

Quantifier Float and the Driving Force for Movement: Evidence from Janitzio P'urhepecha*

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1 Introduction

- An interesting and well-known fact about sentences containing a quantified nominal phrase:
- In many languages, they alternate with sentences in which the nominal phrase seems to have been split in two, and at least one of the pieces placed in a different position (Maling 1976, Sportiche 1988, Giusti 1990, Shlonsky 1991, Baltin 1995, Torrego 1996, Benmamoun 1999, McCloskey 2000, Bobaljik 2003, Fitzpatrick 2006, Yatabe 2010, Tescari Neto 2012, a.o.).
 - (1) a. **All the walruses** are painting murals.
b. **The walruses** are **all** painting murals.
- It seems, at least initially, as though the *all* in (1a) has floated off its **associate** *the walruses* to form (1b), so we say that sentences like (1b) exhibit **quantifier float**.
- The quantifier float alternation raises the following question:

How are floated and nonfloated sentences derived? That is, what syntactic atoms and operations are responsible for the alternation?

- Two main types of analyses of the alternation have been put forth in the literature.
- On the **stranding** analysis (Sportiche 1988, Giusti 1990, Shlonsky 1991, McCloskey 2000; see also Fitzpatrick 2006), the floated quantifier in a sentence like (1b) forms an underlying constituent with its associate...
- ...but this constituent gets broken up when the associate moves out of it, “stranding” the quantifier:

(2) *Quantifier float as stranding*

[The walruses]_i are [all ____i] painting murals.

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- On the **adverbial** analysis (Baltin 1995, Torrego 1996, Benmamoun 1999, Bobaljik 2003; see also Fitzpatrick 2006), a floated quantifier and its associate do not form a constituent at any level of representation.
- Rather, floated quantifiers are adverbial elements. On many versions of the adverbial analysis, floated quantifiers are analyzed as adjuncts to the verb phrase or to some other projection in the clausal spine:

(3) *Quantifier float as adverbial adjunction*

[The walruses]_i are [_{vP} all [_{vP} ____i painting murals]].

- A floated quantifier and its associate, then, form an underlying constituent on the stranding analysis, but not on the adverbial analysis.
- Which of these analyses, or what type of combination of them, should be adopted has been the subject of a great deal of investigation, but no fieldwide consensus has emerged.
- Here, I investigate quantifier float in P’urhepecha—an isolate of central-western Mexico spoken by >120,000 people (INEGI 2010), primarily in the state of Michoacán. . .
- . . .and specifically in the variety of this language spoken on the island of Janitzio on Lake Pátzcuaro, henceforth **Janitzio P’urhepecha**.
- P’urhepecha is an exclusively suffixing, head- and dependent-marking, nominative-accusative agglutinative language with relatively flexible constituent order (Wares 1974, Capistrán 2002, Chamoreau 2007, Mendoza 2007, Vázquez-Rojas Maldonado 2011).
- Today, I will argue that. . .

- (4) a. The facts of quantifier float in Janitzio P’urhepecha strongly support the **stranding** analysis of quantifier float, posing a challenge to “adverbial adjunction only” analyses of the phenomenon.
- b. The facts of DP movement generally in Janitzio P’urhepecha provide strong evidence for **altruistic** (target-driven) movement, challenging views (e.g., Bošković 2007) on which all movement is greedy.

1.1 Roadmap

- §2: Surveying the empirical terrain: where quantifiers can and can’t float
- §3: Clause structure and verb raising
- §4: Quantifier float: stranding or adjunction?
- §5: DP movement: altruistic or greedy?
- §6: Conclusion

2 Surveying the empirical terrain: where quantifiers can and can't float

2.1 Subjects

- In Janitzio P'urhepecha, quantifier float is possible from (at least some) subjects.
- First, some sentences in which quantifier float has not taken place:¹

(5) *No quantifier float*

a. Iamindu uatsapicha ch'anaxatisi juatarhu.

Iamindu uatsapi-cha ch'ana-xa-Ø-ti=sī juata-rhu.
all child-PL play-DUR-PRS-IND+3=3pS hill-LOC
'All the kids are playing on the hill.'

b. Iamindu uasisicha karasindisi inchatirueri.

Iamindu uasisi-cha kara-sin-Ø-di=sī inchatiru-eri.
all bat-PL fly-HAB-PRS-IND+3=3pS afternoon-GEN
'All bats fly in the afternoon.'

- In a nominal introduced by *iamindu* 'all', the phrase-final plural marker can optionally be copied onto the quantifier (optional concord):

(6) *No quantifier float; plural concord*

a. Iamindueecha uatsapicha ch'anaxatisi juatarhu.

Iamindu-eecha uatsapi-cha ch'ana-xa-Ø-ti=sī juata-rhu.
all-PL child-PL play-DUR-PRS-IND+3=3pS hill-LOC
'All the kids are playing on the hill.'

b. ?Iamindueecha uasisicha karasindisi inchatirueri.

?**Iamindu-eecha uasisi-cha** kara-sin-Ø-di=sī inchatiru-eri.
all-PL bat-PL fly-HAB-PRS-IND+3=3pS afternoon-GEN
'All bats fly in the afternoon.'

- On to quantifier float. The quantifier and the associate in sentences like (6a-b) can be inverted, producing sentences like the following:

(7) *"Short-distance" quantifier float*

a. ?Uatsapicha iamindueecha ch'anaxatisi juatarhu.

?**Uatsapi-cha iamindu-eecha** ch'ana-xa-Ø-ti=sī juata-rhu.
child-PL all-PL play-DUR-PRS-IND+3=3pS hill-LOC
'The kids are all playing on the hill.'

b. Uasisicha iamindueecha karasindisi inchatirueri.

Uasisi-cha iamindu-eecha kara-sin-Ø-di=sī inchatiru-eri.
bat-PL all-PL fly-HAB-PRS-IND+3=3pS afternoon-GEN
'Bats all fly in the afternoon.'

¹**Abbreviations used:** ACC, accusative; AFF, emphatic affirmation; CENTRIF, centrifugal; COM, comitative; DAT, dative; DIST, distal (demonstrative); DUR, durative; FOC, focus; FUT, future; GEN, genitive; HAB, habitual; IND, indicative; INF, infinitive; INT, interrogative; LOC, locative; PASS, passive; PFV, perfective; PL, plural; pO, plural object agreement; PRS, present; PTCP, participle; RESP, respectful; 1, first person; 1pS, first person plural subject; 1sS, first person singular subject; 3, third person; 3pS, third person plural subject.

- Finally, a floated quantifier and its associate can be separated by other material:

(8) “Long-distance” quantifier float

a. Uatsapicha ch’anaxatiksī iamindueecha juatarhu.

Uatsapi-cha ch’ana-xa-Ø-ti=ksī **iamindu-eecha** juata-rhu.
 child-PL play-DUR-PRS-IND+3=3pS all-PL hill-LOC
 ‘The kids are all playing on the hill.’

b. Uasisīcha karasīdisī iamindueecha inchatirueri.

Uasisī-cha kara-sīn-Ø-di=sī **iamindu-eecha** inchatiru-eri.
 bat-PL fly-HAB-PRS-IND+3=3pS all-PL afternoon-GEN
 ‘Bats all fly in the afternoon.’

- Although plural concord in *iamindu* ‘all’-nominals is normally optional, it is obligatory when *iamindu* is floated:

(9) Quantifier float requires plural concord

a. *Uatsapicha iamindu ch’anaxatisī juatarhu.

*Uatsapi-cha **iamindu** ch’ana-xa-Ø-ti=sī juata-rhu.
 child-PL all play-DUR-PRS-IND+3=3pS hill-LOC
 int. ‘The kids are all playing on the hill.’

b. *Uatsapicha ch’anaxatisī iamindu juatarhu.

*Uatsapi-cha ch’ana-xa-Ø-ti=sī **iamindu** juata-rhu.
 child-PL play-DUR-PRS-IND+3=3pS all hill-LOC
 int. ‘The kids are all playing on the hill.’

2.2 Nonsubjects

- We have seen that subjects in Janitzio P’urhepecha allow both “short-distance” and “long-distance” quantifier float.
- Nonsubjects, though, turn out to forbid short-distance quantifier float. (We return to long-distance quantifier float from nonsubjects in §4.)
- First, a baseline sentence with no quantifier float:

(10) Direct object: no quantifier float

Piaasikani iamindu(eechani) uaxantsikueechani.

Pia-a-sī-Ø-ka=ni **iamindu(-eecha-ni)** **uaxantsikua-echa-ni**.
 buy-pO-PFV-PRS-IND+1=1sS all(-PL-ACC) chair-PL-ACC
 ‘I bought all the chairs.’

- If quantifier float is attempted from a direct object introduced by *iamindu* ‘all’, the result is fully unacceptable, regardless of how much concord there is:

(11) Direct objects forbid short-distance quantifier float

*Piaasikani uaxantsikueechani iamindu(eecha(ni)).

*Pia-a-sī-Ø-ka=ni **uaxantsikua-echa-ni iamindu(-eecha(-ni))**.
 buy-pO-PFV-PRS-IND+1=1sS chair-PL-ACC all(-PL(-ACC))
 int. ‘I bought all the chairs.’

- Quantifier float is equally impossible from a notional indirect object, regardless of whether it precedes or follows the direct object:

(12) DO-IO order

- a. *Indirect object: no quantifier float*

Intsimpeaskani katsikueechani iamindu(eechani) achatichani.

Intsimpe-a-s-∅-ka=ni katsikua-echa-ni **iamindu(-eecha-ni)** **achati-cha-ni.**
 give.as.gift-pO-PFV-PRS-IND+1=1sS hat-PL-ACC all(-PL-ACC) man(RES)-PL-ACC
 ‘I gave hats to all the men as a gift.’

- b. *The indirect object forbids short-distance quantifier float*

*Intsimpeaskani katsikueechani achatichani iamindueechani.

*Intsimpe-a-s-∅-ka=ni katsikua-echa-ni **achati-cha-ni** **iamindu-eecha-ni.**
 give.as.gift-pO-PFV-PRS-IND+1=1sS hat-PL-ACC man(RES)-PL-ACC all-PL-ACC
 int. ‘I gave hats to all the men as a gift.’

(13) IO-DO order

- a. *Indirect object: no quantifier float*

Intsimpeaskani iamindu(eechani) achatichani katsikueechani.

Intsimpe-a-s-∅-ka=ni **iamindu(-eecha-ni)** **achati-cha-ni** katsikua-echa-ni.
 give.as.gift-pO-PFV-PRS-IND+1=1sS all(-PL-ACC) man(RES)-PL-ACC hat-PL-ACC
 ‘I gave all the men hats as a gift.’

- b. *The indirect object forbids short-distance quantifier float²*

*Intsimpeaskani achatichani iamindueechani katsikueechani.

*Intsimpe-a-s-∅-ka=ni **achati-cha-ni** **iamindu-eecha-ni** katsikua-echa-ni.
 give.as.gift-pO-PFV-PRS-IND+1=1sS man(RES)-PL-ACC all-PL-ACC hat-PL-ACC
 int. ‘I gave the men₁ all₁ hats as a gift’, i.e.,
 ‘I gave all the men hats as a gift.’

- Finally, short-distance quantifier float is also impossible from the object of a postposition:

(14) a. *Object of a postposition: no quantifier float*

Anchikuarisingani iamindu(eechani) achatichani jingoni.

Anchikuari-sin-∅-ka=ni **iamindu(-eecha-ni)** **achati-cha-ni** jingoni.
 work-HAB-PRS-IND+1=1sS all(-PL-ACC) man(RES)-PL-ACC with
 ‘I work with all the men.’

- b. *The object of the postposition forbids short-distance quantifier float*

*Anchikuarisingani achatichani iamindueechani jingoni.

*Anchikuari-sin-∅-ka=ni **achati-cha-ni** **iamindu-eecha-ni** jingoni.
 work-HAB-PRS-IND+1=1sS man(RES)-PL-ACC all(-PL-ACC) with
 int. ‘I work with all the men.’

²The judgment here is keyed to the reading indicated. This sentence is predicted to be acceptable, given appropriate prosody, on the interpretation ‘I gave the men all the hats as a gift’, which would correspond to a parse involving an unfloat ed *direct* object quantifier.

- What we’ve learned so far:

(15) *Quantifier float possibilities in Janitzio P’urhepecha*

Type of constituent	Type of quantifier float	Status
Subject	Short-distance (<u>THE.KIDS</u> <u>ALL</u> ARE.PLAYING ON.THE.HILL)	✓
	Long-distance (THE.KIDS ARE.PLAYING <u>ALL</u> ON.THE.HILL)	✓
Direct object	Short-distance (I.BOUGHT <u>THE.CHAIRS</u> <u>ALL</u>)	*
Indirect object	Short-distance (I.GIFTED <u>THE.MEN</u> <u>ALL</u> HATS, IO-DO order)	*
	Short-distance (I.GIFTED HATS <u>THE.MEN</u> <u>ALL</u> , DO-IO order)	*
Object of a postposition	Short-distance (I.WORK <u>THE.MEN</u> <u>ALL</u> WITH)	*

- With this much established, we’re almost ready to start to determine what side of the “stranding vs. adjunction” debate the Janitzio P’urhepecha facts tell in favor of.
- But in order to do this, we need to know something about the clause structure of the language.

3 Clause structure and verb raising

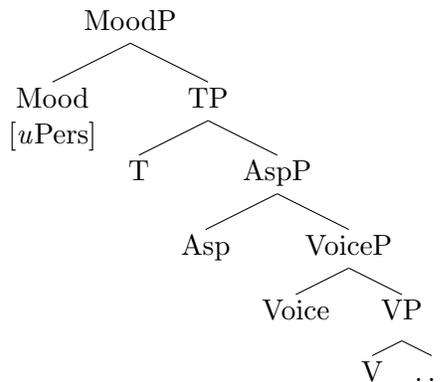
- What is the structure of a Janitzio P’urhepecha clause?
- The verb word in Janitzio P’urhepecha has the following morphological structure:

(16) *Morphological structure of the Janitzio P’urhepecha verb word*³

√ROOT	(Derivational Suffixes)	Voice	Aspect	Tense	Mood+Person
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- By the general logic of the Mirror Principle (Baker 1985:375, (4)), this provides evidence for (at least) the following clause structure for Janitzio P’urhepecha:⁴

(17)



- Where in this structure does (or can) the verb surface? To figure this out, we can borrow a venerable diagnostic from Pollock (1989): the verb’s linear position with respect to adverbs.

³There is no overt voice suffix in the active voice.

⁴For the decomposition of the verb phrase into a bipartite structure, see Larson (1988, 1990), Kratzer (1996), Harley (2008), and Krejci and Tallman (2015). There is some evidence that such a bipartite structure is right for Janitzio P’urhepecha specifically. In this language, the verb in a ditransitive verb phrase normally precedes both the direct and the indirect object (which can occur in either order). But the linearly earlier object seems to c-command the linearly later one, judging by the Barss-Lasnik tests (Barss & Lasnik 1986) that can be run, namely variable binding and *mandani ... materu* (*≈ each ... the other*). See Jackendoff (1990) and Bruening (2014), however, for analyses on which Barss-Lasnik effects do not diagnose c-command.

- The lowest adverbs for which I have data are *xarhintkueri* ‘early’, *sesi* ‘well’, *ikichakueni jasi* ‘badly’, and *eskaparini* ‘carefully’. The verb can surface to their right, suggesting that it can stay extremely low:

(18) Iasi nande xarhintkueri mikantasiti meiapekuani.

Iasi nande **xarhintkueri** mikanta-si-Ø-ti meiapekua-ni.
 today mother early close-PFV-PRS-IND+3 store-ACC
 ‘Today Mom closed the store early.’

- But the verb can also surface to the left of these adverbs, suggesting that Janitzio P’urhepecha has optional verb raising:

(19) Iasi nande mikantasiti xarhintkueri meiapekuani.

Iasi nande mikanta-si-Ø-ti **xarhintkueri** meiapekua-ni.
 today mother close-PFV-PRS-IND+3 early store-ACC
 ‘Today Mom closed the store early.’

- In fact, the verb has the option of preceding *all* the adverbs for which I have data up to and including *jimamberi* ‘then’:⁵

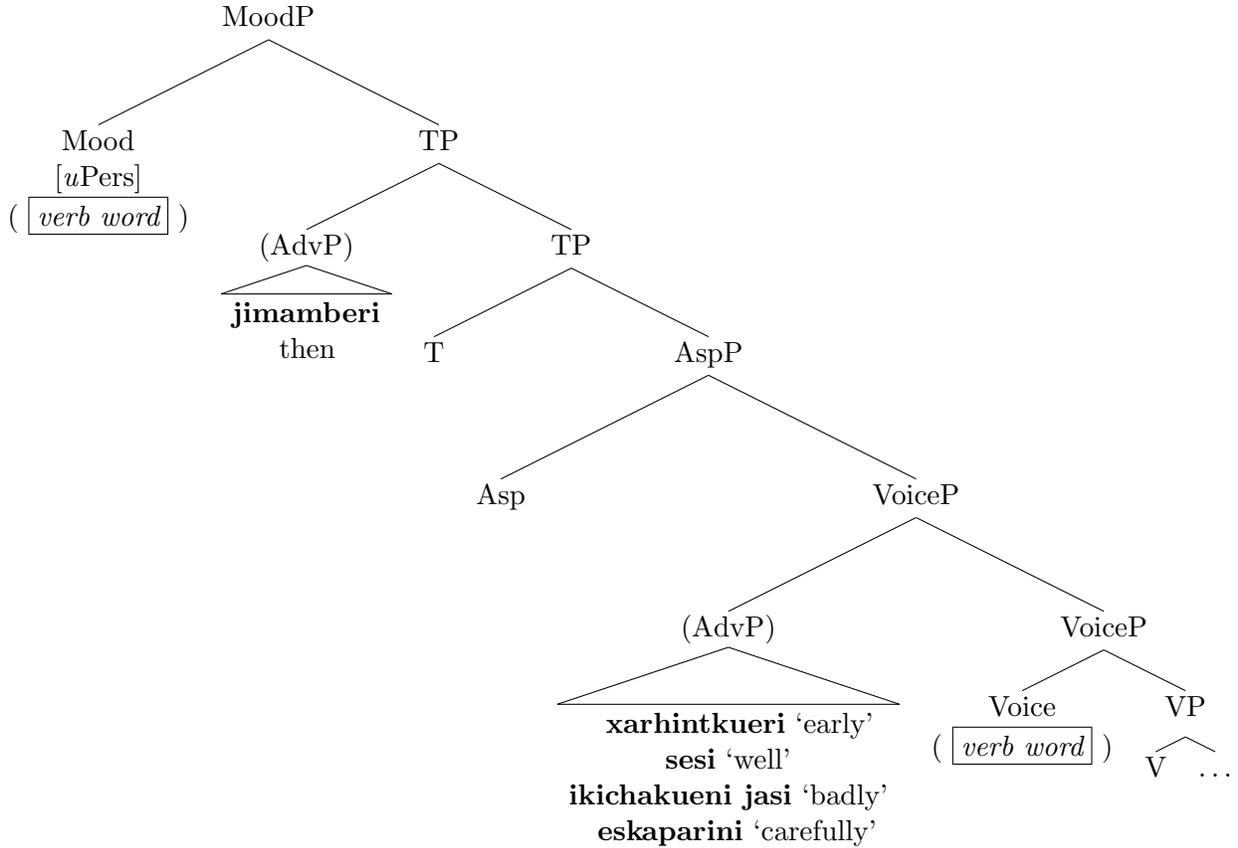
(20) Materu uexurini erekaakasä materu eretarhu. Erentaakasä jimamberi sanderu sesi.

Materu uexurini ereka-a-Ø-ka=sä materu ereta-rhu. Erenta-a-Ø-ka=sä **jimamberi**
 another year live-FUT-PRS-IND+1=1pS another town-LOC. live-FUT-PRS-IND+1=1pS then
 sanderu sesi.
 more well
 ‘Next year we’ll live in another town. Then we’ll live better.’

- Modifying proposals by Cinque (1999) and Tescari Neto (2013:30), let us posit that *xarhintkueri* ‘early’ and manner adverbials adjoin to VoiceP and *jimamberi* ‘then’ to TP.
- If this is so, then the verb’s ability to either follow the low adverbials or precede *jimamberi* ‘then’ suggests that it can surface either in Voice (see fn. 4) or in Mood (at least):

⁵Except for *nandi* ‘perhaps, maybe’, which suggests that this adverb is higher than *jimamberi* ‘then’ in Janitzio P’urhepecha.

(21) *The clause structure of Janitzio P'urhepecha*



- The polarity particles *ambu* ‘not’ and *k’o* (which expresses verum focus or emphatic affirmation) seem to occur higher than Mood:

- (22) a. Iasī *ambu* ts’irakuare.
 Iasī **ambu** [ts’ira-kuare-∅-∅-∅].
 today not be.cold-REFL-PFV-PRS-IND
 ‘It’s not cold today.’
- b. Iasī *k’o* ts’irakuaresīti.
 Iasī **k’o** [ts’ira-kuare-sī-∅-ti].
 today AFF be.cold-REFL-PFV-PRS-IND+3
 ‘Today it IS cold.’

- A natural hypothesis is that they instantiate a functional category Pol(arity) immediately above Mood.
- The finite verb cannot incorporate into Pol ((23a)), and, as this fact leads us to expect, it cannot raise past Pol ((23b)):

- (23) a. *Iasī ts’irakuareambu.
 *Iasī [ts’ira-kuare-∅-∅-∅]-**ambu**.
 today be.cold-REFL-PFV-PRS-IND-not
 int. ‘It’s not cold today.’

b. *Iasi ts'irakuare ambu.

*Iasi ts'ira-kuare-∅-∅-∅ **ambu.**
 today be.cold-REFL-PFV-PRS-IND not
 int. 'It's not cold today.'

- Finally, the adverbial *sesimindu uandantani ia* 'honestly / frankly / to tell you the truth' (a nonfinite clause meaning literally 'to inform very well') must precede the polarity particles *ambu* 'not' and *k'o* 'AFF':

(24) a. Sesimindu uandantani ia ambu aparekuarinaki.

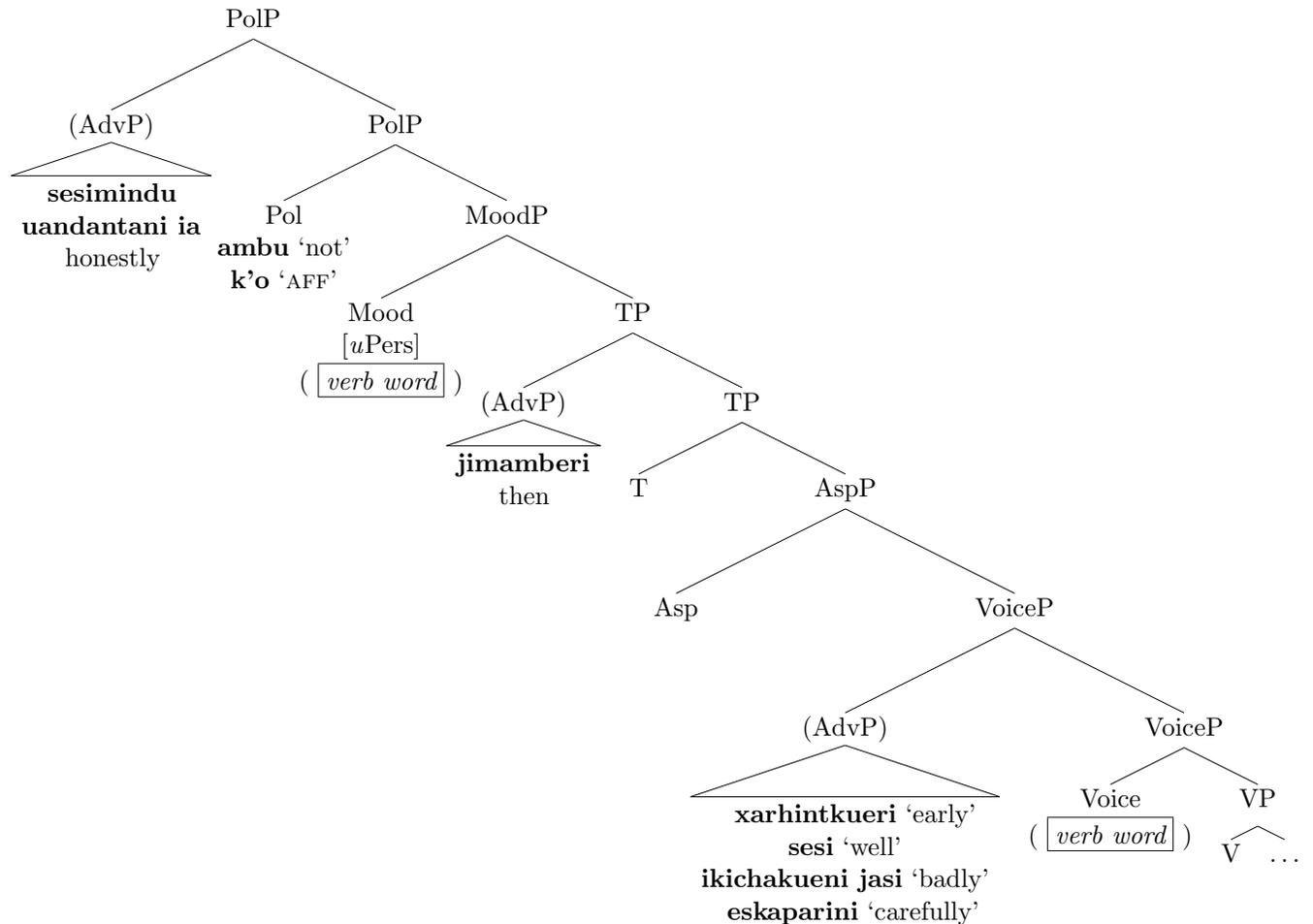
Sesi=mindu uandanta-ni ia ambu apare-kuari-na-∅-ki.
 well=very inform-INF already not be.hot-REFL-DUR-PRS-INT
 'It's honestly not hot [out].'

b. *Ambu sesimindu uandantani ia aparekuarinaki.

*Ambu **sesi=mindu uandanta-ni ia** apare-kuari-na-∅-ki.
 not well=very inform-INF already be.hot-REFL-DUR-PRS-INT
 int. 'It's honestly not hot [out].' / 'It's not honestly hot [out].'

- Taking *sesimindu uandantani ia* 'honestly' to adjoin to PolP, we arrive at the following revised clause structure for Janitzio P'urhepecha:

(25) *Janitzio P'urhepecha clause structure (revised)*



- With this basic understanding in place, we can now turn to the question of whether floating quantifiers in Janitzio P'urhepecha are stranded adnominal quantifiers or adverbial elements.

4 Quantifier float: stranding or adjunction?

4.1 The distributional predictions

- The stranding and adverbial analyses make different predictions about the distribution of floating quantifiers (Bobaljik 2003, Fitzpatrick 2006):

(26) *Distributional predictions*

- Stranding analysis:** Floating quantifiers should appear in DP positions (specifically, positions that DPs can be merged in and then move out of).
- Adverbial analysis:** Floating quantifiers should not appear in DP positions.

- What *are* the DP positions in Janitzio P’urhepecha?⁶ Let’s begin with subjects.
- In Janitzio P’urhepecha, the subject can surface to the right of the low adverbials *xarhintkueri* ‘early’, *sesi* ‘well’, and *exeparini* ‘carefully’:

(27) Uitsindekua mitantasitisi xarhintkueri iamindu uariticha ts’imeri meiapekueechani.

Uitsindekua mitanta-si-∅-ti=sī **xarhintkueri** iamindu uariti-cha ts’im-eri
 yesterday open-PFV-PRS-IND+3=3pS early all woman(RESP)-PL 3.PL-GEN
 meiapekua-echa-ni.
 store-PL-ACC
 ‘Yesterday all the women opened up their stores early.’ → [Spec, VoiceP]

- It can surface before an adverbial of this class but after *isku jauembarini* ‘suddenly’ (which, modifying proposals in Cinque 1999 and Tescari Neto 2013:30, I take to adjoin to AspP):

(28) Untasitisi isku jauembarini iamindu iurhitskiricha kanekua sesi ts’imeri kojtsitarakueechani.

U-nta-si-∅-ti=sī **isku jauembarini** iamindu iurhitskiri-cha **kanekua sesi** ts’im-eri
 make-ITER-PFV-PRS-IND+3=3pS suddenly all-PL young.woman-PL very well 3-GEN
 kojtsitarakua-echa-ni.
 table-PL-ACC
 ‘All the young women suddenly fixed their tables very well.’ → [Spec, AspP]

- Or between *jimamberi* ‘then’ and *sesimindu uandantani ia* ‘honestly’:

(29) Sesimindu uandantani ia iamindu kustaticha jimamberi erentaatisi materu eretarhu.

Sesi=mindu uandanta-ni ia iamindu kustati-cha **jimamberi** erenta-a-∅-ti=sī
 well=very inform-PL already all musician-PL then live-FUT-PRS-IND+3=3pS
 materu ereta-rhu.
 other town-LOC
 ‘To tell you the truth, all the musicians will (by) then live in another town.’ → [Spec, MoodP]

⁶I use the term *DP* in connection with Janitzio P’urhepecha largely for convenience. The question of how much evidence there is for this exact category in the language would be well worth investigating. See Bošković and Şener (2014) for arguments that Turkish has NPs but not DPs, and Bruening (2009) for arguments against the DP Hypothesis in general.

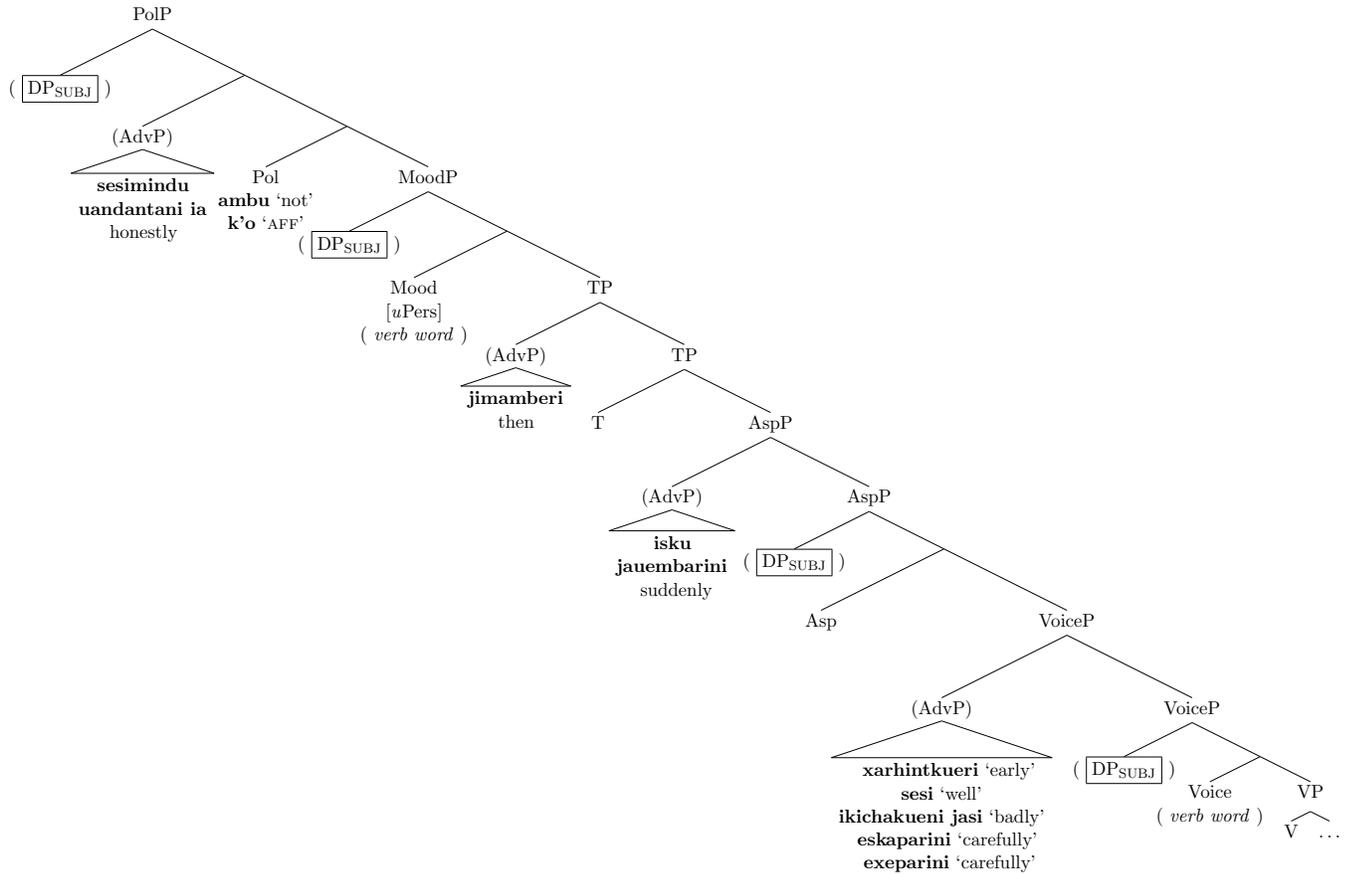
- Or before *sesimindu uandantani ia* ‘honestly’:

(30) *Iamindu uatsapicha sesimindu uandantani ia sesi t’iresītisi.*

Iamindu uatsapi-cha **sesi=mindu uandanta-ni ia** sesi t’ire-si-Ø-ti=sī.
 all child-PL well=very inform-INF already well eat-PFV-PRS-IND+3=3pS
 ‘All the kids honestly ate well.’ → [Spec,PolP]

- Our revised clause structure, then, is the following:

(31) *Janitzio P’urhepecha clause structure (final version; subject positions boxed)*



- As we can see, Janitzio P’urhepecha has a rich syntax of subjecthood. It allows its subjects to surface in many different positions. . .
- . . .each of which affords us an opportunity to test the distributional predictions.
- It turns out that a quantifier can be floated in each of these positions. We begin with [Spec,VoiceP]:

(32) *Uitsindegua uariticha mitaantasītisi xarhintkueri iamindueecha ts’imeri meiapekueechani.*

Uitsindegua uariti-cha mita-a-nta-si-Ø-ti=sī **xarhintkueri** iamindu-eecha
 yesterday woman(RESP)-PL open-pO-ITER-PFV-PRS-IND+3=3pS early all-PL
 ts’im-eri meiapekua-echa-ni.
 they-GEN store-PL-ACC
 ‘Yesterday the women all opened up their stores early.’

- A quantifier can also be floated in [Spec,AspP]:

(33) Iurhitskiricha untasītisi isku jauembarini iamindueecha kanekua sesi ts’imeri kojtsitarakueechani.

Iurhitskiri-cha u-nta-si-∅-ti=sī **isku jauembarini** iamindu-eecha **kanekua sesi**
 young.woman-PL make-ITER-PFV-PRS-IND+3=3pS suddenly all-PL very well
 ts’im-eri kojtsitarakua-echa-ni.
 3-GEN table-PL-ACC
 ‘The young women suddenly all fixed their tables very well.’

- Or in [Spec,MoodP]:

(34) Kustaticha sesimindu uandantani ia iamindueecha jimamberi erentaatisi materu eretarhu.

Kustati-cha **sesi=mindu uandanta-ni ia** iamindu-eecha **jimamberi**
 musician-PL well=very inform-INF already all-PL then
 erenta-a-∅-ti=sī materu ereta-rhu.
 live-FUT-PRS-IND+3=3pS other town-LOC
 ‘The musicians will honestly all (by) then live in another town.’

- Or in [Spec,PolP] (we use here as our landmark *sesimindu uandantani ia* ‘honestly’):

(35) ?Uatsapicha iamindueecha sesimindu uandantani ia sesi t’iresitisi.

? Uatsapi-cha iamindu-eecha **sesi=mindu uandanta-ni ia** sesi t’ire-si-∅-ti=sī.
 child-PL all-PL well=very inform-INF already well eat-PFV-PRS-IND+3=3pS
 ‘The kids all honestly ate well.’

- If a quantifier really can be floated in [Spec,PolP], then it should be possible for an Associate-Quantifier sequence to precede a polarity particle. This prediction is correct:

(36) Uatsapicha uitsindekua iamindueecha ambu jikua.

Uatsapi-cha uitsindekua iamindu-eecha **ambu jikua-∅-∅-∅**.
 boy-PL yesterday all-PL not bathe-PFV-PRS-IND
 ‘The boys yesterday all didn’t bathe.’

(37) ?Uichueecha iamindueecha ambu ch’ana.

? Uichu-eecha iamindu-eecha ambu ch’ana-∅-∅-∅.
 dog-PL all-PL not play-PFV-PRS-IND
 ‘The dogs all didn’t play.’ (= None of them played.)

- Quantifiers can also be floated in nonsubject positions (when long-distance quantifier float has occurred).
- For example, a quantifier can be floated in direct object position, as shown in (38). A low adverb has been included in this example to ensure that the verb and the floated object quantifier are both low.

(38) Ambu uanta p’orhechichani, peru kukuchichani sesi uantasikani IAMINDUEECHANI.

Ambu u-a-nta-∅-∅-∅ p’orhechi-cha-ni, peru kukuchi-cha-ni **sesi**
 not make-pO-ITER-PFV-PRS-IND pot-PL-ACC but jug-PL-ACC well
 u-a-nta-si-∅-ka=ni IAMINDU-EECHA-NI.
 make-pO-ITER-PFV-PRS-IND+1=1sS all-PL-ACC
 ‘I didn’t fix the pots, but the jugs I fixed all of well.’

- This is equally possible with notional indirect objects:

(39) Ambu intskuanta takukateechani charakueechani, peru uatsapichani exeparini intskuantasikani
IAMINDUEECHANI.

Ambu intsku-a-nta-∅-∅-∅ takukata-echa-ni charaku-eecha-ni, peru uatsapi-cha-ni
not give-pO-ITER-PFV-PRS-IND book-PL-ACC baby-PL-ACC but child-PL-ACC
exe-pa-rini intsku-a-nta-si-∅-ka=ni IAMINDU-EECHA-NI.
see-CENTRIF-PTCP.PRS give-pO-ITER-PFV-PRS-IND+1=1sS all-PL-ACC
'I didn't give books to the babies, but the kids I carefully gave [books] to all of.'

- And with passive subjects:

(40) Joskueecha sesi exenasindisi iamindueecha CHURIKUERI.

Joskua-echa **sesi** exe-na-sin-∅-di=si iamindu-eecha CHURIKU-ERI.
star-PL well see-PASS-HAB-PRS-IND+3=3pS all-PL night-GEN
'The stars can all be seen well at NIGHT.'

- A quantifier can also be floated in the left-peripheral focus position, which immediately precedes the focus clitic =si ([Spec,FocP], Capistrán 2002; cf. Rizzi 1997):

(41) Tumbicha ambu arinta imani takukata, peru iurhitskiricha uitsindekua IAMINDUEECHA arintati.

Tumbi-cha ambu arinta-∅-∅-∅ ima-ni takukata, peru iurhitskiri-cha uitsindekua
young.man-PL not read-PFV-PRS-IND+3 that(DIST)-ACC book but young.woman-PL yesterday
IAMINDU-EECHA=si arinta-∅-∅-ti.
ALL-PL=FOC read-PFV-PRS-IND+3
'The young men didn't read that book, but the young women yesterday ALL read it.'

- However, this position can host both nominals and adverbials (cf. Lizárraga Navarro 2013:245-47), so sentences like (41) do not help us choose between the stranding and adverbial analyses.

- Our distributional results are summarized here:

(42) *Distribution of floated quantifiers and ordinary DPs in Janitzio P'urhepecha*

	DP position	Acceptability of floating a quantifier in that position
a.	[Spec,VoiceP] (subjects)	✓
b.	[Spec,AspP] (subjects)	✓
c.	[Spec,MoodP] (subjects)	✓
d.	[Spec,PolP] (subjects)	? (as diagnosed using <i>sesimindu uandantani ia</i> 'honestly')
		✓ (as diagnosed using <i>ambu</i> 'not')
e.	Direct object position	✓
f.	Direct object position (passive subject)	✓
g.	Indirect object position	✓
h.	[Spec,FocP]	✓

- As shown in (42), the distribution of floated quantifiers tracks that of ordinary DPs extremely faithfully.
- This is predicted by the stranding analysis, but is unexpected on the adverbial analysis.

4.2 Case matching

- The floating quantifiers we have seen all bear the same case as their associates:
- Subject-oriented floating quantifiers bear nominative case, and direct- and indirect-object-oriented ones bear accusative case.
- Are analogous case-matching effects observed with other cases? Yes:

(43) *Genitive case*

Ambu uandontskuarisĩ uaxastakueecheri, peru orepaticheri uandontskuarisĩkasĩ IAMINDUEECHERI.

Ambu uandontskuari- \emptyset - \emptyset - \emptyset =sĩ uaxastakua-echa-eri, peru orepati-cha-eri
 not converse-PFV-PRS-IND=1pS law-PL-GEN but leader-PL-GEN

uandontskuari-sĩ- \emptyset -ka=sĩ IAMINDU-EECHA-ERI.

converse-PFV-PRS-IND+1=1pS all-PL-GEN

‘We didn’t talk about the laws, but the leaders we talked about all of.’

(44) *Comitative case*

Ambu uandontskuari pিরিচাংগুনি, peru kustatichanguni uandontskuarisĩkani IAMINDUEECHANGUNI.

Ambu uandontskuari- \emptyset - \emptyset - \emptyset পিরি-চা-ংগুনি, peru kustati-cha-ংগুনি
 not converse-PFV-PRS-IND singer-PL-COM but instrumentalist-PL-COM

uandontskuari-sĩ- \emptyset -ka=ni IAMINDU-EECHA-NGUNI.

converse-PFV-PRS-IND+1=1sS all-PL-COM

‘I didn’t talk to the singers, but the instrumentalists I talked to all of.’

- The case-matching effects shown in (43-44) provide a second argument in favor of the stranding analysis and against the adverbial analysis.
- The genitive case in (43) and the comitative case in (44) are both assigned by the verb *uandontskuari*- ‘converse, talk’.
- On the stranding analysis, the case-matching in (43-44) is just a consequence of DP-internal concord, though the containing DP in which concord takes place gets broken up in the course of the derivation.
- On the adverbial analysis, one would have to say that, in (43-44), the verb assigns its distinctive lexical case both to its internal argument and to the adverbial element *iamindueecha* ‘all’ (or to the *pro* accompanying it in a structure like [*iamindueecha pro*]; cf. Fitzpatrick 2006).
- This is problematic if *uandontskuari*- ‘converse’ can only assign genitive/comitative case once.

4.3 The Subject Condition predictions

- The stranding and adverbial analyses also make different predictions about whether or not subject-oriented quantifier float should be able to appear to violate the Subject Condition:

(45) *Subject Condition predictions* (Fitzpatrick 2006)

- Stranding analysis:** Subject-oriented quantifier float constructions should not be able to even *appear* to violate the Subject Condition. They are derived by genuine movement, and must therefore obey all applicable constraints on movement.
- Adverbial analysis:** Subject-oriented quantifier float constructions *should* be able to appear to violate the Subject Condition—but the violations will be illusory, because no extraction from a subject DP will actually be involved.

- Janitzio P’urhepecha certainly has subject-oriented quantifier float constructions.
- On the stranding analysis—but not on the adverbial analysis—these involve extractions from subjects.
- To determine whether or not we should worry about this, we first need to know whether the Subject Condition is in force in Janitzio P’urhepecha.
- Although the empirical picture is complex (as in English, Chomsky 2008), the core cases show that something like the Subject Condition is indeed active in this language.
- Consider first the baseline example in (46), which shows that extraction from an *object* nominal is possible:

(46) [Context: I know that the baby is scared of a picture of someone, but I don’t know who. I want to know who the picture is of. I ask...]⁷

? ¿Neri cheresini charaku ma p’itakata?

¿Ne-ri chere-sin-Ø-i charaku ma p’itakata?
 who-GEN be.afraid.of-HAB-PRS-INT baby a picture
 ‘Who’s the baby scared of a picture of?’

- In the same context, the corresponding extraction from a subject is severely degraded:

(47) [Context: I know that the baby is scared of a picture of someone, but I don’t know who. I want to know who the picture is of. I ask...]

?* ¿Ne-ri chera-sin-Ø-i ma p’itakata charaku-ni?
 who-GEN scare-HAB-PRS-INT a picture baby-ACC
 semilit. ‘*Who_j does [a picture of ___j] scare the baby?’
 int. ‘Who is such that a picture of them scares the baby?’

- And the extraction-from-subject sentence in (48), which is string-identical to the extraction-from-object sentence in (46), is unacceptable:

(48) [Context: I know that there’s a baby who’s scared of a picture, but I don’t know whose baby it is. I want to know. I ask...]

* ¿Ne-ri chere-sin-Ø-i charaku ma p’itakata?
 who-GEN be.afraid.of-HAB-PRS-INT baby a picture
 semilit. ‘*Who_k is [the baby of ___k] scared of a picture?’
 int. ‘Whose baby is scared of a picture?’

⁷This sentence was in fact judged perfect out of context. The reason it was judged a bit marginal in context may be that, for the consultant from whom I elicited these judgments, it is more natural in this context to use the pied-piping option shown in (1) below.

- (1) ¿Nerini p’itakua cheresini charaku?
 ¿Ne-ri-ni p’itakua chere-sin-Ø-i charaku?
 who-GEN-ACC picture be.afraid.of-HAB-PRS-INT baby
 ‘Whose picture is the baby scared of?’

- Dilemma:

- (49) a. On the one hand, it appears that a DP can be extracted from an object, but not from a subject.
 → **Subject Condition** effect
- b. On the other hand, if quantifier float is associate movement, then it would seem that (associate) DPs can move out of both objects and subjects, in violation of the Subject Condition.

- This problem only arises on the stranding analysis. On the adverbial analysis, subject-oriented quantifier float doesn't involve extraction from subjects at all.
- This, then, seems like an argument in favor of the adverbial analysis.
- How can the Subject Condition evidence (which seems to tell in favor of the adverbial analysis) be reconciled with the distributional and case-matching facts, which tell in favor of the stranding analysis?
- The argument from the Subject Condition in favor of the adverbial analysis seems to derive much of its force from the implicit assumption that quantifiers' associates and nominal *wh*-phrases like *neri* 'who.GEN / of whom' belong to the same category.
- But what if these *wh*-phrases belonged to some category other than DP? (Call it ω P for convenience.)
- If this were so, then Janitzio P'urhepecha would show Subject Condition effects with ω P extraction, but not with DP extraction.
- This would still be mysterious, but it would parallel a similar phenomenon in English: DPs can't be extracted from unaccusative, passive, or other internal argument subjects, but *of*-PPs can (cf. Chomsky 2008):

- (50) a. *Who did a biography of appear last month?
 b. *Who was a biography of published last month?
 c. *Who did a biography of receive several awards last month?

- (51) a. Of whom did a biography appear last month?
 b. Of whom was a biography published last month?
 c. ^MOf whom did a biography receive several awards last month?

- For this alternative analysis of the Subject Condition facts to be truly convincing, we will need independent evidence in favor of the posited categorial difference.
- Still, the fact that Subject Condition effects do not show up across the board, but rather appear and disappear in part as a function of the category of the extracted element ((50-51)), considerably weakens the argument from the Subject Condition that floated quantifiers in Janitzio P'urhepecha must be adverbials.
- Summing up, the distributional and case-matching facts provide strong evidence in favor of the **stranding** analysis for Janitzio P'urhepecha, and the apparent challenge from the Subject Condition facts does not seem very severe.

5 DP movement: altruistic or greedy?

- I've argued that quantifier float comes about in Janitzio P'urhepecha when a quantifier is stranded by the movement of its associate DP.
- On this view, quantifier float has a lot in common with subject movement: both are subtypes of DP movement, and, in Janitzio P'urhepecha, both are optional.

- At this point, we can ask a further question: what drives DP movement?
- The question of what drives movement has received two types of answers in the literature:
 - (52) a. **Altruistic movement:** An element moves to satisfy a featural requirement of the target of movement.
 - b. **Greedy movement:** An element moves to satisfy a featural requirement of its own (see, e.g., Bošković 2007).
- I argue that the facts of DP movement in Janitzio P’urhepecha provide strong evidence for **altruistic** movement, challenging analyses of movement on which all movement is greedy.

5.1 An argument from parsimony

- In Janitzio P’urhepecha, a subject can stay in its base position ([Spec,VoiceP] for external argument subjects) or raise to [Spec,AspP], [Spec,MoodP], or [Spec,PolP].
- If movement is **altruistic**, all we have to say to capture this is that, in Janitzio P’urhepecha, the Asp, Mood, and Pol heads can optionally be endowed with an [EPP:D] feature.
- In other words, this language is arguably like Spanish (if this is the situation with Spanish T), but more so, since it instantiates the “optional [EPP:D] feature” option on three clausal functional heads instead of one.
- But if movement is **greedy** (Bošković 2007), then, to account for the subject placement facts, we have to say that a D in Janitzio P’urhepecha can optionally be endowed with a [*u*Asp] feature or a [*u*Mood] feature or a [*u*Pol] feature. . .
- . . .each of which, when present on a head X (and hence on the XP it heads), triggers the internal merger of this XP with the maximal projection of the corresponding functional head (Asp, Mood, or Pol).
- (Or, in traditional terms, the movement of the XP to the relevant specifier position: [Spec,AspP], [Spec,MoodP], or [Spec,PolP].)
- This seems like a reductio of the Greed-based analysis of DP movement in Janitzio P’urhepecha: burdening the category D with a large array of optional unvalued features just to get the subject movement facts right would be egregiously stipulative.
- N.B. It does not seem feasible to try to rehabilitate the Greed-based analysis of these facts by appealing to the subject’s need for (nominative) Case.

5.2 An empirical argument: intervention effects

- There is also some empirical evidence favoring an Altruism-based analysis of DP movement in Janitzio P’urhepecha over a Greed-based analysis.
- The two analyses make different predictions about whether there should be intervention effects:
 - (53) *Intervention predictions*
 - a. **Altruistic movement:** On the assumption that satisfaction of an EPP feature on a head H is preceded by an Agree search conducted by H, EPP-driven movement should show intervention effects.
 - b. **Greedy movement:** A phrase YP internally merges with the maximal projection of a head H to satisfy its own [*u*H] feature. YP will keep moving until it reaches a [Spec,HP] position in which it can satisfy this feature. Therefore, no intervention effects are predicted.
- In more concrete terms:

(54) *Predictions about movement of nonsubjects in Janitzio P’urhepecha*

- a. **Altruistic movement:** An [EPP:D] feature on Asp, Mood, or Pol will always be satisfied by the highest DP (the subject). Therefore, it should not be possible to move a nonsubject to the specifier of one of these heads and produce an information-structurally neutral sentence. Leftward movement of nonsubjects *must* be topicalization or focus movement.
- b. **Greedy movement:** It should be possible to endow a nonsubject DP with [*uAsp*], [*uMood*], or [*uPol*], causing it to move to the corresponding specifier position. Therefore, it *should* be possible to front a nonsubject without inducing any special information-structure effects.

- The data seem to bear out the predictions of the **greedy** movement analysis:

(55) A: *¿Ambe ukurinchasiki uitsindekua?*

¿Ambe ukurincha-si-Ø-ki uitsindekua?
what happen-PFV-PRS-INT yesterday
‘What happened yesterday?’

B: □*Jiuatsichani exeasikani iamindueechani.*

□**Jiuatsi-cha-ni** exe-a-si-Ø-ka=ni **iamindu-eecha-ni.**
coyote-PL-ACC see-pO-PFV-PRS-IND+1=1sS all-PL-ACC
int. ‘I saw all the coyotes.’

[Comment: “The question is very good; in the answer, *Iamindu jiuatsichani exeasikani* would sound better.”]

(56) A: *¿Ambe usiki uitsindekua chiti tapichu?*

¿Ambe u-si-Ø-ki uitsindekua chiti tapichu?
what do-PFV-PRS-INT yesterday your uncle
‘What did your uncle do yesterday?’

B: □*Omutakueechani atantasiti iamindueechani.*

□**Omutakua-echa-ni** atanta-si-Ø-ti **iamindu-eecha-ni.**
door-PL-ACC paint-PFV-PRS-IND+3 all-PL-ACC
int. ‘He painted all the doors.’

[Comment: “The question is excellent; in the answer, I’d say *Iamindu omutakueechani atantasiti.*”]

6 Conclusion

- The facts of quantifier float in Janitzio P’urhepecha are of considerable relevance to the now decades-old “stranding vs. adjunction” debate.
- There is strong evidence that quantifier float in this language comes about through stranding rather than adverbial adjunction:

(57) a. **The distribution of floating quantifiers:** The distribution of floating quantifiers tracks that of ordinary DPs extremely faithfully—a situation predicted by the stranding analysis but unexpected on the adverbial analysis.

- b. **Case matching:** A floating quantifier and its associate match in case, even when this is a lexical case. On the stranding analysis, this is just a reflex of DP-internal concord; on the adverbial analysis, one seems to have to posit double lexical case assignment to account for this.

- To these two arguments for stranding, we can add a third, conceptual one:

(58) If we have to posit that, say, *all*, *both*, and *each* in English lead a double life (as both Ds heading DPs and adverbials that adjoin to clausal projections), this isn't too problematic. But if we end up giving this analysis for language after language, we have to worry that we may be missing a generalization (cf. Sportiche 1988:427).

- Certain Subject Condition facts seemed to provide an argument in favor of the adverbial analysis for Janitzio P'urhepecha, but I have contended that this argument is not as strong as it may initially appear.
- The facts of quantifier float in Janitzio P'urhepecha, then, stand as a challenge to analyses on which quantifier float always comes about through adverbial adjunction (Torrego 1996, Benmamoun 1999, Bobaljik 2003; see also Baltin 1995).
- Finally, turning from the movement of quantifiers' associates to DP movement more generally, conceptual and empirical considerations strongly suggest that DP movement in Janitzio P'urhepecha is **altruistic** (target-driven)...
- ...posing a challenge to analyses (e.g., Bošković 2007) on which all movement is greedy.

(Ask me about concord and intermediate movement in Janitzio P'urhepecha quantifier float!)

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