

Maintaining syntactic identity under sluicing: Pseudoclefts and voice mismatches

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April 8, 2021

1 The backdrop

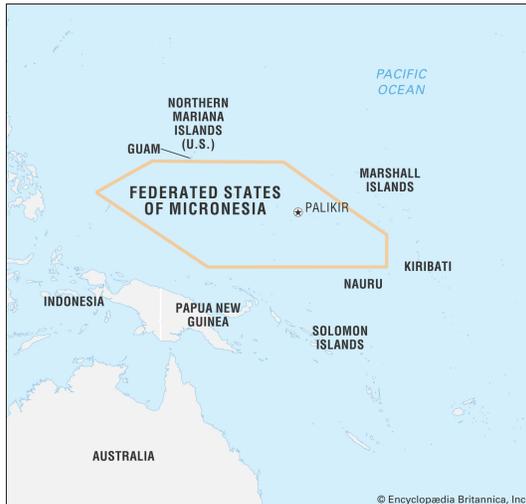
- Sluicing (Ross 1969; Merchant 2001) refers to clausal ellipsis that strands a *wh*-phrase (1).
 - (1) a. Johnny dropped something, but I don't know what <Johnny dropped>.
b. She's talking, but we're not sure to who <she's talking>.
- Some sluicing terminology:
 - * **Antecedent**: the first clause, 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 and 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 constituent 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 in Kaqchikel and Malagasy are grammatical, particularly those enforced by extraction restrictions.
- (3) Grammatical voice mismatches in Kaqchikel (Ranero 2019)
 - a. **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 <bought a bunch of flowers>.

- ▷ Using 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 a smaller, non-pseudocleft constituent (a relative TP).
 - Apparent voice mismatches 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), PF phenomena, or agreement phenomena (e.g., Pearson 2005; Stiebels 2006).

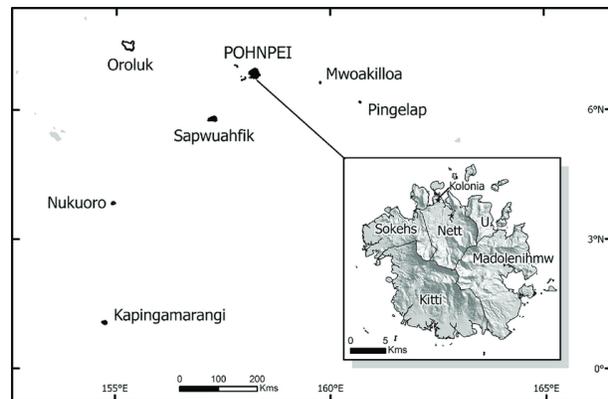
- Roadmap:
 - §2: Background on Nukuoro
 - §3: Pseudocleft sluicing
 - §4: Voice mismatches
 - §5: Wrap-up and implications

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.¹
- **Methodological note:** All sluicing data was elicited with a single speaker, who I am in contact with remotely during COVID-19. I plan to elicit these data with other speakers when in-person fieldwork is possible.



(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 (4).
 - Core arguments are not marked for case.
 - There is no verbal agreement with subjects or objects.
- (4) Soni ne lingi de koovee.
 Johnny PFV spill DET coffee
 ‘Johnny spilled the coffee.’

¹Funding for fieldwork was awarded through NSF REU #1461056 (2015); the Hanna Holborn Gray Fellowship at Bryn Mawr College (2016); and three Oswald Endangered Language Grants from UC Berkeley (2019, 2020, 2021). Documentary materials are archived with the Survey of California and Other Indigenous Languages and are available online: <http://dx.doi.org/doi:10.7297/X2M32T4N>.

- 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).

- (5) a. de nui **aa** 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’

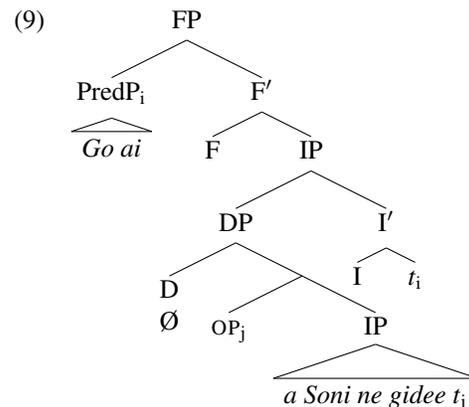
- Nukuoro also shows an ergative extraction restriction under relativization.
 - Intransitive subjects and transitive objects can be relativized using an unmarked gap (6a).
 - Relativizing a transitive subject requires the verb to appear in passive voice, which involves a suppletive verb root plus the optional particle *ina* (6b).

- (6) Extraction restriction
 a. Go ai adaa 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?’

- (7) 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, Nukuoro *wh*-questions are pseudoclefts, which consist of a predicate *wh*-phrase with a headless relative clause as its subject (8).
 - 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.

- (8) 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*]]?



- Embedded *wh*-questions use the same pseudocleft structure under the complementizer *be* (10).

(10) 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.’

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

- Common “dummy” heads include demonstratives like *deelaa* ‘that (one)’ (11b) and nouns like *mee* ‘thing’ or *dangada* ‘person’ (11c).

(11) 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.
- Potsdam (2007) argues for a semantic identity condition based on sluicing data from Malagasy, a VOS Austronesian language of Madagascar.
- Subject *wh*-questions in Malagasy are pseudoclefts (Paul 2000, 2001; Potsdam 2006a,b, 2007).
 - The *wh*-phrase is a fronted predicate which takes a headless relative clause as its subject (12).
 - This structure holds for both matrix and embedded *wh*-questions (13).

(12) [_{PredP} *wh-phrase*] [_{DP} OP_i no ... t_i]

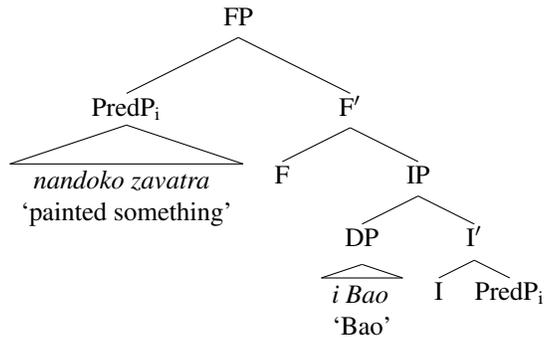
(13) a. iza no mividy ny osy?
 who PRT buy.AT the goat
 ‘Who is buying the goat?’
 b. nanontany aho hoe [iza no mividy ny osy].
 ask.AT 1SG.NOM COMP who PRT buy.AT the goat
 ‘I asked who is buying the goat.’

- Malagasy has a sluicing construction, which leaves only the embedded *wh*-word (14).

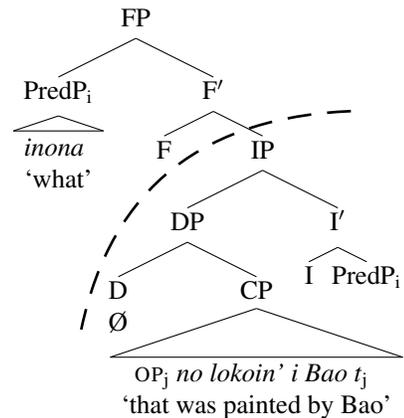
(14) nandoko zavatra i Bao fa hadinoko hoe inona <*no nolokoin’ i Bao*>.
 paint.AT thing Bao but forget.TT.1SG COMP what PRT paint.TT Bao
 ‘Bao painted something but I forget what <was painted by Bao>.’

- Potsdam assumes that Malagasy sluicing involves ellipsis of the clausal IP, which contains the subject relative clause DP in its specifier.
 - Since the antecedent need not contain a pseudocleft structure, Potsdam concludes that pseudocleft sluicing cannot be accounted for under syntactic identity.

(15) Antecedent structure (Potsdam 2007:589)



(16) Sluice structure (Potsdam 2007:590)



- I offer an alternative analysis of pseudocleft sluicing which is compatible with syntactic identity.
 - Sluicing may target the relative clause IP, rather than the matrix IP.
 - Evidence for this comes from Nukuoro, where overt relative heads may be stranded under sluicing.

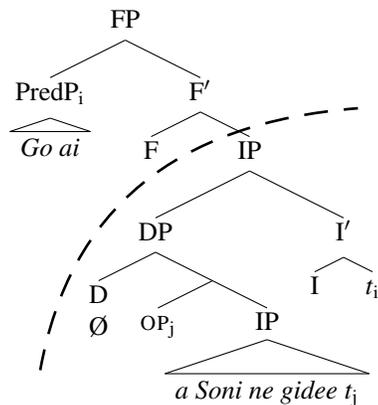
3.1 Pseudocleft sluicing is smaller

- Like Malagasy, Nukuoro has a sluicing construction (17) despite having pseudocleft *wh*-questions.

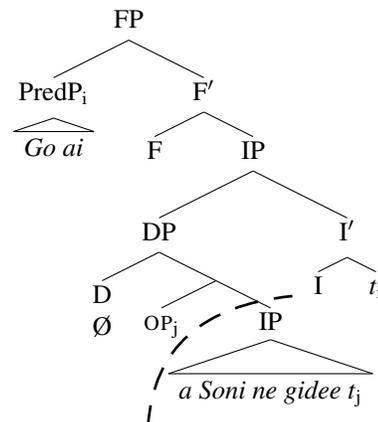
(17) *Soni ne gidee dahi dangada, gai au e dee iloo be go ai <a Soni ne gidee>.*
 Johnny PFV see one person but I NPST NEG know C FOC who GEN Johnny PFV see
 ‘Johnny saw someone, but I don’t know who.’

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

(18) Ellipsis of the matrix IP



(19) Ellipsis of the relative IP

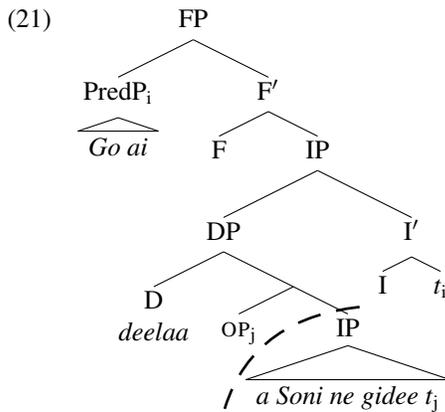


- When the relative head is null, as it is in (17), it’s impossible to tell which IP is elided.
 - Luckily, Nukuoro relative heads can optionally be overt!
- If the relative head is an overt “dummy” head, we see that it remains outside of the sluice (20).

- (20) *Soni ne gidee dahi dangada, gai au e dee iloo be go ai deela.*
 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.’

– Nukuoro sluices with and without *deela* pass diagnostics for sluicing, and fail diagnostics for cleft-based sources like pseudosluicing and spading (Appendix B); for instance, they can undergo sprouting and cannot host TP adjuncts (Merchant 2001:121; Potsdam 2007:609).

- This data can only be accounted for by the structure in (21), where the ellipsis doesn’t include the relative head.



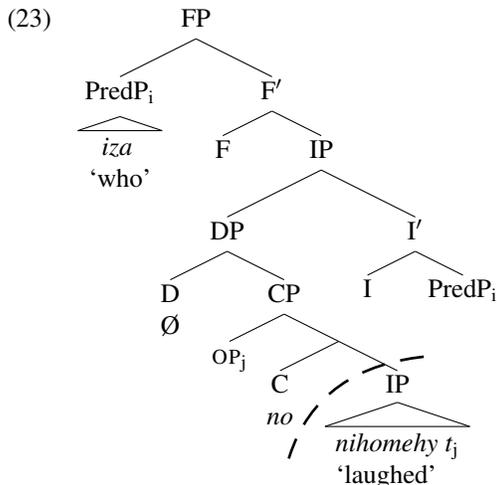
- ▷ If ellipsis only targets the relative clause IP, the sluice has a typical clause structure (rather than a pseudocleft) and can be syntactically identical to the antecedent.

3.2 Accounting for Malagasy

- We’ve accounted for Nukuoro sluicing with syntactic identity—what about Malagasy?
- The particle *no*, which Potsdam (2007) argues is in C^0 , is always elided under sluicing (22b).

- (22) a. *iza no nihomehy?*
 who PRT laughed
 ‘Who laughed?’ (Potsdam 2006b:3)
- b. *nisy olona nihomehy ka nanontany ianao hoe iza <no nihomehy>.*
 exist person laughed and ask.AT 2SG.NOM COMP who PRT laughed
 ‘Someone laughed and you asked who.’ (Potsdam 2007:584)

- This is a problem for an analysis of sluicing as relative IP ellipsis: *no* is outside of the ellipsis site (23).



- However, we know that C heads that immediately dominate sluices must be empty (Lobeck 1995; Merchant 2001:74-82), even in languages which allow doubly filled COMP filter violations.
 - Merchant (2001) offers a few explanations for this:
 - * One is to posit a special COMP filter specifically for sluicing.
 - * Another is to claim that complementizers typically depend on their rightward phonological material.
 - I suggest that the same phenomenon occurs in Malagasy, making it look like *no* is elided even though it is generated outside of the ellipsis site.
 - * Since Malagasy *wh*-phrases aren't in Spec,CP, a doubly-filled COMP filter wouldn't filter out *no*.
 - * A phonological story for the lack of C is more desirable for Malagasy.

4 Voice mismatches under sluicing

- Voice mismatches are ruled out under a syntactic identity condition on sluicing, as seen in English (24).

(24) 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 (25a).
 - 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 (25b).

- (25) 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 A 1S-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 A 1S-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 (26).
 - I will refer to these passives as *ergative extraction passives* (EE passives).

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

- An active antecedent can grammatically co-occur with an ergative extraction passive (27).

(27) 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 (28).

(28) 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 (29).
- A stative verb cannot mismatch with the active transitive form (30).

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

(30) *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	✓	(27)
Passive	EE passive	✓	(28)
Active	Causative	✗	(29)
Stative	Active	✗	(30)

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 (31).

(31) *Y’in **x-i-loq’-on**=pe pa k’ayib’äl. Ta-wla achike <**x-Ø-in-löq’=pe**>!
 1 SG COM-B 1 S-buy-AP=DIR PREP market IMP-guess what COM-B 3 S-A 3 S-buy=DIR
 Intended: ‘I bought (something) at the market. Guess what!’ (Ranero 2019:7)

- **The generalization:** Verbal inflection due to extraction can freely mismatch, but other verbal inflection cannot.

4.2 Repair by ellipsis

- 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.

(32) Adjunct clause island

- * Do you know who_i Dakota will be mad if Omri talks to t_i ?
- Dakota will be mad if Omri talks to someone. Do you know who <Dakota will be mad if Omri talks to t_i >?

(33) *That*-trace violation

- * I can't remember who_i Madison thought that t_i would win the race.
- 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 (34).

(34) Adjunct clause island in Nukuoro

- * 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?'
- 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?'

- It's not clear exactly how sluicing repairs islands; one prominent view holds that islands are PF violations, which allows them to be repaired by non-pronunciation (van Craenenbroeck and Merchant 2013; Lasnik and Funakoshi 2018).

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

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

– Ungrammaticality arises if this diacritic survives the derivation (35a).

– If the diacritic is deleted by ellipsis, however, it no longer causes a "crash" (35b).

(35) a. * Do you know who_i Dakota said she will be mad [☆ if Omri talks to t_i]?

- 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]>?

▷ I argue that the same repair analysis can be applied to the voice data.

– Sluices always contain the same voice as the antecedent.

– If an extraction violation occurs, it is repaired by ellipsis in the same way that islands are.

- We can demonstrate this analysis using the Nukuoro sluice from (27).

(27) 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 ☆ (36).
 - If this illicit movement were contained within a sluice, it would be deleted and the derivation “rescued”.

(36) *Go ai [☆ ne tugi Soni]?
 FOC who PFV hit Johnny
 ‘Who hit Johnny?’

- Let’s say that the sluice in (27) actually contains *active voice*.
 - Extraction of the ergative *wh*-phrase generates a movement violation.
 - Sluicing deletes this violation, as shown in (27’).

(27’) 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 (27’) 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 (28), the voice in the sluice is actually passive, unlike in (27’).

(28) 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.

(29) *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>.’

(30) *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

- ▷ We can maintain syntactic identity for pseudocleft sluicing and voice mismatches.
 - Pseudocleft sluices elide a smaller, non-pseudocleft constituent.
 - Voice “mismatches” can be analyzed as voice matches + repair under ellipsis.
- Sluicing data can shed some light on the nature of extraction restrictions.
 - If extraction restrictions can be repaired under sluicing, we reach the conclusion that **extraction restrictions are like islands** in some way.
 - * Maybe extraction restrictions can be unified with a treatment of islands, e.g., Coon et al. (2014) (or *that*-trace effects; 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.
- 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 (37), suggesting that it would also not repair ergative extraction restrictions.

(37) 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 and 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 (38) and predicative indefinites (39).
 - (38) 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?
 - (39) 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 (40) and predicate modifiers like *angeange* 'again' (41).
 - (40) [Ne hia] au mamu ne hudi?
PFV how.many 2SG.GEN fish PFV pull.in
'How many fish did you pull in?'
 - (41) 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.
 - (42) 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 (43).
- * Relativization of a PP requires pronominalization using the oblique resumptive pronoun *ai* (44).

(43) 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?’

(44) 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 (45).

- (45) 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 (46b) or an overt “dummy” noun like *tangada* ‘person’ (46c).

- (46) a. Go ai **OP**_i aau ne gidee *t*_i?
 FOC who 2SG.GEN PFV see
 ‘Who did you see?’
- b. Go ai **deela**_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.
 - Sluicing involves IP ellipsis, such that the constructions above would have the underlying structure represented in (47).

- (47) ... gai au e dee iloo be go ai (deela) <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>.’

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

- *Pseudosluices* are clefts, which consist of a copula and an expletive subject (48). In a language like Nukuoro that has a null copula and null expletive, sluices would look identical to pseudosluices (49).

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

- (49) 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 (50), a construction originally documented in Dutch (van Craenenbroeck 2004).

- (50) 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 and 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 (51).

- (51) 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.

- (52) a. Soni gu haga-mmuni de sseene, gai au e dee iloo be go hee (deela).
 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 (deela).
 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.

- (53) 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 (54).

- (54) 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.

- (55) 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’.

- (56) Soni gu kave Mina gi de hale golea, gai au e dee iloo be go ai (deela) 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.’
- (57) 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: *deela* 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 *deela*.

B.1 Non-linguistic antecedents

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

- (58) [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.

(59) [Context: I show you picture of an unfamiliar person.]

- # 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.’
- Au gu lodo loo gi iloo au be go ai deela.
1SG INC want loo to know 1SG C FOC who that
‘I want to know who that is.’

(60) [Context: I show you picture of an unfamiliar place.]

- # 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.’
- Au gu lodo loo gi iloo au be go hee deela.
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 *deela*.

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.

(61) Buy a gift for your mother.

- What, for example? (sluice)
- # 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.

(62) Hagaona dahi gisagisa maa doo dinana.
buy.PASS one gift for your mother
‘Buy a gift for your mother.’

- Se aha (e heohi ange)?
COP.SG what NPST correct AND
‘What (would be fitting)?’
- # Se aha deela (e heohi ange)?
COP.SG what that NPST correct AND
Intended: ‘What is it (that would be fitting)?’

(63) Gaavena dahi dangada gi de hale golea.
send.PASS one person to DET house sell
‘Send somebody to the store.’

- Go ai (e heohi ange)?
FOC who NPST correct AND
‘Who (would be fitting)?’
- # Go ai deela (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 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.