phenomena are diagnostics for movement, I will explore the structure of this head-initial ergative language. The rest of this section is a brief introduction of Mayrinax Atayal and the QS/RS data.

Mayrinax is a dialect of Atayalic, which in turn is a sub-branch of Formosan languages (Tryon 1995). It is argued that, along with other Austronesian languages, Mayrinax is an ergative language with verb-ergative-absolutive word order (Huang 1994). The absolutive DP in sentence-final position is generally taken as the subject or topic of the sentence (Guilfoyle, Hung and Travis 1992). The absolutive DP can be any thematic role of the predicate, depending on the voice morphology on the verb.

(5) a. *tu-m-apiq* cu *naniqan* i Tali
    AV-tap OBL table ABS Tali
    ‘Tali taps the table.’

b. *bu?-un* ni Tali ku bawak
    shoot-PV ERG Tali ABS pig
    ‘The pig is shot by Tali.’

c. *t-in-ahuk-an* ni Tali ku tahukan
    REAL-sit-LOC ERG Tali ABS chair
    ‘Tali was sitting on that chair.’

d. *si-ʔuhak* ni Yuma cu cajpuʔ i Tali
    BV-pull ERG Yuma OBL radish ABS Tali
    ‘Yuma pulled out the radish for Tali.’

When the verb takes agent voice (AV) morphology -*um-*, as in (5a), the agent, *Tali*, occupies the sentence final position. When the verb takes patient voice (PV) -*un*, as in (5b) the patient/theme occupies the sentence-final position. In (5c), the location occupies that position, signaled by the locative voice (LV) morphology, -*an*. (5d) is a beneficiary voice sentence with the beneficiary role in sentence-final position. The examples in this paper are all in PV unless marked otherwise.

The quantifier *kahabaag* ‘all’ can occur in various positions without changing the meaning. Consider the following data:\(^2\)

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\(^2\) In contrast, other quantifiers do not behave the same way. Numbers, *tikaj* ‘some’, and *pajuh* ‘many’ do not strand.

a. *bahq-an* ni Buyung cuhisa ku ʔusaʔiŋ ka sjatu
    wash-LV ERG Buyung yesterday ABS two LINKER clothes
    ‘Buyung washed two clothes.’
The quantifier is not just an adjunct and does not have to be bound by the subject/absolutive DP. It can also be interpreted with the ergative DP. When the quantifier is interpreted with the ergative DP, it can occur only in one position.

The reflexive *nanaq* ‘self’, on the other hand, can occur in various positions. These positions coincide with the stranding positions of *kahabaag* ‘all’. Consider the following data:

Nanaq, however, can also mean ‘alone’. In that case, the distribution is freer. Consider the following data:

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3 A question mark is given to (8a) because it shows a grammatical placement of *nanaq* but not a preferred one. The downgrading of grammaticality will not be discussed in this paper.
b. ma-bahuq cu sjatu i Buyung nanaq
   AV-wash OBL clothes ABS Buyung alone

Nanaq meaning ‘alone’ can occur in sentence final position without causing any downgrading of grammaticality, as in (9b), and can also be topicalized, which is impossible for nanaq meaning ‘self’, as in (9c).

The paper is organized as follows. Section 2 is a review of the previous attempts to deal with head-initial ergative languages including right-branching IP/TP, VP movement, and TP remnant movement. I will examine these attempts with the QS and RS data in Mayrinax Atayal in section 3 and propose a structure for Mayrinax. Section 4 is a conclusion.

2 Previous analyses

I will review the basic operations from three previous analyses of how to derive verb-initial word order. These analyses are Guilfoyle, Hung and Travis’s (1992) (hereafter GHT 1992) right-branching IP/TP approach, Massam’s (2000) VP movement approach, and Aldridge’s (2004) remnant TP movement approach. I will further examine these structures with the QS and RS data in Mayrinax in section 3, and I will conclude that the structure of Mayrinax should be an Aldridge-type structure.

2.1 Guilfoyle, Hung and Travis (1992)

GHT (1992) propose a right-branching Spec of IP/TP for the absolutive-/subject-final word order. Consider the following two sentences from Malagasy, for example:

(10) a. M-an-sasa ny lamba amin’ ny savony ny zazavavy
    AV4-wash the clothes with the soap the girl
    ‘The girl washes the clothes with the soap.’

b. Sasa-na ny zazavavy amin’ ny savony ny lamba
    wash-PV the girl with the soap the clothes
    ‘The clothes are washed with the soap by the girl.’

The special morphology, AV marker -an-, in (10a) indicates that the agent occupies the sentence-final position. GHT argues that the morpheme -an- on V₀ assigns case to the theme, and since the agent is not case-marked in the Spec of VP, it is forced to move to the Spec of IP/TP where it is assigned case via Spec-Head Agreement with I₁, as in (11).

(11) GHT (1992: 381)

[Diagram]

\[\text{GHT (1992) term it as Agent Topic (AT). For consistency, I use Agent Voice (AV) through out for AT and Patient Voice (PV) for Theme Topic (TT).}\]
As for (10b), the morpheme -na indicates that Theme occupies the sentence-final position. Hung (1988) claims that -na assigns case to the Agent in the Spec of VP from I₀ position. The Theme is not assigned case and is forced to move to the Spec of IP/TP, as in (12).

\[ (12) \text{ GHT (1992: 381)} \]

\[
\begin{array}{c}
\text{IP} \\
\phantom{\text{IP}} \\
\phantom{\text{IP}} \\
\phantom{\text{IP}} \\
\text{I'} \\
\phantom{\text{I'}} \\
\phantom{\text{I'}} \\
\phantom{\text{I'}} \\
\text{Theme} \\
\phantom{\text{Theme}} \\
\phantom{\text{Theme}} \\
\phantom{\text{Theme}} \\
\text{VP} \\
\phantom{\text{VP}} \\
\phantom{\text{VP}} \\
\phantom{\text{VP}} \\
\text{I'} \\
\phantom{\text{I'}} \\
\phantom{\text{I'}} \\
\phantom{\text{I'}} \\
\text{Agent} \\
\phantom{\text{Agent}} \\
\phantom{\text{Agent}} \\
\phantom{\text{Agent}} \\
V_0 \\
\phantom{V_0} \\
\phantom{V_0} \\
\phantom{V_0} \\
\text{DP} \\
\phantom{\text{DP}} \\
\phantom{\text{DP}} \\
\phantom{\text{DP}} \\
\text{I} \\
\phantom{\text{I}} \\
\phantom{\text{I}} \\
\phantom{\text{I}} \\
\text{AbsP} \\
\phantom{\text{AbsP}} \\
\phantom{\text{AbsP}} \\
\phantom{\text{AbsP}} \\
\text{t}_I \\
\phantom{\text{t}_I} \\
\phantom{\text{t}_I} \\
\phantom{\text{t}_I} \\
\end{array}
\]

This model is very straightforward. However, I will show that the movement of the theme in Mayrinax seems to be more complicated than this by using QS and RS data.

2.2 Massam (2000)

Massam (2000) proposes a VP movement to deal with verb-initial languages.\(^5\) The motivation of moving VPs is a [PRED] feature on I₀/I₀ (as opposed to [D]) that needs to be checked. An AbsP (or an AgrO) above VP first moves out the Theme DP from VP (to check the absolutive case), and then the [PRED] feature on I₀/I₀ moves out the remnant VP to derive verb-initial word order. Consider the following tree structure:

\[ (13) \text{ Massam (2000: 108)} \]

\[
\begin{array}{c}
\text{TP} \\
\phantom{\text{TP}} \\
\phantom{\text{TP}} \\
\phantom{\text{TP}} \\
\text{T'} \\
\phantom{\text{T'}} \\
\phantom{\text{T'}} \\
\phantom{\text{T'}} \\
\text{EPP[PRED]} \\
\phantom{\text{EPP[PRED]}} \\
\phantom{\text{EPP[PRED]}} \\
\phantom{\text{EPP[PRED]}} \\
\text{vP} \\
\phantom{\text{vP}} \\
\phantom{\text{vP}} \\
\phantom{\text{vP}} \\
\text{NP[Erg]} \\
\phantom{\text{NP[Erg]}} \\
\phantom{\text{NP[Erg]}} \\
\phantom{\text{NP[Erg]}} \\
\text{v'} \\
\phantom{\text{v'}} \\
\phantom{\text{v'}} \\
\phantom{\text{v'}} \\
\text{AbsP} \\
\phantom{\text{AbsP}} \\
\phantom{\text{AbsP}} \\
\phantom{\text{AbsP}} \\
\text{[Erg]} \\
\phantom{\text{[Erg]}} \\
\phantom{\text{[Erg]}} \\
\phantom{\text{[Erg]}} \\
\text{NP[Abs]} \\
\phantom{\text{NP[Abs]}} \\
\phantom{\text{NP[Abs]}} \\
\phantom{\text{NP[Abs]}} \\
\text{Abs'} \\
\phantom{\text{Abs'}} \\
\phantom{\text{Abs'}} \\
\phantom{\text{Abs'}} \\
\text{[Abs]} \\
\phantom{\text{[Abs]}} \\
\phantom{\text{[Abs]}} \\
\phantom{\text{[Abs]}} \\
\text{<VP> \\
\phantom{<VP>}} \\
\phantom{<VP>}} \\
\phantom{<VP>}} \\
\text{V_0} \\
\phantom{V_0} \\
\phantom{V_0} \\
\phantom{V_0} \\
\text{t}_I \\
\phantom{\text{t}_I} \\
\phantom{\text{t}_I} \\
\phantom{\text{t}_I} \\
\end{array}
\]

This analysis expands the width of EPP feature on T₀ (EPP[D] and EPP[PRED]) and provides a unified account for the different word orders that Massam discusses. However, I will show in section 3 that it does not explain the Mayrinax data.

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\(^{5}\) She also proposes the same approach for VSO languages. The difference between VSO and VOS is that the former involves noun incorporation and the latter does not,
2.3 Aldridge (2004)

In Aldridge's model, ergative case is inherent and assigned by \( \nu^0 \) while \( T^0 \) checks Absolutive case. The ergative DP is merged in a position closer to \( T^0 \) than the absolutive DP. In order to establish a probe-goal relation between \( T^0 \) and the absolutive DP, \( DP_{[Abs]} \) must move to the edge of \( \nu P \) higher than \( DP_{[Erg]} \). This suggests \( \nu P \) is a phase because the Spec of \( \nu P \) provides an escape hatch for the absolutive DP for further movement. Aldridge proposes that \( \nu^0 \) hosts an EPP feature in the sense of Chomsky 2001 when the verb is transitive.

(14) Aldridge (2004: 7)

For intransitives, the structural ergative case is not available. \( \nu^0 \) does not have an EPP feature, so the DP merged in the Spec of \( \nu^0 \) is now the goal of the absolutive case probing from \( T^0 \).

(15) Aldridge (2004: 5)

The derivation of the word order in Aldridge's model is, first of all, that verbs move to \( T^0 \) to pick up tense morphology.\(^6\) The absolutive-final word order is derived by moving the \( DP_{[Abs]} \) to a topic position above \( TP \), via the EPP feature on \( C^0 \). Aldridge adopts and modifies the predicate-fronting analyses proposed by Rackowski (1998), Rackowski & Travis (2000), and Pearson (2001), and proposes that the remnant TP is fronted to derive verb-initial word order.

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\(^6\) In Aldridge’s model, there is an AspP below TP. I will omit this projection here.
The TP-movement proposed by Aldridge is not driven by morphological/syntactic features, but by a PF constraint that a DP cannot be spelled out in the leftmost position in a phase edge. The topicalized DP_{Abs} would have been at the leftmost position and violated the PF constraint if the closest non-DP XP (which is TP) were not fronted and merged with the CP.

(17) Stranded DP Constraint (Aldridge 2004: 10)
A DP cannot be spelled out in the leftmost position in a phase edge.

3 Mayrinax QS and RS

I will examine these approaches with the QS and RS data in Mayrinax. Before we go into the positions of QS and RS, two questions need to be discussed. First, where should the sentence-final DP go? Second, what is the internal order of the DPs with the quantifier kahabaag and the reflexive nanaq?

3.1 Sentence-final DP

For the first question, on the one hand, as Massam (2000) suggests, the sentence-final DP should locate under vP. On the other hand, as GHT (1992) and Aldridge (2004) suggest, the sentence-final DP should be singled out either in Spec of TP or Spec of CP. GHT show that the sentence-final DP shares some subject-like properties and propose that it is located in Spec of TP. Aldridge shows that the sentence-final DP is located in Spec of CP.

The data below suggest that the absolutive DP in Mayrinax should be singled out in a higher position as well. First of all, the sentence-final DPs cannot be scrambled while others can.

(18) a. tutiŋ-un ni Buyung na kahuj i Tali
hit-PV ERG Buyung INS woodstick ABS Tali
b. tutiŋ-un na kahuj ni Buyung i Tali
hit-PV INS woodstick ERG Buyung ABS Tali
   c. *tutiŋ-un i Tali ni Buyung na kahuj
      hit-PV ABS Tali ERG Buyung INS woodstick
(18a,b) show that the ergative DP and the instrumental DP can be scrambled. Absolutive DPs, on the other hand, cannot be scrambled, as in (18c,d). In Massam’s structure, we are not able to explain why absolutive DPs behave differently since all DPs are stacked up below vP.

Second, sentence-final DPs can be topicalized. Ergative DPs, too, can be in Topic position; however, the appearance of a resumptive pronoun suggests that ergative DPs as Topic does not involve movement.\(^7\)

\[(19)\]

\[\text{a. } \text{tuti}\-\text{un ni Buyung i Tali} \]
\[\text{hit-PV ERG Buyung ABS Tali} \]
\[\text{‘Buyung hit Tali.’} \]

\[\text{b. Tali ga tuti\-un ni Buyung} \]
\[\text{Tali TOP hit-PV ERG Buyung} \]
\[\text{‘As for Tali, Buyung hit him.’} \]

\[\text{c. Buyung ga tuti\-un=\text{nja} i Tali} \]
\[\text{Buyung TOP hit-PV=3S.ERG ABS Tali} \]
\[\text{‘As for Buyung, he hit Tali.’} \]

\[\text{d. } \text{*Buyung ga tuti\-un i Tali} \]
\[\text{Buyung TOP hit-PV ABS Tali} \]

(19d) shows that, without the resumptive pronoun, the ergative DP cannot be in Topic position. Absolutive DPs do not have this restriction, as in (19b).\(^9\) Again, if we see absolutive DPs no different from other DPs (all stacked up under vP), we should not have the difference displayed in (19).

Third, just as with the topicalization data above, only absolutive DPs can undergo wh-movement.

\[(20)\]

\[\text{a. ima ku}^{10} \text{ ba-baiq-an=si cu ruwas} \]
\[\text{who NOM RED-give-LV=2S.ERG OBL book} \]
\[\text{‘Who will you give a book to?’} \]

\[\text{b. nanuwan ku b-in-ainaj ni jaja i isu} \]
\[\text{what NOM REALIS-buy ERG mother DAT you} \]
\[\text{‘What was it that Mother bought for you?’} \]

\[\text{c. nanuwan ku si-pakahuj=su} \]
\[\text{what NOM IV-chop=2S.ERG} \]
\[\text{‘What did you use to chop (wood)?’} \]

\[\text{d. pa-qaniq=si cu nanuwan} \]
\[\text{IRREALIS-eat=2S.ABS OBL what} \]
\[\text{‘What will you eat?’} \]

\(^7\) Only absolutive DPs, ergative DPs and adjuncts (temporal adverbs, for example) can be in topic position. Other DPs cannot be in this position. Consider the following examples:

\[\text{a. } \text{tuti\-un ni Buyung na kahuj i Tali} \]
\[\text{hit-PV ERG Buyung INS woodstick ABS Tali} \]
\[\text{‘Buyung hit Tali with a woodstick.’} \]

\[\text{b. } \text{*kahuj ga tuti\-un ni Buyung i Tali} \]
\[\text{woodstick TOP hit-PV ERG Buyung ABS Tali} \]

\(^8\) ‘=’ stands for cliticization.

\(^9\) See Georgopoulos 1980 for an analysis on gap and resumptive pronoun in Palauan.

\(^{10}\) Nominative case marker. Huang (1995) assumes that ku is a nominative case marker. Tsai (1997) on analyzing another Formosan language, Kavalan, assumes that it is cleft construction where the absolutive DP moves to the initial of the sentence and becomes the predicate of the sentence.
If the wh-word does not take absolutive case, as in (20d,f), it stays in situ. Extracting non-absolutive DPs is ungrammatical, as shown in (20e,g).

I have shown that the absolutive DPs have to be singled out in a higher position. As for which position, Spec of CP or Spec of TP, I suggest, along with Aldridge, that it should be in Spec of CP. Supporting evidence comes from high adverbs that define the TP edge. Absolutive DPs always occur after the adverbs.11

When the absolutive DP presents itself as a bound pronoun, it cliticizes onto the verb; in this case, the adverb cuhisa ‘yesterday’ occurs in sentence-final position, as in (21a). When the absolutive DP is not a bound morpheme, the adverb occurs right before it, as in (21b). Other positions are not allowed, as in (21c,d). (21) shows that the absolutive DPs are outside of the TP domain.12

3.2 Internal order of the DPs with kahabaag and nanaq

As for the internal order of the DPs with the quantifier kahabaag and the reflexive nanaq, I will apply three diagnostics. First, topicalization data suggest that the internal order of the DPs with kahabaag is [kahabaag-case.marker-NP]: when the whole DP with kahabaag is topicalized, the order is [kahabaag-case.marker-NP].13 Consider the following data:

(22) DPs with kahabaag

<table>
<thead>
<tr>
<th>a.</th>
<th>tutiŋ-un</th>
<th>ni</th>
<th>sinse</th>
<th>kahabaag</th>
<th>ku</th>
<th>papatas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>hit-PV</td>
<td>ERG</td>
<td>teacher</td>
<td>all</td>
<td>ABS</td>
<td>student</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b.</th>
<th>tutiŋ-un</th>
<th>kahabaag</th>
<th>ni</th>
<th>sinse</th>
<th>cuhisa</th>
<th>ku</th>
<th>papatas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>hit-PV</td>
<td>all</td>
<td>ERG</td>
<td>teacher</td>
<td>yesterday</td>
<td>ABS</td>
<td>student</td>
</tr>
</tbody>
</table>

a. With kahabaag

11 Yeh (2007) also notes that some informants allow these adverbs to appear freely between constituents. The informant that I worked with consistently put these adverbs before the sentence-final absolutive DP or in sentence-final position when the absolutive DP is a clitic or is topicalized.
12 I assume that the temporal adverb is a right-branching TP adjunct.
13 The quantifier can also be stranded when topicalized.

<table>
<thead>
<tr>
<th>a.</th>
<th>papatas</th>
<th>ga</th>
<th>tutiŋ-un</th>
<th>ni</th>
<th>sinse</th>
<th>kahabaag</th>
</tr>
</thead>
<tbody>
<tr>
<td>student</td>
<td>TOP</td>
<td>hit-PV</td>
<td>ERG</td>
<td>teacher</td>
<td>all</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b.</th>
<th>papatas</th>
<th>ga</th>
<th>tutiŋ-un</th>
<th>kahabaag</th>
<th>ni</th>
<th>sinse</th>
</tr>
</thead>
<tbody>
<tr>
<td>student</td>
<td>TOP</td>
<td>hit-PV</td>
<td>all</td>
<td>ERG</td>
<td>teacher</td>
<td></td>
</tr>
</tbody>
</table>

‘As for students, the teacher hit all of them.’
(23) **DPs with nanaq**

a. "tuti-\-un ni Buyung i hija nanaq\(^{15}\)
   hit-PV ERG Buyung ABS he self
b. tuti-\-un ni Buyung nanaq i hija
   hit-PV ERG Buyung self ABS he
c. *nanaq i hija ga tuti-\-un ni Buyung
   self ABS he TOP hit-PV ERG Buyung
d. *hija nanaq ga tuti-\-un ni Buyung
   he self TOP hit-PV ERG Buyung

‘Buyung hit himself.’

Ergative DPs are another diagnostic, since they do not involve movement. Consider the following data:

(24) **Ergative DPs with kahabaag**

   tuti-\-un [kahabaag nku sinse] i papatas
   hit-PV all ERG teacher ABS student

‘All the teachers hit the student.’

This suggests that the order should be [kahabaag-case.marker-NP]. However, this diagnostic is not available for DPs with nanaq since reflexive anaphors do not occur as agent.

Temporal adverbs are the third diagnostic. Recall that such adverbs define the TP edge. Consider the following data:

(25) a. tuti-\-un ni sinse cuhisa [kahabaag ku papatas]
   hit-PV ERG teacher yesterday all ABS student
‘The teacher hit all the students yesterday.’
b. tuti-\-un ni Buyung cuhisa [i hija nanaq]
   hit-PV ERG Buyung yesterday ABS he self
‘Buyung hit himself yesterday.’

This diagnostic suggests that the internal order for DPs with the quantifier is, again, [kahabaag-case.marker-NP], and for DPs with the reflexive is [case.marker-NP-nanaq].\(^{16}\)

To sum up so far, the sentence-final DP should occupy a higher position in Spec of CP, and the internal order for DPs with the quantifier is [kahabaag-case.marker-NP] and with the reflexive [case.marker-NP-nanaq].

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14 I argue elsewhere (Lu 2009) that DPs with the reflexive anaphor cannot be topicalized because of binding reasons.
15 The downgrading of this sentence disappears when the ergative DP is topicalized.
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Buyung ga tuti-\-un=nja i hija nanaq
Buyung TOP hit-PV=3S.ERG ABS he self
‘As for Buyung, he hit himself.’
16 I will not go into the structure of DP in this paper.
3.3 Mayrinax QS and RS

I have argued that the quantifier and reflexive, moving along with the DPs to sentence-final position, are in Spec of CP. Presumably, the quantifier and reflexive in other positions are stranded on the way to that position. The relevant data are repeated as follows:

\[(26)\]
\[(26)\]  
\(\bar{\text{QS}}\)
\[a.\]
\(\text{tuti-} \text{un ni sinse cuhisa kahabaag ku papatas}\)
\(\text{hit-PV ERG teacher yesterday all ABS student}\)
\[b.\]
\(\text{tuti-} \text{un ni sinse kahabaag cuhisa ku papatas}\)
\(\text{hit-PV ERG teacher all yesterday ABS student}\)
\[c.\]
\(\text{tuti-} \text{un kahabaag ni sinse cuhisa ku papatas}\)
\(\text{hit-PV all ERG teacher yesterday ABS student}\)

‘The teacher hit all the students yesterday.’

\[(27)\]
\[(27)\]
\(\bar{\text{RS}}\)
\[a.\]
\(\text{?tuti-} \text{un ni Buyung cuhisa i hija nanaq}\)
\(\text{hit-PV ERG Buyung yesterday ABS he self}\)
\[b.\]
\(\text{tuti-} \text{un ni Buyung nanaq cuhisa i hija}\)
\(\text{hit-PV ERG Buyung self yesterday ABS he}\)
\[c.\]
\(\text{tuti-} \text{un nanaq ni Buyung cuhisa i hija}\)
\(\text{hit-PV self ERG Buyung yesterday ABS he}\)

‘Buyung hit himself.’

Two positions (except for the sentence-final position, [26a] and [27a]) of the quantifier and the reflexive need to be accounted for. Presumably, one is the base position, and the other is the position that the DP passes through when it moves up to Spec CP. The rightward movement of DPs in GHT’s model and VP movement in Massam’s model do not predict the distribution of kahabaag/nanaq. Only two positions are predicted in their models.

To derive V initial word order, I assume a V to T movement with a TP remnant movement (as suggested by Aldridge [2004] and Pearson [2001]). The TP remnant movement is also supported by the sentence-final questions particle quw. Assuming that quw is located in C, the movements of both the absolutive DP and the remnant TP put the particle in sentence-final position.\(^{17}\)

\[(28)\]
\[(28)\]
\[a.\]
\(\text{al-un ni Yumin ku rahuwal quw}\)  \((\text{Huang 1995: 176})\)
\(\text{take-PV ERG Yumin ABS big Q}\)

‘Did Yumin take the big one?’
\[b.\]
\(ma-qilaap i yaya quw\)  \((\text{Huang 1995: 176})\)
\(\text{AV-sleep ABS mother Q}\)

‘Is Mother sleeping?’

We predict that the quantifier/reflexive is stranded in the base position in (26b) and (27b), as shown in the following structure where kahabaag and nanaq follow the Agents sinse and Buyung.

(Assuming Uniformity of Theta-Assignment Hypothesis, Theme is merged earlier than Agent.)

\(^{17}\) The position of question particles is used for similar phrasal remnant movement in another Austronesian language, Marshallese. See Willson (2007).
This structure only explains the positions in (26a,b) and (27a,b). It does not yet explain the post-verbal intermediate positions in (26c) and (27c). Also, another puzzle is that, assuming a probe-goal relation between C and the target, it should be the ergative DP that gets probed by C since it is closer to the probe. The ergative DP is higher in the structure (closer to C⁰). Moving the absolutive DP across the ergative DP would violate superiority.

Here, I adopt Aldridge’s proposal (following Chomsky’s [2001] Object Shift analysis) that vp is a phase, and the absolutive DP has to move through the edge of vp (via EPP feature on v⁰) before moving out. By adopting this idea, we can set up the probe-goal relation between C and the absolutive DP, and the post-verbal (before the ergative DP) quantifier position is also explained.

(29) TP remnant movement

(30) Post-verbal stranding position via TP remnant movement
Assuming that movement is phase-bound, we can explain why wh-movement and topicalization only target absolutive DPs: when a WH feature/TOP feature probes from the CP level, only the absolutive DP is available. Other DPs are closed off before the CP phase (Phase Impenetrability Condition, PIC [Chomsky 2001]). This analysis also coincides with Rackowski and Richards’s (2005) proposal in which they show that there is an EPP feature on that pulls up the agreeing DP to the edge of vP.18 Only this DP at the phase edge can undergo further movement.

As for the motivation for the TP remnant movement, the PF constraint that forbids DPs in a phase edge (Aldridge 2004) does not work in Mayrinax since topicalizing or wh-moving a DP to the left edge is allowed. Aldridge suggests that (personal communication) the motivation may be focus. In another Atayalic language, Seediq, the moved TP gets a focus/new information reading.

To summarize, three positions of kahabaag/nanaq are explained: the sentence-final quantifier/reflexive position is derived by moving the absolutive DP all the way up to Spec of CP without stranding; the position after the ergative DP is when kahabaag and nanaq are stranded in the base position; the post-verbal position is an intermediate Spec of vP position.

4 Conclusion

In this paper, I began with the observation that the quantifier kahabaag ‘all’ and the reflexive nanaq ‘self’ surface in three positions: (i) with their sentence-final absolutive argument, (ii) in a post-verbal position, and (iii) following the ergative argument. I showed data from scrambling, topicalization and wh-movement that suggest that the previously proposed VP movement (Massam 2000) and right-branching IP/TP (GHT 1992) cannot explain all of these positions. Rather the data support a derivation whereby an absolutive DP moves to a higher Spec of CP position via an intermediate Spec of vP position, followed by remnant TP movement. Position (i) is derived when the kahabaag and nanaq move with the absolutive DP all the way to Spec of CP; position (ii) is derived when they are stranded in their base position, and position (iii) is derived when they are stranded in the intermediate Spec of vP position.

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18 They support the argument by providing comparison of Tagalog and Germanic languages with object shift. The movement of DP to the vP edge is driven by EPP feature on for the correct semantic interpretation.
References


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