Syntactic ergativity in Nukuoro[1]

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1   Introduction

- There are two major generalizations that have been made about ergative typology:

  (1) **Dixon's (1994) generalization**
  No language is ergative at the syntactic level but not the morphological level.

  (2) **Mahajan's (1994, 1997) generalization**
  Ergative languages exhibit SOV and VSO order, but not SVO.

- Dixon's generalization is problematic for analyses of Case and syntactic ergativity.

  - Analyses of ergative extraction restrictions typically appeal to abstract Case (e.g., Bittner & Hale 1996a; Coon et al. 2014; Assmann et al. 2015; Polinsky 2016; Deal 2017; Tollan & Clemens 2020).
  - Abstract Case features can easily go unrealized (e.g., Legate 2008), and abstract Case has been argued to be universal, even in languages that don't mark it overtly (e.g., Sheehan & van der Wal 2016).
  - Polinsky (2017): "assuming that all languages have abstract [C]ase, it is unclear why there cannot be syntactic ergativity without morphological ergativity."

- Mahajan's generalization seems fairly robust, and is typically accounted for by appealing to case assignment and clause structure mechanisms (i.e., that Infl does not have an EPP feature in ergative languages).

- Using primary field data, I show that Nukuoro (Polynesian Outlier; Micronesia) constitutes an apparent exception to both of these generalizations:

  - Nukuoro shows an ergative extraction restriction, but no morphological ergativity.
  - Nukuoro has ergativity and basic SVO word order.

  (3) De gauligi ne doolohi de gaagoo.
  DET child PFV chase DET chicken
  'The child chased the chicken.'

  (4) a. Go ai a Soni ne doolohi?
  FOC who GEN Johnny PFV chase
  'Who did Johnny chase?'

  b. Go ai ne *doolohi / **dolohia** (**ina**) de gaagoo?
  FOC who PFV chase chase.CIA INA DET chicken
  'Who chased the chicken?'

- Despite this unusual cluster of properties, I argue that the Nukuoro pattern can be assimilated to well-established analyses of syntactic ergativity.

  - I argue that the Nukuoro ergative extraction restriction arises as a result of systematic object inversion over the subject, which prevents subject Ā-extraction by intervening between the subject and the higher probe (e.g., Aldridge 2004; Coon et al. 2021).
  - Repairs for ergative extraction prevent inversion by licensing the object lower than the subject.

- ▶ I show that abstract absolutive Case assignment underlies the Nukuoro extraction restriction, which allows us to recast Dixon's generalization in terms of abstract Case, rather than morphological case.

- Pre-verbal subjects present an apparent paradox for an object inversion analysis: the object intervenes for subject Ā-dependencies but not A-dependencies, reversing the canonical locality properties of movement.

  - I account for this paradox by manipulating probe *satisfaction conditions*, adopting an Interaction-Satisfaction model of Agree (Deal 2015) and a featural view of the A/Ā distinction (Van Urk 2015).
  - Ā-probes are satisfied by [D] or [Ā], causing them to halt when they encounter the high object.
  - A-probes are *insatiable*, and will interact with every nominal in their domain.

- ▶ I show that Nukuoro clause structure combines familiar verb-initial syntax with an unusual type of mono-clausal control, allowing us to maintain the core concept behind Mahajan's generalization.

- Structure of this talk:

  - Basics of Nukuoro clause structure
  - Ergative properties of Nukuoro
  - Accounting for the extraction restriction
  - The nature of pre-verbal subjects
  - Wrap-up

2   Nukuoro clause structure

- Nukuoro is a Polynesian Outlier language spoken by about 1,200 people in the Federated States of Micronesia (FSM), Guam, and the United States (Drummond and Rudolph 2021).

  - The Polynesian Outliers are a geographically-defined group of languages which are spoken outside of core Polynesia (i.e., the Polynesian Triangle, bounded by New Zealand, Hawai'i, and Easter Island).
  - These languages are quite diverse and divergent from the rest of the family, reflecting contact with neighboring non-Polynesian Oceanic languages (e.g., Micronesian languages).

- Unless otherwise cited, all Nukuoro data presented in this paper were collected during ongoing fieldwork in Pohnpei, FSM (and over Zoom) with three speakers of Nukuoro (2015-present).[2]

2.1 Structure of matrix clauses

- The basic word order in Nukuoro matrix clauses is SVO, as shown in (5).

    - Most other Polynesian languages (e.g., Maori, Tongan, Samoan) have verb-inital word order.

    - In the Polynesian Outliers, basic SVO order is thought to have developed via a left-edge topic position; this will become relevant for our discussion of pre-verbal subjects in §5.

    (5) De gauligi ne lingi de   koovee.
         DET child   PFV spill DET coffee
         'The child spilled the coffee.'

- Verb-initial orders are found in other types of clauses, namely polar questions and adjunct clauses.[3]

    (6) Ga   tilo   naa huu **gidaadeu** de   ango...
         PRSP look.at when?   1PL.INCL   DET pearl
         'When we look at the pearl...'   [adjunct clause]

    (7) Ne llanga **goe** denga gede?
         PFV weave 2SG   DET.PL basket
         'Did you weave the baskets?'   [polar question]

- Nukuoro clause structure involves predicate fronting, where the remnant VP moves to a clause-medial position (Massam 2001; Collins 2017; van Urk 2019).

    - DP objects vacate the VP before predicate fronting occurs, moving to an outer specifier of VoiceP.[4]

    - The VP then fronts to the specifier of a functional projection just below Infl, which I label FP.

(8)
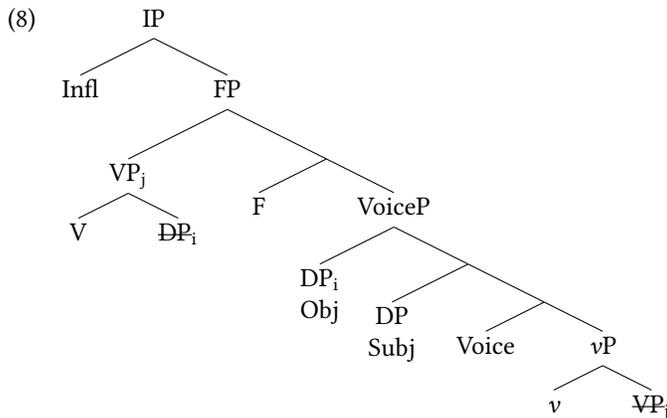
- The hallmark of VP-fronting in these languages is the appearance of post-verbal particles, which obligatorily occur between the verb and its argument(s).

    - All VP-internal material appears in this position, including directionals (9a), VP adjuncts (9a), and the oblique anaphoric pronoun *ai*, which stands in for PPs (9b).

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[3]Verb-initial orders are also occasionally found in matrix clauses, and seem to be more acceptable for intransitive clauses (with no distinction between unaccusative and unergative verbs). However, the acceptability of verb-initial matrix clauses varies across speakers and even for a single speaker on different days; I leave this variation aside for now.

[4]I adopt a split VoiceP-vP structure (e.g., Pylkkanen 2002; Harley 2013; Legate 2014) to capture co-occurring instances of verbal morphology, namely the causative *haga-*, which is a realization of Voice^0, and the suffix *-(C)ia*, a type of v^0 which licenses internal arguments and moves them to its specifier.

(9)   a. Au ne [_VP_ dugu **ange maalie**] de   beebaa gi honga teebele.
          1SG PFV   put DIR slowly   DET book   to top DET.table
          'I slowly put the book on the table.'

      b. Au ne [_VP_ dugu **ai**]   de   beebaa.
          1SG PFV   put OBL.PRO DET book
          'I put the book there.'

- Evidence that the object has vacated this VP comes from pseudo noun incorporation (PNI).

    – Bare NPs may pseudo incorporate and remain within the VP, appearing in their base position between the verb and any post-verbal particles (10).

(10) a. Deelaa de hale o   tamaahine e   [_VP_ tilo   ai] **denga dama**.
          DEM.SG DET house GEN DET.girl   NPST   watch OBL.PRO DET.PL baby
          'That's the house where the girl takes care of the babies.'

      b. Deelaa de hale o   tamaahine e   [_VP_ tilo   **dama** ai].
          DEM.SG DET house GEN DET.girl   NPST   watch baby   OBL.PRO
          'That's the house where the girl takes care of babies.'

- Crucially, the object moves to a position above the subject, as evidenced by the lack of weak crossover in matrix clauses and subject quantifier float.

- Nukuoro shows no weak crossover effect in matrix clauses (11), which is characteristic of languages with A-scrambling (e.g., Hindi, Mahajan 1990; Tongan, Clemens & Tollan 2021).

    – The _wh_-object moves above the subject before it undergoes Ā-movement, allowing the object to bind the pronoun inside the subject DP.

(11) Go ai$_i$ o   dono$_i$ dinana ne buuludi ange laa?
      FOC who GEN DET.3SG.GEN mother PFV hug   DIR DIST
      'Who$_i$ did their$_i$ mother hug?'
      Reading: Who is it such that their mother hugged them?

(12) Schema of weak crossover obviation

- Since A-movement is clause-bounded, this weak crossover obviation should only occur within a single clause.

- As expected, when the _wh_-phrase originates in an embedded clause, binding into the matrix subject remains impossible and weak crossover reemerges (13).

    – Note that without binding, the syntax of the question itself is well-formed (14).

(13) *Go ai$_i$ a   dono$_i$ dinana ne hai laa [bolo e   seni]?
      FOC who GEN DET.3SG.GEN mother PFV say Q   that NPST sleep
      'Who$_i$ did their$_i$ mother say is sleeping?'
      Reading: Who is it such that their mother said they are sleeping?

(14) Go ai aana   ne hai laa [bolo e   seni]?
      FOC who 3SG.GEN PFV say Q   that NPST sleep
      'Who did she say is sleeping?'

- Additionally, subject quantifiers float naturally in a position after the DP object.

    – Assuming that floated quantifiers can only appear in intermediate positions of movement, the subject must appear below the object at some point in the derivation.

4

(15) **Alodahi denga gauligi** ne nengenenge taane laa.
all   DET.PL child   PFV tickle   DET.man that
'All the children tickled that man.'   [unfloated]

(16) **Denga gauligi** ne nengenenge taane laa **alodahi**.
DET.PL child   PFV tickle   DET.man DIST all
'The children all tickled that man.'   [floated]

2.2   Relative clauses and pseudoclefts

- Nukuoro uses a genitive relative clause, where the subject of the relative clause appears in genitive case (17). This strategy is found across Polynesian (Otsuka 2010a; Herd et al. 2011; Potsdam & Polinsky 2011).

  - Genitive case is marked by a distinct set of pronouns or the particle *a/o* before full DPs and proper nouns.[5]
  - These constructions do not use a complementizer.

(17) a. de masovaa **o**   **de gauligi** ne seesee ai
     DET time   GEN DET child   PFV walk   OBL.PRO
     'the time that the child walked'

     b. de masovaa **a**   **de gauligi** ne saabai ai   de gede
     DET time   GEN DET child   PFV carry OBL.PRO DET basket
     'the time that the child carried the basket'

- If the subject is relativized, no argument appears in genitive case, making these relatives identical in form to matrix clauses (18).

(18) a. Au ne gidee [de hine   ne baguu].
     1SG PFV see   DET woman PFV fall
     'I saw the woman that fell.'

     b. De hine   ne baguu.
     DET woman PFV fall
     'The woman fell.'

- *Wh*-questions and focus constructions use a pseudocleft structure: the wh/focus element is a predicate, which takes a headless relative clause as its subject (Drummond to appear).

(19) [Go ai_i] [Ø aau   ne gidee t_i]?
     FOC who   2SG.GEN PFV see
     'Who did you see?'   [*wh*-question]

(20) [Go taane laa_i] [Ø aagu   ne gidee t_i].
     FOC DET.man DIST   1SG.GEN PFV see
     'It's that man that I saw.'   [focus]

- As such, the relevant type of Ā-movement in *wh*-questions and focus constructions is relativization.

  - I assume relativization involves movement of a relative operator to the specifier of CP (21).
  - The relative C head in Nukuoro is obligatorily null.
  - For now, I set aside the question of genitive subjects and save it for §5.

(21) de hine   [$_{CP}$ OP_i C [ne baguu t_i]]
     DET woman   PFV fall
     'the woman that fell'

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[5]The choice of *a* vs. *o* in nominal possession indicates alienability, with *a* marking alienable possession. In relative clauses, this choice reflects agentivity of the relative subject, with *a* marking agentive subjects (Drummond 2016).

- Evidence that relative clauses involve movement comes from their sensitivity to islands, such as complex NPs (22) and coordinate structures (23).

(22) * Go ai_i a Soni gu langona [hanu munalongo bolo Mina gu hagaili *t*_i]?
FOC who GEN Johnny INC hear some rumor that Mina INC slap
Intended: 'Who did Johnny hear a rumor that Mina hit?' [complex-NP]

(23) * Go stoosaa hee_i a Mina ne hagao [dahi hale ma *t*_i] anaahi?
FOC car which GEN Mina PFV buy one house and yesterday
Intended: 'Which car did Mina buy a house and yesterday?' [coordination]

- As a final note, oblique relativization in Nukuoro (like in all Polynesian languages) requires resumption using the oblique anaphoric pronoun *ai*, which appears in the post-verbal position.

(24) a. Au ne gaav-ange de beebaa gi Ruth.
1SG PFV give-DIR DET book to Ruth
'I gave the book to Ruth.'

b. Go ai aau ne gaav-ange *(**ai**) de beebaa?
FOC who 2SG.GEN PFV give-DIR OBL.PRO DET book
'Who did you give the book to?

3 Ergativity in Nukuoro

- This section lays out the ergative properties of Nukuoro, namely the lack of morphological ergativity and the presence of an ergative extraction restriction.

3.1 No morphological ergativity

▶ Though historically ergative, Nukuoro does not show morphological ergativity in case marking or agreement.[6]

- The only morphologically-realized case in the language is genitive.
- In the three core grammatical roles, pronominal and full DP arguments must appear unmarked.[7]

(25) a. **Au** ne seni.
1SG PFV sleep
'I slept.'

b. Soni ne doolohi **au**.
Johnny PFV chase 1SG
'Johnny chased me.'

c. **Au** ne doolohi Soni.
1SG PFV chase Johnny
'I chased Johnny.'

(26) a. **De gauligi** ne seni.
DET child PFV sleep
'The child slept.' (S)

b. Soni ne doolohi **de gauligi**.
Johnny PFV chase DET child
'Johnny chased the child.' (O)

c. **De gauligi** ne doolohi Soni.
DET child PFV chase Johnny
'The child chased Johnny.' (A)

- Nukuoro also does not mark case relations through head-marking.

- As we saw in the above examples, Nukuoro verbs generally do not agree with their arguments.

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[6]Historically, Nukuoro showed ergative case marking on post-verbal pronominal subjects, a case marking pattern which is found across the Polynesian Outliers (Chung 1978). In Nukuoro narratives recorded by elderly speakers in 1966 (Carroll 1980), this marking is used variably on any post-verbal pronominal subject, transitive or intransitive, suggesting that it had lost its ergative function by that point. For my speakers, this marking is not present in their grammar at all.

[7]This includes suprasegmental marking: Nukuoro does not show tonal marking of absolutive case, as has been argued for Sāmoan (Yu 2021).

- A subset of Nukuoro intransitive verbs show participant number marking (Durie 1986; Corbett 2000), where verbs indicate plurality of their closest argument through suppletion or reduplication (27).

    – However, participant number is widely accepted to be distinct from canonical verbal agreement carried out by Agree (Bobaljik & Harley 2017; Drummond 2020).[8]

    – In any case, participant number only references intransitive subjects in Nukuoro, and thus does not have an ergative distribution (28).

(27) a. Ia gu **seni**.
3SG INC sleep
'S/he fell asleep.'

b. Gilaadeu gu **sseni**.
3PL INC sleep.PL
'They fell asleep.'

(28) a. Denga hadu gu **tige**.
DET.PL stone INC roll.PL
'The stones rolled.'

b. Gilaadeu gu haga-**dige** denga hadu.
3PL INC CAUS-roll.SG DET.PL stone
'They rolled the stones.'

3.2 Syntactic ergativity

▶ Nukuoro shows differential syntactic treatment of ergative subjects in Ā-movement (i.e., syntactic ergativity).

- Intransitive subjects and transitive objects can undergo unmarked Ā-movement in Nukuoro (29).

(29) a. Go ai e anu naa?
FOC who NPST dance MED
'Who is dancing?'   (S)

b. Go ai a de gauligi ne tugi laa?
FOC who GEN DET child PFV hit DIST
'Who did the child hit?'   (O)

- Transitive subjects, however, cannot undergo this same unmarked movement (30a); instead, an additional *-Cia* suffix plus the postverbal particle *ina* must appear on the verb (30b).

    – *-Cia* is a highly idiosyncratic verbal suffix, where C is a lexically specified consonant.

    – The invariant particle *ina* is optional if the verb has a suppletive *-Cia* form, and obligatory if it does not.

(30) a. *Go ai ne dolohi Soni?
FOC who PFV chase Johnny
'Who chased Johnny?'

b. Go ai ne **dolohia** (**ina**) Soni?
FOC who PFV chase.CIA INA Johnny
'Who chased Johnny?'   (A)

- This restriction holds in *wh*-questions as well as relative clauses (31) and focus constructions (32).

(31) Au ne gidee tangada ne **unu ina** denga vai.
1SG PFV see DET.person PFV drink INA DET.PL water
'I saw the person who drank the water.'   [relative]

(32) Go Sigi ne **dolohia** (**ina**) denga gaagoo.
FOC Sigi PFV chase.CIA INA DET.PL chicken
'It was Sigi who chased the chickens.'   [focus]

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[8]Participant number has been more fruitfully analyzed as i) a set of verbs which can only compose with a plurality, such as English *scatter* or *gather* (e.g., Mithun 1988; Corbett 2000), ii) local root suppletion conditioned by number features (Bobaljik & Harley 2017), or iii) the realization of a verb-internal number projection (Thornton 2018, 2020; Drummond 2020).

- This restriction holds of all and only syntactically transitive constructions (i.e., those that have DP objects).

- *-Cia* + *ina* is obligatory for extraction of the subject of ditransitives (33) and derived transitives (34), which are formed by adding the causative prefix *haga-* to an intransitive verb.

  (33) Go ai   ne gaavange **ina** de   beebaa gi Soni?
       FOC who PFV give   INA DET book   to Johnny
       'Who gave the book to Johnny?'

  (34) Go ai   e   haga-baguu **ina** ia?
       FOC who NPST CAUS-fall   INA 3SG
       'Who tripped him?'

- By contrast, *-Cia* + *ina* cannot appear when the subject of an intransitive (unergative) verb is extracted (35a), nor can it appear with "middle" verbs, which are notionally transitive but select for PP objects (35b).

  - This indicates that the restriction is sensitive to grammatical structure, not notional or thematic roles.

  - Specifically, the restriction only arises when there is a DP object.

  (35) a. Go ai   e   gadagada (*ina) naa?
           FOC who NPST laugh   INA MED
           'Who is laughing?'   [intransitive]

        b. Go ai   e   dele (*ina) i   de moni?
           FOC who NPST sail INA PREP DET canoe
           'Who is sailing the canoe?'   [middle]

- Finally, long-distance Ā-movement of an embedded transitive subject requires *-(C)ia* + *ina* on the embedded verb, but not on the matrix verb.

  - The restriction affects only those transitive verbs whose subjects are extracted, not all clauses that Ā-movement proceeds through.

  (36) Go ai   aana   ne maanadu laa [bolo ne **buuludi ina** ange Johnny]?
       FOC who 3SG.GEN PFV think   Q   that PFV hug   INA DIR Johnny
       'Who does s/he think hugged Johnny?'

  (37) Go ai   aau   ne gidee laa [e   **dolohia (ina)** Soni]?
       FOC who 2SG.GEN PFV see   Q   NPST chase.CIA INA   Johnny
       'Who did you see chasing Johnny?'

▶ Transitive subjects (i.e., ergative arguments) are barred from undergoing unmarked Ā-movement.

3.3 More about *-(C)ia* + *ina*

- The Polynesian **-(C)ia* suffix generally has a function related to transitivity or passivization, and has been described as indicating that the object is more "affected" (Chung 1978; Cook 1996; Pawley 2001; Otsuka 2012).

- In Nukuoro, *-(C)ia* + *ina* morphology appears in three environments in addition to ergative extraction:[9]

  - Passives (38)
  - Transitive imperatives (39)
  - Transitive non-finite clauses (40)

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[9]In Sāmoan, which is somewhat closely related to Nukuoro, *-(C)ia* appears under verbal negation and in alternations between pseudo-transitive constructions (i.e., "middles") and ergative transitive constructions. Neither of these functions is found in Nukuoro: *-(C)ia* doesn't appear under negation, and cannot appear on a middle verb to transitivize it.

(38) a. Soni   gu hagaduu dogu hale.
        Johnny INC build   my   house
        'Johnny built my house.'

     b. Dogu hale   ne **hagaduulia ina** (i   Soni).
        my   house PFV build.CIA   INA OBL Johnny
        'My house was built (by Johnny).'

(39) *Gaiaa / **Gaiaadia (ina)** hanu mee!
     steal   steal.CIA INA   some thing
     'Steal something!'

(40) Au e   lodo Ruth gi *llanga / **llaanga   ina** dahi gede.
     1SG NPST want Ruth INF weave   weave.CIA INA one basket
     'I want Ruth to weave a basket.'

- It might be tempting to say that *-(C)ia + ina* is simply a realization of passive Voice, which obviates ergative extraction by demoting the agent to a prepositional phrase.

  - Cross-linguistically, repairs for ergative extraction tend to detransitivize the clause in some way, typically using an antipassive or something similar (e.g., West Greenlandic, Bittner 1994; Mayan, Coon et al. 2021).
  - Passives are used to obviate ergative extraction restrictions in some Salishan languages (Davis et al. 1993).

- However, I'll show that the function of *-(C)ia + ina* in ergative extraction contexts is not passive.

  - In other words, *-(C)ia + ina* does not passivize clauses to allow ergative extraction.

- Nukuoro allows extraction of demoted agents of passives, as shown in (41).

  - Like all oblique extraction, extraction of demoted agents requires the oblique resumptive pronoun *ai*.
  - Furthermore, the promoted patient is marked with genitive case, which is only possible for subjects of relative clauses.

(41) a. Soni   ne duugia ina i   Minaa.
        Johnny PFV hit.CIA INA LOC Mina
        'Johnny was hit by Mina.'

     b. Go ai   **o Soni**   ne duugia ina **ai**   laa?
        FOC who GEN Johnny PFV hit.CIA INA OBL.PRO Q
        'Who was Johnny hit by?'

- By contrast, ergative extraction clauses do not show either of these properties.

  - The patient argument cannot appear pre-verbally in genitive case (42b).
  - Extracted ergatives cannot use the resumptive pronoun *ai* (42c).

(42) a.   Go ai   ne duugia ina Soni?
           FOC who PFV hit.CIA INA Johnny
           'Who hit Johnny?'

     b. * Go ai   **o Soni**   ne duugia ina?
           FOC who GEN Johnny PFV hit.CIA INA
           'Who hit Johnny?'

     c. * Go ai   ne duugia ina **ai**   laa Soni?
           FOC who PFV hit.CIA INA OBL.PRO Q   Johnny
           'Who hit Johnny?'
           JR: "The *ai* should not be in there."

- This behavior suggests that the function of *-(C)ia* must be common to both ergative extraction and passives, but cannot be described as passive voice in both contexts.

4 Analysis

- Despite the typologically rare properties described above, I argue that the Nukuoro ergative extraction is derived by familiar mechanisms, namely absolutive object shift and mixed A/Ā-movement.

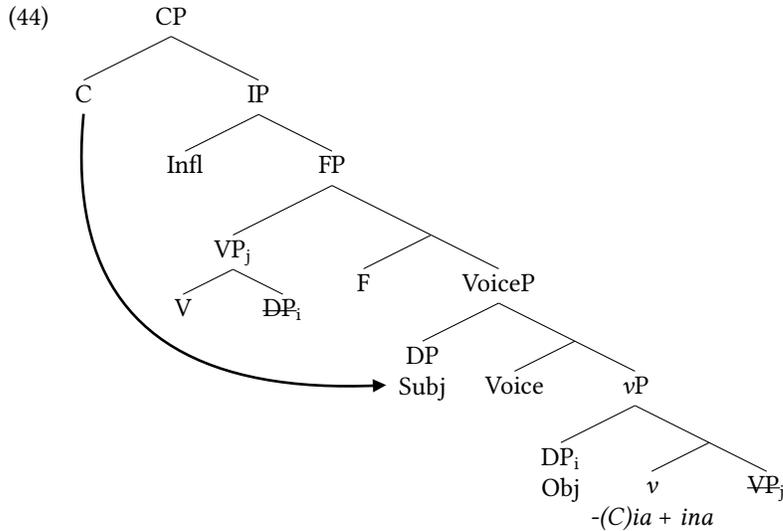- I analyze the Nukuoro pattern using an *object inversion* analysis, where a derived high structural position for the object intervenes for subject Ā-extraction (Campana 1992; Ordóñez 1995; Bittner & Hale 1996a; Aldridge 2004, *et seq*; Coon et al. 2014; Assmann et al. 2015; Tollan & Clemens 2020; Coon et al. 2021).

    - The object intervenes between C and the transitive subject, preventing the two from forming an Ā-dependency (43).
    - This account is consistent with the evidence for high object movement in Nukuoro, provided in §2.

(43)
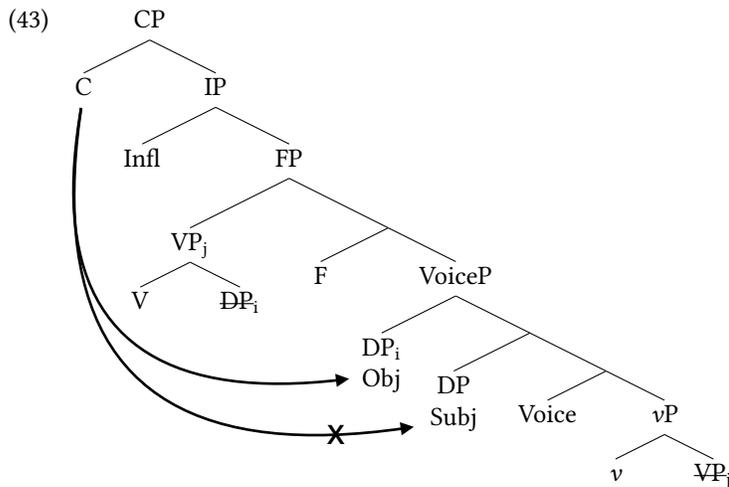
- While there are many accounts for how the configuration in (43) prevents subject extraction, I adopt an account in which Ā-movement is sensitive to nominal locality (e.g., Aldridge 2004, 2008, 2012; Legate 2012; Douglas 2018; Coon et al. 2021; Branan & Erlewine 2022) and may only target the highest nominal in its search domain.

    - In other words, Ā-movement in Nukuoro is sensitive to [D] features and is an example of mixed A/Ā-movement (e.g., Van Urk 2015; Bossi & Diercks 2019; Branan & Erlewine 2022).

- This restriction can be obviated by licensing the object in a low position, preventing high object movement.

    - I analyze -(C)ia + ina as a flavor of v, which licenses the object and moves it to its specifier (44).
    - With the object below the subject, the subject is now accessible for Ā-movement to C.

(44)

```
                    CP
                  /    \
                 C      IP
                 |     /   \
                 |   Infl   FP
                 |        /    \
                 |      VPⱼ      \
                 |     /  \       \
                 |    V   D̶P̶ᵢ    F    VoiceP
                 |                  /        \
                 |                 DP         \
                 └───────────────> Subj  Voice   vP
                                              /        \
                                           DPᵢ          \
                                           Obj    v      V̶P̶ⱼ
                                              -(C)ia + ina
```

- Another means of licensing the object low is through pseudo noun incorporation, which obviates the ergative extraction restriction without using *-(C)ia + ina* (45).

    – This shows us that ergative extraction is about properties of the object, not the subject.

    (45) a. Go tamaa   gauligi laa   e   [ᵥₚ gai **ina**] **denga gahudi** i   masoaa alodahi.
              FOC DET.child small   DIST NPST   eat INA   DET.PL banana PREP time   all
              'It's that child who eats the bananas all the time.'

          b. Go tamaa   gauligi laa   e   [ᵥₚ gai **gahudi**] i   masoaa alodahi.
              FOC DET.child small   DIST NPST   eat banana   PREP time   all
              'It's that child who eats bananas all the time.'

- I argue that object inversion in Nukuoro is driven by a need for absolutive Case licensing, despite a lack of realization of absolutive Case in the morphology.

    – Ergative case is assigned to the transitive subject in its base position (e.g., the inherent ergative view; Woolford 1997, 2006; Aldridge 2004; Legate 2006, 2008).

    – The object must move into a local configuration with Infl to receive absolutive Case (ABS = NOM; e.g., Campana 1992; Murasugi 1992; Bittner 1994; Bittner & Hale 1996a,b; Ura 2001; Legate 2008).

- Finally, I show how the characterization of *-(C)ia + ina* as a case licenser explains its presence in passives.

- For now, we'll set aside the question of pre-verbal subjects and pick it up again in §5.

4.1 Syntactic ergativity and abstract Case

- I provide two pieces of evidence for a Case-licensing account of object shift:

    – NP objects can optionally shift, but DP objects obligatorily shift.

    – When Case-assigning Infl is absent (i.e., non-finite clauses and imperatives), *-(C)ia + ina* must be present to license the object.

- While NP objects can appear inside or outside of the VP (46), DP objects *cannot* remain inside the VP, suggesting that they are not licensed in this position (47).

(46) a. Deelaa de hale oogu e [VP dunu ai] **mamu**.
DEM.SG DET house 1SG.GEN NPST cook OBL.PRO fish
'That's the house where I cook fish.'

b. Deelaa de hale oogu e [VP dunu **mamu** ai].
DEM.SG DET house 1SG.GEN NPST cook fish OBL.PRO
'That's the house where I cook fish.'

(47) a. Deelaa de hale oogu e [VP dunu ai] **denga mamu**.
DEM.SG DET house 1SG.GEN NPST cook OBL.PRO DET.PL fish
'That's the house where I (will) cook fish.'

b. *Deelaa de hale oogu e [VP dunu **denga mamu** ai].
DEM.SG DET house 1SG.GEN NPST cook DET.PL fish OBL.PRO
'That's the house where I (will) cook the fish.'

- This pattern can be attributed to different licensing requirements on DPs and NPs.

  – DPs are only licensed if they vacate the VP, suggesting that they move in order to receive Case.

  – NPs cannot receive Case, and thus are licensed in either position.

- When finite Infl is absent, we predict that alternative licensing strategies should appear to license the object.

▶ This is borne out in Nukuoro: in addition to ergative extraction contexts, *-Cia + ina* appears in all transitive non-finite clauses.

  – This suggests that finite Infl is responsible for assigning Case to internal arguments, and that *-Cia + ina* provides Case to internal arguments when finite Infl is unavailable.

  – This pattern is highly reminiscent of a similar pattern documented in Q'anjob'al, which Coon et al. (2014) also attribute to low object licensing.

- Nukuoro shows a distinction between finite and non-finite complement clauses.

  – Finite complements require the complementizer *bolo* and use any aspect marker (48a).

  – Non-finite complements have an optional complementizer and use the infinitive TAM marker *gi* (48b).

(48) a. Ia e lodo bolo Soni e anu.
3SG NPST want C Johnny NPST dance
'S/he wants Johnny to dance.' [finite]

b. Ia e lodo (bolo) Soni gi anu.
3SG NPST want C Johnny INF dance
'S/he wants Johnny to dance.' [non-finite]

- As predicted, transitive non-finite clauses lack finite Infl and thus fail to license both arguments.

  – *-Cia + ina* is obligatory to provide alternative licensing for the object.

(49) a. Au ne dugu (bolo) Mina gi *hudi / **huudia** (ina) dahi mamu.
1SG PFV allow C Mina SBJV catch / catch.CIA INA one fish
'I allowed Mina to catch a fish.'

b. Ruth e lodo (bolo) au gi **buuludi** *(ina) ange Soni.
Ruth NPST want C 1SG SBJV hug INA DIR Johnny
'Ruth wants me to hug Johnny.'

- Similarly, transitive imperatives lack inflectional marking entirely and also require *-(C)ia + ina.*

(50) a. *Gaiaa / **Gaiaadia** (**ina**) hanu mee!
     steal   steal.CIA INA some thing
     'Steal something!'

  b. *Poo   / **Boogia**   (**ina**) age ssingilidi laa.
     pick.up pick.up.CIA INA up DET.shirt DIST
     'Pick up that t-shirt!'

- Coon et al. (2014) use the same logic to explain the distribution of the morpheme *-on* in Q'anjob'al, which appears in ergative extraction and transitive non-finite contexts (51).

(51) Q'anjob'al ergative extraction and transitive non-finite clauses

  a. Maktxel max-ach il-**on**-i?
     who   ASP-2ABS see-ON-ITV
     'Who saw you?'

  b. Chi uj   [hach y-il-**on**-i].
     ASP be.able 2ABS 3ERG-see-ON-ITV
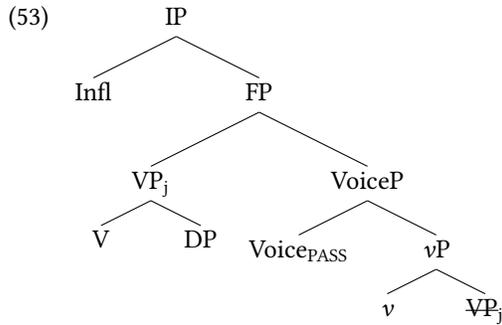   'She can see you.'   (Coon et al. 2014:1)

- Both Q'anjob'al *-on* and Nukuoro *-(C)ia + ina* appear in these two seemingly disparate environments to assign Case to the internal argument when Case is otherwise unavailable.

  – Ergative extraction contexts: Case assignment from Infl would prevent subject extraction
  – Non-finite contexts: Finite Infl is not present to assign Case

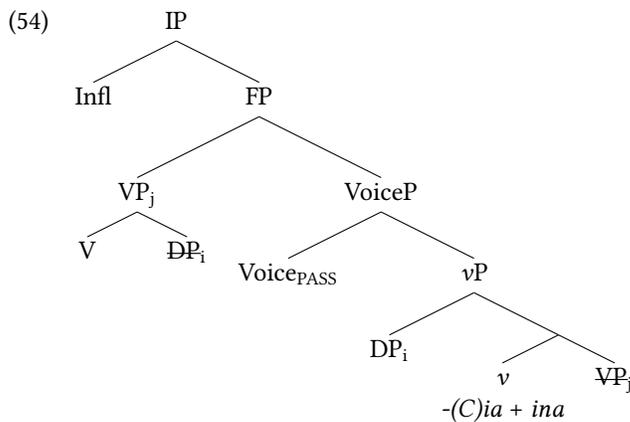## 4.2   Passive use of *-(C)ia + ina*

- I've shown that *-(C)ia + ina* licenses the object in a position lower than the subject, which seems at odds with its use in passive constructions.

  – However, *-(C)ia + ina* does license and promote the object, which is standard in passives.

- Nukuoro passives involve promotion of the object and demotion of the subject to an optional oblique, marked using the general preposition *i* (52).

(52) a. De gaaduu ne doolohi tangada   laa.
        DET dog   PFV chase   DET.person DIST
        'The dog chased that person.'

  b. Tangada   laa ne **dolohia** (**ina**) (i   de gaaduu).
     DET.person DIST PFV chase.CIA INA   PREP DET dog
     'That person was chased (by the dog).'

- I propose that passivization involves the use of a passive Voice head, which (i) does not introduce an external argument and (ii) does not trigger movement of the object to its specifier (53).

  – If passive Voice is merged, the DP object will remain inside the VP, where it cannot get Case (cf. (47)).
  – Furthermore, if the object remains inside the VP when it fronts, it will be ineligible for further A-dependencies (i.e., Criterial Freezing; Rizzi 2006, 2010).

(53)

```
            IP
          /    \
       Infl     FP
              /    \
          VPⱼ       VoiceP
         /   \      /     \
        V    DP  Voice_PASS  vP
                          /   \
                         v    V̶P̶ⱼ
```

- Instead, passive Voice selects the *-(C)ia + ina* flavor of v, which licenses and promotes the object (54).

    – This structure allows the object to receive Case and be accessible for further A-dependencies, namely pre-verbal subjecthood (which we'll explore in §5).

(54)

```
               IP
             /    \
          Infl     FP
                 /    \
             VPⱼ       VoiceP
            /   \      /     \
           V   D̶P̶ᵢ  Voice_PASS  vP
                              /   \
                            DPᵢ    / \
                                  v   V̶P̶ⱼ
                              -(C)ia + ina
```

4.3   Interim summary

- I've argued that Nukuoro syntactic ergativity arises as a result of obligatory object shift above the subject.

    – The ergative extraction restriction is sensitive to object movement, disappearing in cases where the object is licensed below Voice.

    – The characterization of *-(C)ia + ina* as an object licenser captures its appearance in ergative extraction contexts, non-finite clauses, and passives.

- What do we do with Dixon's generalization?

    – I've shown that despite having no morphological realization of ergative or absolutive Case, Nukuoro still shows sensitivity to classic ERG-ABS licensing patterns in the syntax.

    – We can reframe Dixon's generalization in terms of *abstract* Case (55), which aligns with generative insights on ergativity and captures the Nukuoro pattern.

    (55) **Dixon's generalization (revised)**
    Any language that shows syntactic ergativity assigns abstract ergative Case.

- In more concrete terms, we can pin syntactic ergativity on object shift above the subject, and propose that movement like this will only be obligatory if it is necessary for absolutive Case licensing.

    – This rules out an ergative extraction restriction in an overtly nominative-accusative language.[10]

---

[10]Although it's possible that we want to allow such a language—Donohue & Brown (1999) describe exactly this pattern in Oirata, a Timor-Alor-Pantar language of Indonesia. Though the syntax of Oirata has not been studied in-depth, we might want to say that high object shift can be obligatory in a language that is not ergative. This aligns with claims by Aldridge (2004, 2008, 2012) and Coon et al. (2021) that object shift is simply motivated by an EPP feature on Voice, rather than absolutive Case assignment from Infl.

5 The nature of pre-verbal subjects

- Up to this point, I've argued that object shift underlies Nukuoro syntactic ergativity.

  - Pre-verbal subjects throw a wrench into this analysis—if high objects prevent subject movement, how does the subject regularly end up highest in the clause?

- I'll provide evidence that pre-verbal subjects in relative and matrix clauses are base-generated high and control a PRO in Spec,VoiceP.

  - Relative clauses: Genitive subjects are possessors of the relative head
  - Matrix clauses: Bare pre-verbal subjects are in C

- I use relativized probing to explain why Ā-dependencies are halted by an intervening DP, while A-dependencies appear to "look past" a nominal to find the subject.

5.1 Genitive subjects of relative clauses

- Genitive subjects of relative clauses are base generated as possessors of the relative head, a position which is external to the relative clause (Bauer 1997, 2007; Hawkins 2000; Otsuka 2010b; Herd et al. 2011).

  - In this position, subjects are assigned genitive by virtue of being within the DP (i.e., from $Poss^0$ or D^0).

- This clause-external position is apparent in languages that have strict VSO word order, like Niuean.

  - Relative subjects may either appear in canonical subject position, marked ergative, or outside of the relative clause, marked genitive (56).

(56) Niuean   (Seiter 1980:97)
    a. e mena [ne tunu ai   **e koe** e moa]
        ABS thing NFUT cook OBL.PRO ERG 2SG ABS chicken
        'the thing you cooked the chicken in'
    b. e mena **haau**$_i$ [ne tunu ai   PRO$_i$ e moa]
        ABS thing 2SG.GEN NFUT cook OBL.PRO   ABS chicken
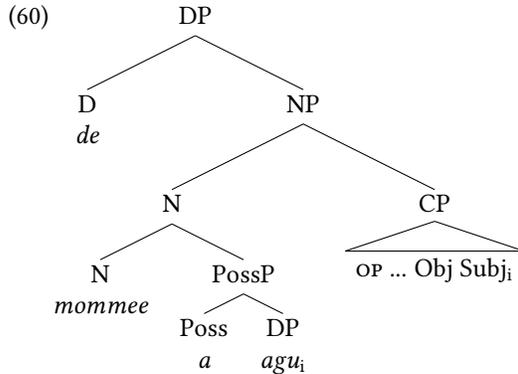   'the thing you cooked the chicken in'

- In Nukuoro, this displacement is not as apparent, since subjects are typically pre-verbal.

- However, some speakers allow post-verbal subjects in intransitive clauses; for these speakers, we see the same flexibility in relative clauses as in Niuean.

  - Post-verbal subjects are clause-internal and unmarked, while pre-verbal subjects are clause-external and genitive (57).

(57) a. de masovaa [ne kada ai   **gilaadeu**]
        DET time   PFV laugh OBL.PRO 3PL
        'the time that they laughed'
    b. de masovaa **olaadeu**$_i$ [ne kada ai   PRO$_i$]
        DET time   3PL.GEN PFV laugh OBL.PRO
        'the time that they laughed'

- Additionally, pronominal genitive subjects may optionally appear before the relative head, clearly displaced from the relative clause.

  - Pre-nominal genitives are morphologically fused with the definite determiner *de*; I follow Otsuka (2010b) in assuming these pronouns are in D.
  - This flexibility mirrors the positions available for pronominal genitives in canonical possession (59).

(58) a. taane **aagu**ᵢ [ne gidee laa PROᵢ]
      DET.man 1SG.GEN PFV see   DIST
      'the man that I saw'

     b. **d-agu**ᵢ   daane [ne gidee laa PROᵢ]
      DET-1SG.GEN man   PFV see   DIST
      'the man that I saw'

(59) a. de abaaba **oogu**
      DET door   1SG.GEN
      'my door'

     b. **d-ogu**   abaaba
      DET-1SG.GEN door
      'my door'

- The structure that I adopt for Nukuoro relative clauses is in (60), where the genitive argument is base-generated in the NP/DP domain, above the relative CP.

(60)

```
                DP
              /    \
            D       NP
            de     /   \
                  N      CP
                /   \    /    \
              N    PossP op ... Obj Subjᵢ
           mommee  /   \
                Poss   DP
                 a    aguᵢ
```

- Crucially, if genitive subjects are external to the relative clause, relativization occurs before they have merged.

  – Relativization operates on a structure where the object is structurally higher than the PRO subject.

5.2 Bare pre-verbal subjects are in C

- I propose a similar mechanism for matrix clauses, where pre-verbal subjects are generated in the specifier of CP and bind a PRO in external argument position.

- It is well-known that pre-verbal nominals in the Polynesian Outliers are historically derived from left-edge topics, which originally controlled a pronoun in post-verbal subject position.

(61) Ttoeaina   koo see matea **nee ia** se mea e   tasi.
      DET.old.man INC NEG see   ERG 3SG a thing NPST one
      'The old man can no longer see anything.'   (Tuvaluan; Besnier 2000:281)

(62) A   Vave gu gidee ange **e   ia** hegau a   Tubuanage ne hai...
      PERS Vave INC see   DIR ERG 3SG work GEN Tubuanage PFV do
      'Vave saw the work that Tubuanage did...'   (Nukuoro; Carroll 1980:10-1.255)

- It is no longer possible in Nukuoro for pre-verbal subjects to be doubled by a post-verbal pronoun (63).

(63)   *De gauligi ne buuludi ange (e) ia Soni.
        The child   PFV hug   DIR   ERG 3SG Johnny
        Intended: The child hugged Johnny.

- Furthermore, the Nukuoro pre-verbal position doesn't appear to be a general topic position—it can only host *nominal subjects*.

(64)   *I   honga teebele   ne dugu au de beebaa.
        PREP top   DET.table PFV put 1SG DET book
        Intended: 'On the table, I put the book.'

(65) * Gi Ruth ne gaav-ange (ai) Soni dahi beebaa.
to Ruth PFV give-DIR OBL.PRO Johnny one book
Intended: To Ruth, I gave a book.'

(66) * De beebaa ne dugu au i honga teebele.
DET book PFV put 1SG PREP top DET.table
Intended: 'The book, I put on the table.'

- However, we can show that pre-verbal subjects are still connected to the C domain: the availability of (bare) pre-verbal subjects is dependent on clause type.

- We've already seen that matrix clauses have bare pre-verbal subjects.

(67) a. **De hine laa** ne anu.
DET woman DIST PFV dance
'That woman danced.'

b. **De gauligi** ne lingi de koovee.
DET child PFV spill DET coffee
'The child spilled the coffee.'

- Polar questions may optionally have bare pre-verbal subjects, but they also may have post-verbal subjects.

(68) a. **Koe** ne llanga denga gede?
2SG PFV weave DET.PL basket
'Did you weave the baskets?'

b. Ne llanga **goe** denga gede?
PFV weave 2SG DET.PL basket
'Did you weave the baskets?'

- Relative clauses cannot have bare pre-verbal subjects (and we've already seen that genitive pre-verbal subjects are base-generated outside of the relative clause).

(69) a. * de masovaa **gilaadeu** ne kada ai
DET time 3PL PFV laugh.PL OBL.PRO
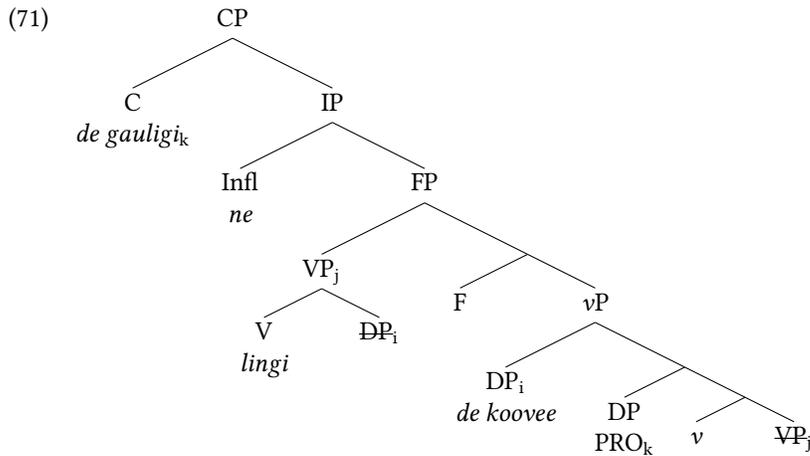Intended: 'the time that they laughed'

b. * taane **au** ne gidee laa
DET.man 1SG PFV see DIST
Intended: 'the man that I saw'

- Adjunct clauses (like *when* clauses) cannot have bare pre-verbal subjects.

(70) a. [Ga tilo naa huu **gidaadeu** de ango], denga leebunga ne humai i lote umada.
PRSP look.at DEM when 1PL.INCL DET pearl DET.PL color PFV come PREP inside.DET rainbow
'When we look at the pearl, the colors come from inside the rainbow.'

b. * **Gidaadeu** ga tilo naa huu de ango...
1PL.INCL PRSP look.at DEM when DET pearl
Intended: 'When we look at the pearl...'

- I suggest that matrix C (and optionally polar question C) introduces a bare pre-verbal argument, which controls a PRO in Spec,VoiceP (71).

(71)

```
                    CP
            ┌───────┴───────┐
            C               IP
        de gauligi_k    ┌────┴─────┐
                       Infl        FP
                        ne    ┌─────┴──────┐
                            VP_j            │
                          ┌──┴──┐      ┌────┴────┐
                          V    DP_i    F         vP
                        lingi         ┌──────────┴──────┐
                                     DP_i      DP      ┌──┴──┐
                                  de koovee    PRO_k   v    VP_j
                                                            
```

5.3 A potential solution: satisfaction conditions

- The problem now reduces to the difference between control (an A-dependency) and Ā-movement.

  - Control of subject PRO appears to look past the shifted object.
  - Ā-movement is subject to object intervention.

- Interestingly, this reverses the typical locality patterns of A- and Ā-dependencies.

  - A-dependencies are typically more local, targeting the highest nominal in a domain, while Ā-dependencies are frequently long-distance, looking past irrelevant potential goals.
  - However, it's worth noting that this is a problem for many languages argued to have object shift, where control is still obligatorily subject-oriented (Dixon 1994; Landau 2013).[11]

- Assuming that control can be reduced to agreement (e.g., Landau 2000, *et seq*) or movement (e.g., Hornstein 1999, *et seq*), we can model this difference using an Interaction-Satisfaction theory of Agree (Deal 2015).

- In this model, a probe is specified for two conditions:

  a. Interaction condition: features that a probe copies back
  b. Satisfaction condition: features that cause a probe to stop probing

- The difference between A- and Ā-dependencies in Nukuoro comes down to their **satisfaction conditions**.

  - The probe on relative C is satisfied by either [D] or [Ā], whichever is encountered first.
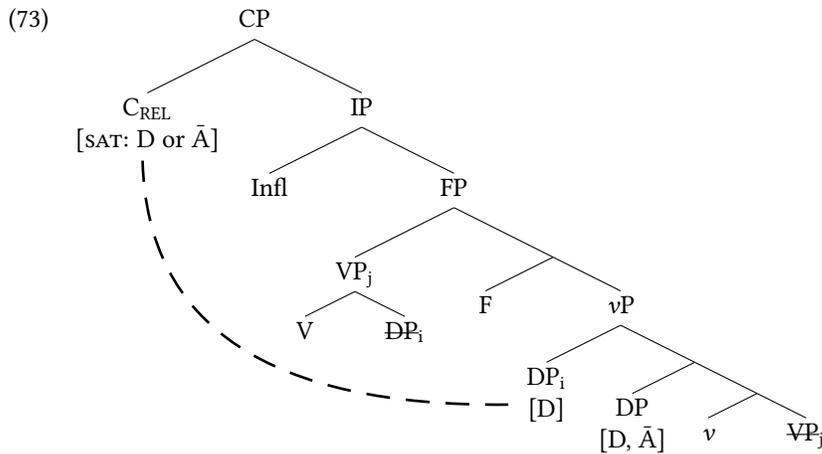 - The probe on matrix C is *insatiable*, and will Agree with every nominal in its domain.

  (72) Probe specifications in Nukuoro
      a. Relative C: [INT: ϕ, SAT: D or Ā]
      b. Matrix C: [INT: ϕ, SAT: −]

- For matrix contexts, we can then say that the probe will formally Agree with (or Move) the last element it interacts with (i.e., an "outermost" preference, which may also be seen in ϕ-agreement, e.g., Deal 2022).
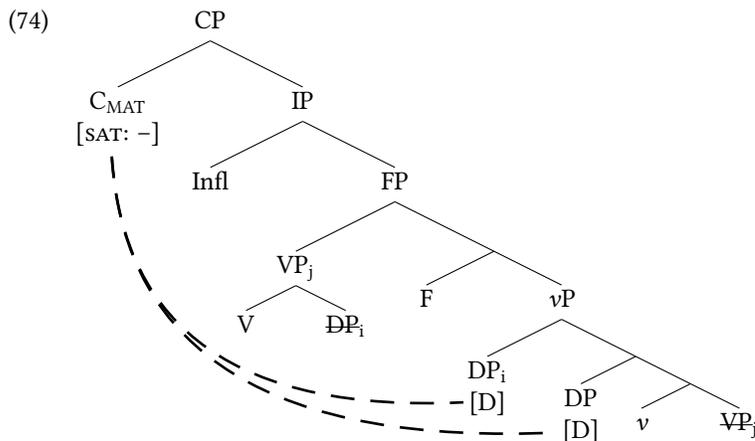
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[11]Deal (2016) only identifies two languages—Sama Southern (Malayo-Polynesian; Trick 2006) and Dyirbal (Pama-Nyungan; Dixon 1994)—where control appears to be ergatively-aligned.

- How does this play out in both contexts?

  - In relativization, the probe will halt upon encountering either [D] or [Ā]; it finds the object's [D] feature first, and stops probing before it can encounter the transitive subject.

(73)

```
                    CP
          ┌──────────┴──────────┐
      C_REL                      IP
   [SAT: D or Ā]          ┌──────┴──────┐
        ┆                Infl           FP
        ┆                        ┌───────┴───────┐
        ┆                      VP_j               
        ┆                   ┌───┴───┐     F        vP
        ┆                   V      DP_i      ┌──────┴──────┐
        ┆                             DP_i              
        └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─  [D]   DP      v    VP_j
                                          [D, Ā]
```

  - In matrix clauses, the probe on C will interact with every nominal (i.e., every set of visible ϕ features) in its domain, and will end up reflecting control with the subject, which it encounters last.

(74)

```
                    CP
          ┌──────────┴──────────┐
      C_MAT                      IP
    [SAT: −]             ┌──────┴──────┐
        ┆                Infl           FP
        ┆                        ┌───────┴───────┐
        ┆                      VP_j               
        ┆                   ┌───┴───┐     F        vP
        ┆                   V      DP_i      ┌──────┴──────┐
        ┆                             DP_i              
        ┆ ═ ═ ═ ═ ═ ═ ═ ═ ═ ═ ═ ═ ═  [D]   DP      v    VP_j
        └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ [D]
```

6 Wrap-up and implications

- To summarize, Nukuoro challenges two widely-held descriptive generalizations about ergative typology:

  - It has syntactic ergativity without morphological ergativity (contra Dixon).
  - It has ergativity and basic SVO word order (contra Mahajan).

- In both cases, there is more going on than meets the eye.

- I showed that syntactic ergativity in Nukuoro reflects object shift due to high absolutive Case assignment, meaning that Nukuoro has abstract ergativity that is not reflected in the morphology.

  - This kind of system is exactly what theories of Case and syntactic ergativity predict.
  - Dixon's generalization may be better stated with respect to abstract Case, not morphological case.

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- Nukuoro provides further evidence for the existence of abstract Case without morphological case, and constitutes a novel example of an abstract ergative alignment (Sheehan & van der Wal 2016).

- Furthermore, I showed that SVO word order in matrix clauses stems from a residual topic-fronting mechanism, which obscures an underlying verb-initial pattern.

  - In other words, it's not worth throwing out Mahajan's generalization just yet—Nukuoro is still verb-peripheral where it counts.

- Finally, the mechanism of subject control challenges typical notions of locality in movement, and may be fruitfully explained using relativized probing (e.g., Béjar 2003) and probe insatiability (e.g., Deal 2015).

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