Maintaining syntactic identity under sluicing: Pseudoclefts and ergative extraction in Nukuoro[1]

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1 The backdrop

- Sluicing (Ross 1969; Merchant 2001) refers to clausal ellipsis that strands a *wh*-phrase (1).

    (1)   Johnny dropped something, but I don't know what <*Johnny dropped*>.

- Some sluicing terminology:

    * **Antecedent**: the first clause, which determines the interpretation of the elided constituent
    * **Sluice**: the elided portion, written in angle brackets
    * **Remnant**: the material outside of the ellipsis site (the *wh*-phrase)

- Recent work (Fiengo & May 1994; Chung 2006, 2013; Merchant 2013; Ranero 2019; Rudin 2019) has argued convincingly that sluicing is constrained by some syntactic identity condition—at least something like (2).

    (2)   *Syntactic identity condition* (Merchant 2013, formalized by Chung 2013)
    The heads in the verbal spine of the elided constitutent must be syntactically identical to the corresponding heads in the antecedent.

- Two potential challenges to syntactic identity have arisen in non-European languages:

    - **Pseudocleft sluicing**: Potsdam (2007) shows that in Malagasy, *wh*-questions are pseudoclefts, which may undergo sluicing with a non-pseudocleft antecedent.
    - **Voice mismatches**: Unlike in English, some voice mismatches under sluicing are grammatical, particularly those enforced by extraction restrictions (e.g, in Kaqchikel; Ranero 2019).

▷ Using sluicing data from Nukuoro (Polynesian-Outlier; Micronesia), I show that these two challenges can be accounted for under a syntactic identity condition.

    - Pseudocleft sluicing in Nukuoro involves ellipsis of the relative IP (Lipták 2015), rather than matrix IP.
    - Apparent voice mismatches due to ergative extraction can be analyzed as voice matches + *repair under ellipsis*, as has been identified for islands (Ross 1969) and *that*-trace effects (Perlmutter 1971).

- This analysis provides insight into the nature of extraction restrictions, specifically that they should be analyzed like islands or *that*-trace effects (e.g., Coon et al. 2014; Erlewine 2016), as PF violations, or as a type of *wh*-agreement (e.g., Pearson 2005; Stiebels 2006).

- **Roadmap:**

    §2: Background on Nukuoro
    §3: Pseudocleft sluicing
    §4: Voice mismatches due to ergative extraction
    §5: Wrap-up and implications

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2   Background on Nukuoro

- Nukuoro is an SVO Polynesian-Outlier language spoken by ~1,200 people in Micronesia and the U.S.

- All Nukuoro data presented in this paper comes from my own fieldwork in Kolonia, Pohnpei, on Nukuoro Atoll, and over Zoom from 2015–present.[2]

(a) Map of the FSM
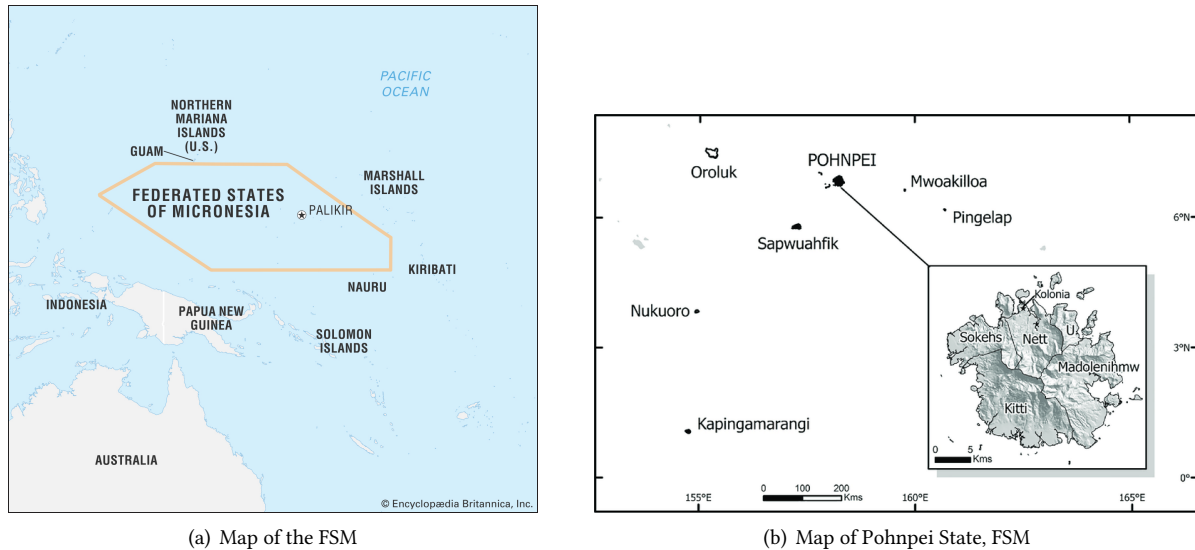

(b) Map of Pohnpei State, FSM

Figure 1: Location of Kolonia, Pohnpei and Nukuoro Atoll

- Nukuoro has basic SVO word order, as shown in (3).

    - Core arguments are not marked for case.

    - There is no verbal agreement with subjects or objects.

(3)   Soni   ne lingi de   koovee.
      Johnny PFV spill DET coffee
      'Johnny spilled the coffee.'

- Nukuoro uses a genitive relative clause (GRC), where subjects of relative clauses appear in genitive case.

    - Genitive case is marked by a genitive pronoun or by the particle *a* or *o* before proper/common nouns.

    - Relative clauses do not use a complementizer, suggesting that they are smaller than CP (i.e., IP).

(4)   a. de nui   **aau**   ne gage
         DET coconut.tree 2SG.GEN PFV climb
         'the coconut tree that you climbed'
      b. de nui   **a   de gauligi** ne gage
         DET coconut.tree GEN DET child   PFV climb
         'the coconut tree that the child climbed'

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- Nukuoro also shows an ergative extraction restriction under relativization (Drummond 2021).

  – Intransitive subjects and transitive objects can be relativized using an unmarked gap (5a).

  – Relativizing a transitive subject requires the verb to appear in what I will call passive voice, which involves an idiosyncratic verbal suffix -Cia plus the optional particle *ina* (5b).[3]

  – This morphology is used in a productive passive construction in Nukuoro, which promotes the patient and demotes the agent to an optional oblique, marked by the preposition *i* (6).

(5) Extraction restriction

    a. Go ai   adaau   ne tugi laa?
        FOC who 1DU.GEN PFV hit   DIST
        'Who did we hit?'

    b. Go ai   ne *tugi / **duugia** (**ina**) Soni?
        FOC who PFV   hit / hit.PASS PASS Johnny
        'Who hit Johnny?'

(6) Passive voice

    a. Gilaadeu gu hagaduu dogu hale.
        3PL   INC build   my   house
        'They built my house.'

    b. Dogu hale   ne **hagaduulia** (**ina**) (i   de gau   laa).
        my   house PFV build.PASS   PASS OBL DET people DIST
        'My house was built (by those people).'

- As in many Polynesian languages (Potsdam & Polinsky 2011), Nukuoro *wh*-questions are pseudoclefts, which consist of a predicate *wh*-phrase with a headless relative clause as its subject (7).

  – The predicate *wh*-phrase fronts to the specifier of a high functional head, which I call F.

  – Evidence for a pseudocleft structure of Nukuoro *wh*-questions is provided in Appendix A.

(7) a. Go ai   a   Soni   ne gidee?
        FOC who GEN Johnny PFV see
        'Who did Johnny see?'

    b. [Pred Go ai] [DP OP$_i$ [IP a Soni ne gidee t_i]]?

(8)
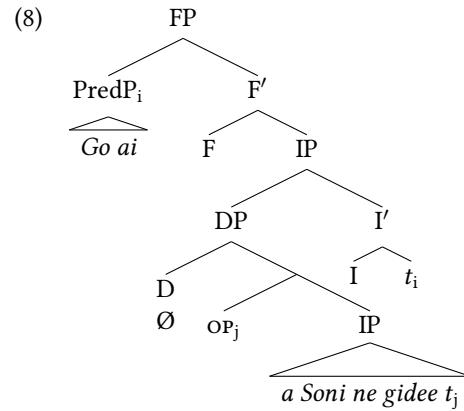
- Embedded *wh*-questions use the same pseudocleft structure under the complementizer *be* (9).

(9) Au e   dee iloo be [go ai   a   Soni   ne gidee].
    I   NPST NEG know C   FOC who GEN Johnny PFV see
    'I don't know who Johnny saw.'

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[3]The *Cia suffix has a variety of functions across Polynesian languages, and in non-Eastern Polynesian languages in particular it is often called a "transitivizer", and has been argued not to be a true passive (Chung 1978; Otsuka 2012). I follow Cook (1996) and assume that Nukuoro derivatives of *Cia instantiate passive voice here, but it is also possible that -Cia is the realization of some other head associated with a passive meaning.

- The relative head in a pseudocleft is typically null, but it can also be overt!

  – Common "dummy" heads include demonstratives like *deelaa* 'that (one)' (10b) and nouns like *mee* 'thing' or *dangada* 'person' (10c).

  (10) a. Go ai **Ø** aau ne gidee?
            FOC who   2SG.GEN PFV see
            'Who did you see?'

        b. Go ai **deelaa** aau ne gidee?
            FOC who DEM.SG 2SG.GEN PFV see
            'Who is that one that you saw?'

        c. Go ai **tangada** aau ne gidee?
            FOC who DET.person 2SG.GEN PFV see
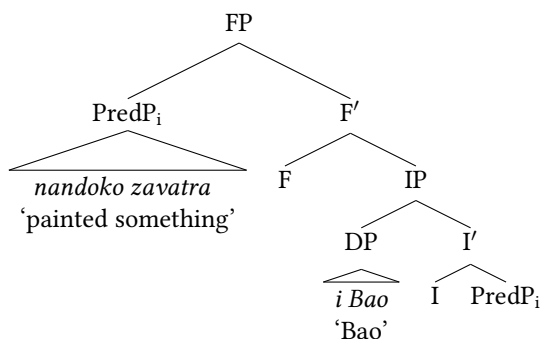   'Who is the person that you saw?'

3   Pseudocleft sluicing

- Sluicing in languages with pseudocleft *wh*-questions presents an apparent challenge to syntactic identity.

  – If the sluice has a pseudocleft structure but the antecedent does not, syntactic identity is violated.

- For instance, Malagasy allows sluicing of pseudocleft *wh*-questions (Paul 2000, 2001; Potsdam 2006a,b, 2007), leaving behind only the embedded *wh*-word (12).

  (11) a. iza no mividy ny osy?
            who PRT buy.AT the goat
            'Who is buying the goat?'

        b. [PredP iza][DP OP_i no mividy ny osy t_i]

  (12) nandoko zavatra i Bao fa hadinoko   hoe inona <*no nolokoin' i Bao*>.
        paint.AT thing   Bao but forget.TT.1SG COMP what   PRT paint.TT Bao
        'Bao painted something but I forget what <was painted by Bao>.'

- Potsdam (2007) assumes that Malagasy sluicing involves ellipsis of the clausal IP, which contains the subject relative clause DP in its specifier.

  – Since the sluice has a pseudocleft structure but the antecedent does not, Potsdam concludes that pseudocleft sluicing cannot be accounted for under syntactic identity.

  (13)   Antecedent structure (Potsdam 2007:589)   (14)   Sluice structure (Potsdam 2007:590)
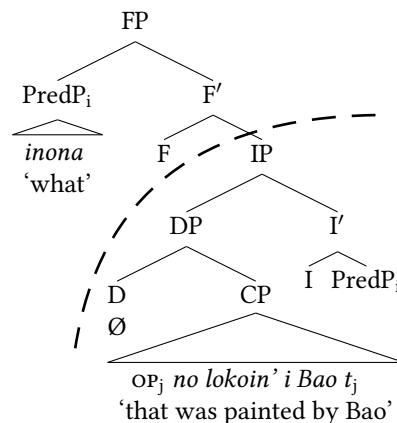
▷ I argue instead that pseudocleft sluicing simply targets the relative clause IP, rather than the matrix IP.

  – The relative IP has a typical clause structure, which is syntactically identical to the antecedent.

• Like Malagasy, Nukuoro has a sluicing construction (15) despite having pseudocleft *wh*-questions.

(15) Soni   ne gidee dahi dangada, gai au e   dee iloo be go ai   *<a Soni   ne gidee>*.
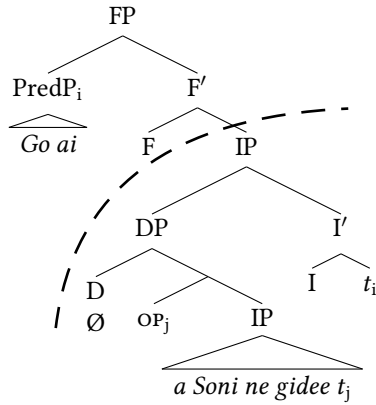   Johnny PFV see one person   but I NPST NEG know C FOC who GEN Johnny PFV see
   'Johnny saw someone, but I don't know who.'

• Since pseudoclefts are biclausal, there are two possibilities for clausal ellipsis: the matrix IP or the relative IP.

  – Relative clause ellipsis has been identified in a number of languages, including Hungarian (Lipták 2015), Brazilian Portuguese (Rodrigues et al. 2009), and Gungbe (Lipták & Aboh 2013).

(16) Ellipsis of the matrix IP   (17) Ellipsis of the relative IP
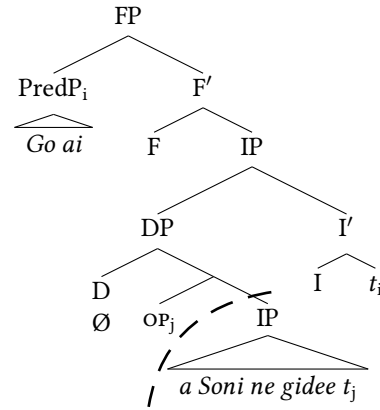
• When the relative head is null, it's impossible to tell which IP is elided. However, if the relative head is overt in Nukuoro, it remains outside of the sluice (18).

(18) Soni   ne gidee dahi dangada, gai au e   dee iloo be go ai   **deelaa**.
      Johnny PFV see one person   but I NPST NEG know C FOC who DEM.SG
      'Johnny saw someone, but I don't know who is the one.'

• This suggests that ellipsis does not include the relative head, favoring the analysis in (17).

▷ If ellipsis only targets the relative clause IP, the sluice has a typical clause structure (rather than a pseudocleft) and can be syntactically identical to the antecedent (21-22).

Sidenote: Sluicing vs. pseudosluicing

• Nukuoro sluices with and without overt relative heads pass diagnostics for sluicing, and fail diagnostics for cleft-based sources like pseudosluicing and spading (Appendix B).

  – For instance, they can undergo sprouting (19) and be modified by *else* (20), which are both impossible for pseudosluices (Merchant 2001:121-122).

(19) Soni   gu haga-mmuni de   sseene, gai au e   dee iloo be go hee   (deelaa).
      Johnny INC CAUS-hide   DET money but I NPST NEG know C FOC where DEM.SG
      'Johnny hid the money, but I don't know where.'

(20) Soni   gu kave Mina gi de hale goloa, gai au e   dee iloo be go ai   (deelaa) angeange.
      Johnny INC send Mina to DET house sell   but I NPST NEG know C FOC who DEM.SG other
      'Johnny sent Mina to the store, but I don't know who else.'

(21) Antecedent structure   (22) Sluice structure
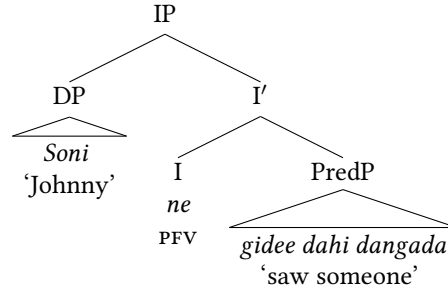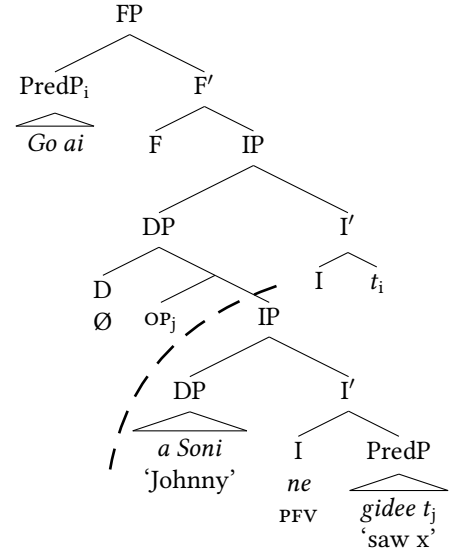
- We've accounted for Nukuoro sluicing under syntactic identity—what about Malagasy?

- Potsdam (p.c.) notes that the demonstrative *izany* 'that' may survive in Malagasy (23), though it is not clear whether this construction should be analyzed as sluicing or pseudosluicing.

    – If constructions like (23) pass diagnostics for sluicing, the relative clause ellipsis analysis presented here may extend to Malagasy as well.

(23) nividy zavatra   ny mpianatra fa   tsy fantatro   hoe inona **izany**.
      bought something the student   but not know.1sg c   what that
      'The student bought something but I don't know what it was.'   (Potsdam, p.c.)

- A prediction of the relative IP ellipsis analysis is that material in the left periphery of the relative clause might survive sluicing, which is true of Hungarian (Lipták 2015).

    – In Malagasy, however, relativizers (24) and interrogative C heads (25) cannot survive under sluicing.

(24) a. ny boky **izay** novidiny
          the book REL bought.3sG
          'the book that she bought'

      b. nividy zavatra   ny mpianatra fa   tsy fantatro   hoe inona (***izay**).
          bought something the student   but not know.1sG c   what   REL
          'The student bought something but I don't know what.'   (Potsdam, p.c.)

(25) a. iza **no** nihomehy?
          who PRT laughed
          'Who laughed?'   (Potsdam 2006b:3)

      b. nisy olona nihomehy ka nanontany ianao   hoe iza (***no**).
          exist person laughed   and ask.AT   2sG.NOM COMP who PRT
          'Someone laughed and you asked who.'   (Potsdam 2007:584)

- This is not fatal for the present analysis: C heads that immediately dominate sluices are often unexpectedly empty (Lobeck 1995; Merchant 2001:74-82), even in languages which allow doubly filled COMP.

- We might want to attribute the lack of overt C to phonological conditions on sluicing, as Lipták does.

  - Remnants escaping clausal ellipsis must be able to bear stress (Sprouse 2006; Sáez 2011).
  - Hungarian relativizers may independently bear stress (Lipták 2015:200), allowing them to survive sluicing, but it is possible that Malagasy C heads may not bear stress. This hypothesis awaits further research.

- **To summarize:**

  - Pseudocleft sluices in Nukuoro elide a relative clause IP, which ensures that the sluice is syntactically identical to the antecedent.
  - Nukuoro sluices with and without overt relative heads are true sluices, not pseudosluices.
  - A relative ellipsis analysis may also be available for Malagasy, though further research is needed.

4   Voice mismatches due to ergative extraction

- Voice mismatches are ruled out under a syntactic identity condition on sluicing, as seen in English (26).

  (26)   Voice mismatches
      a.   * Joe was murdered, but we don't know who <*murdered Joe*>.   (*passive-active)
      b.   * Someone murdered Joe, but we don't know by who <*Joe was murdered*>.   (*active-passive)

- However, several languages *do* appear to allow voice mismatches under sluicing—particularly those that use voice to obviate an extraction restriction, like Kaqchikel (Ranero 2019).

  - In Kaqchikel, ergative subjects may only be extracted if the verb uses Agent Focus (AF) voice (27a).
  - If the *wh*-remnant of a sluice is an ergative subject, the implied voice of the sluice is AF, which mismatches with active voice in the antecedent (27b).

  (27)   Kaqchikel (Ranero 2019:5-7)
      a.   Achike *x-Ø-u-tej   / **x-Ø-tj-o**   nu-way?
           who   COM-B3S-A3S-eat / COM-B3S-eat-**AF** A1S-tortilla
           'Who ate my tortillas?'
      b.   **X-Ø-u-lōq'**   jun monton kotz'i'j jun wināq, po man w-etama-n   ta   achike wināq
           COM-B3S-A3S-buy one bunch   flower one person but NEG A1S-know-PERF NEG which person
           <**x-Ø-loq'-o**   jun monton kotz'i'j>.
           COM-B3S-buy-**AF** one bunch   flowers
           'Some person bought a bunch of flowers, but I don't know which person.'

- I argue that voice "mismatches" in Nukuoro are actually voice *matches* + repair under ellipsis.

  - Extraction restrictions can be repaired by ellipsis, along the same lines as islands (Ross 1969) and *that*-trace violations (Perlmutter 1971).
  - True voice mismatches are always ruled out by syntactic identity.

4.1   Nukuoro voice (mis)matches

- As in Kaqchikel, we can use Nukuoro extraction restrictions to infer the verb form contained within the sluice.

  - If the *wh*-remnant is a transitive subject, the voice in the sluice must be passive.
  - I will refer to these passives as *ergative extraction passives* (EE passives).

- An active antecedent can grammatically co-occur with an ergative extraction passive (28).

  (28) Dahi dangada ne **tugi** au, gai au e   dee iloo   be go ai   <ne **duugia** (**ina**) au>.
        one   person   PFV hit me but I   NPST neg know c   FOC who PFV hit.PASS PASS me
        'Somebody hit me, but I don't know who <hit me>.'

- A passive antecedent may also grammatically co-occur with an ergative extraction passive (29).

  (29) Dahi mee gu **gaiaadia**, gai au e   dee iloo   be go ai   <gu **gaiaadia**>.
        one   thing INC steal.PASS but I   NPST neg know c   FOC who PFV   steal.PASS
        'Something was stolen, but I don't know who <stole (it)>.'

- Nukuoro does not allow other valence-altering morphology to mismatch, as in causative-inchoative alternations.

  - The sluice cannot contain a causativized form of the antecedent (30).
  - A stative verb cannot mismatch with the active transitive form (31).

  (30) * De hadu gu dige, gai au e   dee iloo   be go ai   <ne **haga-digelia** ina>.
         DET stone INC roll but 1SG NPST DET know c   FOC who   NPST CAUS-roll.PASS PASS
         'The stone rolled, but I don't know who <rolled it>.'
  (31) * Denga kaba gu **ma-oha**, gai au e   dee iloo   be go ai   <ne **oha** ina>.
         DET.PL cup INC STAT-break but I   NPST neg know c   FOC who PFV   break PASS
         Intended: 'The cups broke, but I don't know who <broke them>.'

- The Nukuoro data is summarized in Table 1: ergative extraction passives are grammatical with active and passive antecedents, and other argument-structure mismatches are ungrammatical.

Antecedent	Ellipsis site	Judgement	Example
Active	EE passive	✓	(28)
Passive	EE passive	✓	(29)
Active	Causative	✗	(30)
Stative	Active	✗	(31)

Table 1: Mismatches in Nukuoro sluicing

- These results are similar to Ranero's (2019) findings for Kaqchikel (Mayan).

  - In Kaqchikel, the voice forced by ergative extraction (Agent Focus) can freely co-occur with active and passive voices (Ranero 2019:8).
  - Antipassive-active voice mismatches, however, are ungrammatical (32).

  (32) * Yïn **x-i-loq'-on**=pe   pa   k'ayib'äl. Ta-wla   achike <**x-Ø-in-löq'**=pe>!
         1SG COM-B1S-buy-**AP**=DIR PREP market   IMP-guess what   COM-B3S-A3S-buy=DIR
         Intended: 'I bought (something) at the market. Guess what!'   (Ranero 2019:7)

- **The generalization**: Voice forced by extraction can freely mismatch, but other verbal structure cannot.

4.2   Repair by ellipsis

▷ I argue that ergative extraction can be repaired by ellipsis, and that voice "mismatches" are only apparent.

- It is well known that ellipsis repairs certain types of syntactic violations, including islands (Ross 1969) and *that*-trace effect violations (Perlmutter 1971), among others.

  (33)   Adjunct clause island
      a. * Do you know who$_i$ Dakota will be mad if Omri talks to t_i?
      b.   Dakota will be mad if Omri talks to someone. Do you know who <Dakota will be mad if Omri talks to t_i>?

  (34)   *That*-trace violation
      a. * I can't remember who$_i$ Madison thought that t_i would win the race.
      b.   Madison thought that someone would win the race, but I can't remember who$_i$ <Madison thought that t_i would win the race>.

- Sluicing also repairs islands in Nukuoro, as shown below for an adjunct clause island (35).

  (35)   Adjunct clause island in Nukuoro
      a. * Go ai   a   Mina e   hano noo Soni   e   tugi?
                 FOC who GEN Mina NPST go   if   Johnny NPST hit
                 Intended: 'Who will Mina leave if Johnny hits?'
      b.   Mina e   hano noo Soni   e   tugi dahi dangada. Koe e   iloo   be go ai?
                 Mina NPST leave if   Johnny NPST hit one person   you NPST know c   FOC who
                 'Mina will leave if Johnny hits someone. Do you know who?'

- A prominent view holds that islands are PF violations, which allows them to be repaired by non-pronunciation (van Craenenbroeck & Merchant 2013; Lasnik & Funakoshi 2018).

  – Others, like Barros et al. (2014), argue that ellipsis doesn't actually repair islands at all (Appendix D).

- For simplicity, I will represent island violations with a star ✪ (Chomsky 1971, 1972).

  – Ungrammaticality arises if this diacritic survives the derivation (36a).
  – If the diacritic is deleted by ellipsis, however, it no longer causes a "crash" (36b).

  (36)   a. * Do you know who$_i$ Dakota said she will be mad [✪ if Omri talks to t_i]?
         b.   Dakota said she will be mad if Omri talks to someone. Do you know who <Dakota said she will be mad [✪ if Omri talks to t_i]>?

- We can apply this analysis to the apparent Nukuoro voice "mismatch" in (28).

  (28)   Dahi dangada ne **tugi** au, gai au e   dee iloo   be go ai.
         one person   PFV hit   me but I   NPST NEG know c   FOC who
         'Somebody hit me, but I don't know who.'

- Let us assume that illicit A'-movement creates the same diacritic that island-violating movement does.

  – For instance, extraction of an ergative from an active clause would incur a violation, notated by ✪ (37).
  – If this illicit movement were contained within a sluice, it would be deleted and the derivation "rescued".

  (37) * Go ai   [✪ ne   tugi Soni]?
         FOC who   PFV hit   Johnny
         'Who hit Johnny?'

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- Let's say that the sluice in (28) actually contains *active voice*.

  - Extraction of the ergative *wh*-phrase generates a movement violation.
  - Sluicing deletes this violation, as shown in (28′).

  (28′)   Dahi dangada ne **tugi** au, gai au e   dee iloo be go ai   <☆ ne **tugi** au>.
          one person PFV hit   me but I NPST NEG know C FOC who   PFV hit   me
          'Somebody hit me, but I don't know who <hit me>.'

▷ Under this analysis, there is **no mismatch** at all—both clauses in (28′) are in the active voice, and syntactic identity is satisfied.

- What about ergative extraction passives that co-occur with true passives?

  - There are effectively two derivations for the ergative *wh*-question in the sluice:
    * Active voice and a ☆ violation
    * Passive voice and no violation
  - I propose that in (29), the voice in the sluice is actually passive, unlike in (28′).

  (29)   Dahi mee gu **gaiaadia**, gai au e   dee iloo be go ai   <ne **gaiaadia**>.
         one thing INC steal.PASS but I NPST NEG know C FOC who PFV steal.PASS
         'Something was stolen, but I don't know who <stole (it)>.'

- Finally, an island repair analysis explains why other argument structure mismatches are ruled out.

  - Since these alternations do not involve ☆-creating movement, they cannot be repaired under ellipsis.
  - Instead, they are ruled out by syntactic identity.

  (30)   *De hadu gu dige, gai au e   dee iloo be go ai   <ne **haga-digelia** ina>.
          DET stone INC roll but 1SG NPST DET know C FOC who NPST CAUS-roll.PASS PASS
          'The stone rolled, but I don't know who <rolled it>.'

  (31)   *Denga kaba gu **ma-oha**, gai au e   dee iloo be go ai   <ne **oha** ina>.
          DET.PL cup INC STAT-break but I NPST NEG know C FOC who PFV break PASS
          Intended: 'The cups broke, but I don't know who <broke them>.'

- To summarize, repair by ellipsis can explain why voice forced by extraction restrictions "doesn't count" for syntactic identity, while other mismatches do.

  - Illicit movement can be repaired by non-pronunciation, but general mismatches cannot.

5   Wrap-up and implications

- Nukuoro sluicing contributes an additional example of sluicing in a language with non-canonical *wh*-movement and an extraction restriction.

▷ We can maintain a syntactic identity condition for pseudocleft sluicing and voice mismatches.

  - Pseudocleft sluices elide a smaller, non-pseudocleft constituent: a relative IP.
  - Voice "mismatches" due to ergative extraction can be analyzed as voice matches + repair under ellipsis.

- Sluicing data can provide a new kind of evidence for analyses of extraction restrictions.

  - Maybe extraction restrictions can be unified with a treatment of islands (e.g., Coon et al. 2014), or *that*-trace effects (e.g., Erlewine 2016).

  - If islands are PF-phenomena, which allows them to be repaired by ellipsis, we may want to say that extraction restrictions are also PF-phenomena.

  - This analysis is also compatible with a view of extraction restrictions as *wh*-agreement (e.g., Pearson 2005; Stiebels 2006), since agreement can mismatch more broadly under ellipsis.

- Crucially, some analyses of extraction restrictions are incompatible with a repair-under-ellipsis analysis.

  - For instance, Polinsky (2016) argues that some languages with ergative extraction restrictions have PP ergatives, where both P-stranding and pied-piping are disallowed.

  - However, sluicing famously does not repair P-stranding/pied-piping violations (38), suggesting that it would also not repair ergative extraction restrictions.

    (38) Greek (Merchant 2001: 94–100)

    a. * Pjon milise   me?
          who she.spoke with
          'Who did she speak with?'

    b. I   Anna milise kapjon, all   dhe ksero *(me)   pjon.
          the anna spoke with   someone but not   I.know with who
          'Anna spoke with someone, but I don't know with whom.'

- Further documentation of sluicing in languages with extraction restrictions is necessary to solidify the generalization, identify areas of cross-linguistic variation, and find other ways to test the island repair hypothesis.

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A   Nukuoro *wh*-questions are pseudoclefts

- Like many Polynesian languages, Nukuoro uses a pseudocleft structure for *wh*-questions.

- I provide four types of evidence for a pseudocleft structure (adapted from Potsdam & Polinsky 2011):

  * The fronted constituent has predicate-like properties
  * The remainder behaves like a relative clause
  * Headless relatives exist elsewhere in the language
  * The relative head in a pseudocleft may be overt

- The fronted constituent has clearly predicative properties.

  - All types of phrases that can be predicates can appear initially in a question, including prepositional phrases (39) and predicative indefinites (40).

    (39) a. Ia [i   lausedi].
             3SG LOC salt.water
             'S/he is in the water.'

          b. [I   hee] olaadeu e   hulo ai   nei?
             LOC where 3PL.GEN NPST go.PL OBL.PRO PROX
             Where are they going?

    (40) a. Ia [se   gauligi suguulu].
             3SG INDEF.SG child   school
             'S/he is a student.'

          b. [Se   aha] aana   ne llanga?
             INDEF.SG what 3SG.GEN PFV weave
             'What did she weave?'

  - The fronted constituent can host TAM marking (41) and predicate modifiers like *angeange* 'again' (42).

    (41) [**Ne** hia]   au   mamu ne hudi?
         PFV how.many 2SG.GEN fish PFV pull.in
         'How many fish did you pull in?'

    (42) a. [Go ai] ne lliingia **angeange** nei de koovee?
             FOC who PFV spill.PASS again   PROX DET coffee
             'Who spilled the coffee again?'

          b. [Go ai **angeange**] ne lliingia   nei de koovee?
             FOC who again   PFV spill.PASS PROX DET coffee
             'Who spilled the coffee again?'

- The remainder (i.e., everything after the *wh*-phrase) is a headless relative clause.

  - Nukuoro uses a genitive relative clause (GRC), where the subject of the relative clause appears in genitive case. The same genitive marking appears on the subject of a *wh*-question.

    (43) a. Au ne gidee taane   [**aana**   ne hagaili laa].
             1SG PFV see   DET.man 3SG.GEN PFV slap   DIST
             'I saw the man that s/he slapped.'

          b. Go ai   [**aana**   ne hagaili laa]?
             FOC who 3SG.GEN PFV slap   DIST
             'Who did s/he slap?'

– Nukuoro shows restrictions on relativization, which also appear in *wh*-questions.
  * Relativization of a transitive subject requires the verb to appear in its passive form (44).
  * Relativization of a PP requires pronominalization using the oblique resumptive pronoun *ai* (45).

(44)   Ergative extraction restriction
    a. Au ne gidee tangada   [ne *tugi / **duugia ina** Soni].
       1SG PFV see   DET.person PFV hit   / hit.PASS PASS Johnny
       'I saw the person who hit Johnny.'

    b. Go ai   [ne *tugi / **duugia ina** Soni]?
       FOC who PFV hit   / hit.PASS PASS Johnny
       'Who hit Johnny?'

(45)   Oblique extraction restriction
    a. Au ne gidee de bido laagau [a Soni   ne hagaili **ai**   Mina].
       1SG PFV see   DET piece stick   GEN Johnny PFV hit   OBL.PRO Mina
       'I saw the stick that Johnny hit Mina with.'

    b. Se   aha [a Soni   ne hagaili **ai**   Mina]?
       INDEF.SG what GEN Johnny PFV hit   OBL.PRO Mina?
       'What did Johnny hit Mina with?'

- Headless relatives are found elsewhere in the language (46).

(46)   a. E   momo [ne hilia].
       NPST few   PFV choose.PASS
       'A few were chosen.'

    b. E   llanea [amaadeu   ne gai].
       NPST plenty 1PL.EXCL.GEN PFV eat
       'We ate plenty.'

- Finally, the relative head is typically null, but may also be an overt demonstrative pronoun (47b) or an overt "dummy" noun like *tangada* 'person' (47c).

(47)   a. Go ai **OP**$_i$ aau   ne gidee t_i?
       FOC who   2SG.GEN PFV see
       'Who did you see?'

    b. Go ai **deelaa**$_i$ aau   ne gidee t_i?
       FOC who DEM.SG 2SG.GEN PFV see
       'Who is that one that you saw?'

    c. Go ai **tangada**$_i$ aau   ne gidee t_i?
       FOC who DET.person 2SG.GEN PFV see
       'Who is the person that you saw?'

B   Diagnostics for sluicing

- My analysis of Nukuoro sluicing constructions relies on them being true sluices—in other words, having clausal structure that is then elided (48).

(48)   ... gai au e   dee iloo be go ai (deelaa) <*a Soni   ne gidee*>.
       but I NPST NEG know C FOC who DEM.SG GEN Johnny PFV see
       'Johnny saw someone, but I don't know who <Johnny saw>.'

- However, there are two analytic alternatives to sluicing, namely *pseudosluicing* and *spading*.

  - *Pseudosluices* are clefts, which consist of a copula and an expletive subject (49). In a language like Nukuoro that has a null copula and null expletive, sluices would look identical to pseudosluices (50).

    (49) a. Someone called me, but I don't know who. (sluice)
          b. Someone called me, but I don't know who it is. (pseudosluice)

    (50) Soni   ne gidee dahi dangada, gai au e   dee iloo be go ai   Ø   Ø.
          Johnny PFV see   one person   but I NPST NEG know c FOC who EXPL COP
          'Johnny saw someone, but I don't know who it was.'

  - *Spading* involves a cleft structure with a determiner as its pivot (51), a construction originally documented in Dutch (van Craenenbroeck 2004).

    (51) Jef eid iemand   gezien, mo ik weet nie wou da.
          Jef has someone seen   but I know not who that
          'Jef saw someone, but I don't know who.'   (van Craenenbroeck & Merchant 2013:718)

  - Neither of these constructions involve ellipsis of a clausal constituent, and both constructions would show cleft-like properties.

- I use three diagnostics to show that Nukuoro sluicing constructions, with or without an overt demonstrative pronoun, should not be analyzed as pseudosluicing or spading:

  - Sprouting (Merchant 2001:121)
  - TP-adjuncts (Potsdam 2007:608)
  - Else-modification (Merchant 2001:122)

3.2.1 Sprouting

- Sprouting occurs when the *wh*-remnant is an adjunct not present in the antecedent. Merchant (2001:121) notes that sprouting is permitted under sluicing, but not pseudosluicing (52).

    (52) a.   Ethan fixed the car, but I don't know when. (sluice)
          b. * Ethan fixed the car, but I don't know when it is. (pseudosluice)

- In Nukuoro, sprouting is permitted in constructions with or without overt relative heads, showing that both constructions are true sluices.

    (53) a. Soni   gu haga-mmuni de sseene, gai au e   dee iloo be go hee   (deelaa).
              Johnny INC CAUS-hide   DET money but I NPST NEG know c FOC where DEM.SG
              'Johnny hid the money, but I don't know where.'
          b. Soni   gu hai ange de   stoosaa, gai au e   dee iloo be go anahee (deelaa).
              Johnny INC fix AND DET car   but I NPST NEG know c FOC when   DEM.SG
              'Johnny fixed the car, but I don't know when.'

3.2.2 TP-adjuncts

- TP adjuncts would be predicted under a pseudosluicing analysis, since the TP is unelided. For sluicing, however, we predict that TP adjuncts would be ungrammatical, since they attach within the ellipsis site.

    (54) a. * Many people called me this week, but I don't remember who yesterday. (sluice)
          b.   Many people called me this week, but I don't remember who it was yesterday. (pseudosluice)

- Nukuoro does not allow TP adjuncts in sluices with or without overt relative heads (55).

(55) a. * Soa   tangada ne hagaagahi mai au, gai au e   dee iloo be go ai   anaahi.
          many person PFV CAUS-call VEN me, but I   NPST NEG know C FOC who yesterday
          Intended: 'Many people called me, but I don't know who yesterday.'

     b. * Llanea mee ne too   iho, gai au e   dee iloo be ni   aha aalaa anaahi.
          plenty thing PFV fall.PL down, but I   NPST NEG know C INDEF.PL what DEM.PL yesterday
          Intended: 'Many things fell down, but I don't know what they were yesterday.'

3.2.3 Else-modification

- Merchant (2001:122) notes that the modifier *else* is incompatible with the pivot of a cleft, so sluices should allow *else* modification but pseudosluices should not.

(56) a.   Mom sent Alex to the store, but I don't know who else. (sluice)

     b. * Mom sent Alex to the store, but I don't know who else it was. (pseudosluice)

- In Nukuoro, sluices with and without overt relative heads allow modification with *angeange* 'else, other'.

(57) Soni   gu kave Mina gi de hale goloa, gai au e   dee iloo be go ai (deelaa) angeange.
      Johnny INC send Mina to DET house sell   but I   NPST NEG know C FOC who DEM.SG other
      'Johnny sent Mina to the store, but I don't know who else.'

(58) Soni   ne hagao hanu laisi, gai au e   dee iloo be ni   aha (aalaa) angeange.
      Johnny PFV buy   some rice but I   NPST NEG know C COP.PL what DEM.PL other
      'Johnny bought some rice, but I don't know what else.'

- The results of these three sluicing diagnostics are summarized in Table 2.

	Sluicing	Pseudosluicing	Nukuoro
Sprouting	✓	✗	✓
TP-adjuncts	✗	✓	✗
Else-modification	✓	✗	✓

Table 2: Sluicing diagnostics

▷ **Conclusion:** Nukuoro sluices, with and without overt relative heads, are true sluices.

- Two additional diagnostics show that Nukuoro sluices actually instantiate sluicing, rather than pseudosluicing or spading: non-linguistic antecedents (Potsdam 2007:606) and mention-some continuations (Merchant 2001:121).

- These tests are successful for sluices with null relative heads, but fail for sluices with demonstrative pronouns.

  - There is a major confound here: *deelaa* shares some key properties of clefts—namely, anaphoricity and exhaustivity—that are targeted in these diagnostics.

  - As such, these tests are inconclusive for Nukuoro sluices with *deelaa*.

B.1   Non-linguistic antecedents

- Since expletives can function as deep anaphora (Hankamer & Sag 1976), pseudosluices should be able to pick up non-linguistic antecedents, while sluices are surface anaphora and should require a linguistic antecedent.

  (59) [Context: I show you picture of an unfamiliar person.]
    a.   # I want to know who. (sluice)
    b.   I want to know who it is. (pseudosluice)

- In Nukuoro, sluices with null relative heads cannot pick up non-linguistic antecedents, but sluices with a demonstrative pronoun can.

  (60) [Context: I show you picture of an unfamiliar person.]
    a.   # Au gu lodo loo gi iloo   au be go ai.
         1SG INC want loo to know 1SG C   FOC who
         Intended: 'I want to know who.'
    b.   Au gu lodo loo gi iloo   au be go ai   deelaa.
         1SG INC want loo to know 1SG C   FOC who that
         'I want to know who that is.'

  (61) [Context: I show you picture of an unfamiliar place.]
    a.   # Au gu lodo loo gi iloo   au be go hee.
         1SG INC want loo to know 1SG C   FOC where
         'I want to know where.'
    b.   Au gu lodo loo gi iloo   au be go hee   deelaa.
         1SG INC want loo to know 1SG C   FOC where that
         'I want to know where that is.'

- Since demonstrative pronouns can also pick up non-linguistic antecedents, the grammaticality of this test does not reveal much about the structure of sluices with *deelaa*.

B.2   Mention-some

- As a result of the exhaustivity associated with the cleft, pseudosluices cannot be modified with 'for example' or similar modifiers. Sluices, on the other hand, can.

  (62) Buy a gift for your mother.
    a.   What, for example? (sluice)
    b.   # What is it, for example? (pseudosluice)

- In Nukuoro, sluices with a null relative head can be followed by *e heohi ange* 'be fitting', but sluices with a demonstrative pronoun cannot.

  (63) Hagaona dahi gisagisa maa doo   dinana.
        buy.PASS one gift   for your mother
        'Buy a gift for your mother.'
    a.   Se   aha (e   heohi ange)?
         COP.SG what NPST correct AND
         'What (would be fitting)?'
    b.   # Se   aha deelaa (e   heohi ange)?
         COP.SG what that   NPST correct AND
         Intended: 'What is it (that would be fitting)?'

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(64) Gaavena dahi dangada gi de   hale   goloa.
      send.PASS one person   to DET house sell
      'Send somebody to the store.'

     a.   Go ai   (e   heohi ange)?
            FOC who NPST correct AND
            'Who (would be fitting)?'

     b. # Go ai   deelaa (e   heohi ange)?
            FOC who that   NPST correct AND
            Intended: 'Who is it (that would be fitting)?'

- Since demonstrative pronouns are deictic in nature and pick out a single individual, their infelicity with *e heohi ange* is expected and is not necessarily due to cleft exhaustivity.

C   True passives in sluices?

- Unfortunately, it's impossible to test whether "true" passives (i.e., those not implied by ergative extraction) can mismatch with actives.

   - The *wh*-remnant for the demoted agent of a passive looks identical to any other argument *wh*-remnant—its demoted status is signaled by the post-verbal resumptive pronoun *ai* (65b).
   - Pied-piping of the locative preposition *i* is ungrammatical (65c).

(65) a.   Soni   ne duugia ina i   Mina.
            Johnny PFV hit.PASS PASS LOC Mina
            'Johnny was hit by Mina.'

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

     c. *I   ai o   Soni   ne duugia ina ai   laa?
            LOC who GEN Johnny PFV hit.PASS PASS OBL.PRO Q
            'Who was Johnny hit by?'

D   No island repair?

- Barros et al. (2014) argue that sluicing doesn't repair islands at all. Instead, they argue that sluices may be non-isomorphic with the antecedent, and they identify three particular non-isomorphic sources for sluices: short sources, cleft sources, and predicational sources.

- This approach runs into two issues when we consider the voice data.

   - First, Barros et al. do not constrain possible non-isomorphic sources in syntactic terms; without syntactic identity, it is unclear how to rule out certain types of voice mismatches in English and non-AF voice mismatches in Kaqchikel.
   - Second, the non-isomorphic sources they discuss do not seem to be available for the extraction voice sluices.
      * I argue above that Nukuoro sluices do not permit cleft sources.
      * It's unclear to me how short sources or predicational sources could be applied to the voice mismatch examples.

- If we need sluicing to repair one type of movement violation, namely an extraction restriction, we may as well invoke the same mechanism to repair islands.