

# 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, Doetjes 1992, Baltin 1995, Merchant 1996, Torrego 1996, Benmamoun 1999, McCloskey 2000, Bobaljik 2003, Fitzpatrick 2006, Yatabe 2010, Henry 2012, Tescari Neto 2012, a.o.)

(1) *The quantifier float alternation*

- 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) floats off its **associate** *the walruses* to form (1b), so we say that sentences like (1b) exhibit **quantifier float**.
- The quantifier float alternation ((1)) 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.
- On the **stranding analysis** (Sportiche 1988, Giusti 1990, Shlonsky 1991, Merchant 1996, McCloskey 2000, Henry 2012; see also Fitzpatrick 2006), a floated quantifier (like *all* in (1b)) forms an underlying constituent with its associate...
- ...but this constituent gets broken up when the associate moves out of it, “stranding” the quantifier:

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(2) *Quantifier float: stranding analysis*

[The walruses]<sub>1</sub> are [all     <sub>1</sub>] painting murals.

- On the **adverbial analysis** (Doetjes 1992, Baltin 1995, Torrego 1996, Benmamoun 1999, Bobaljik 2003, Tescari Neto 2012; see also Fitzpatrick 2006), a floated quantifier and its associate never form a constituent.
- 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: adverbial analysis*

[The walruses]<sub>1</sub> are [<sub>vP</sub> all [<sub>vP</sub>     <sub>1</sub> 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 extensive 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 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 from Janitzio P’urhepecha strongly support the **stranding analysis** of quantifier float, thus challenging “adverbial adjunction only” analyses of the phenomenon.
- b. DP movement *generally* in Janitzio P’urhepecha provides strong evidence for **altruistic** (target-driven) **movement**, challenging views (e.g., Bošković 2007) on which all movement is greedy.

## 1.1 Roadmap

- §2: Preliminaries: Janitzio P’urhepecha clause structure
- §3: Stranding vs. adjunction I: the distribution of floated quantifiers
- §4: Stranding vs. adjunction II: case matching
- §5: The driving force for DP movement
- §6: Conclusion

## 2 Janitzio P'urhepecha clause structure

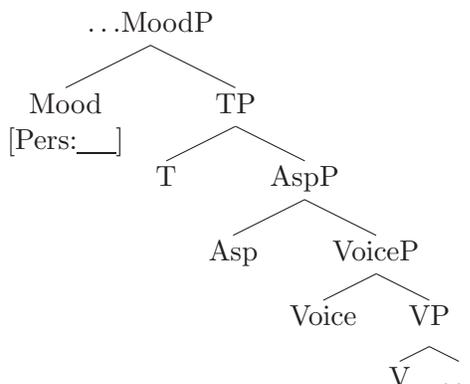
- In §3, we will determine whether the distribution of floated quantifiers in Janitzio P'urhepecha tracks that of ordinary DPs, as predicted by the stranding analysis but not by the adverbial analysis.
- But in order to determine the distribution of anything, we need to have some idea of the clause structure of the language, and what syntactic landmarks it makes available.
- A starting point:

(5) *Morphological structure of the Janitzio P'urhepecha finite verb*

|                      |                         |       |        |       |             |
|----------------------|-------------------------|-------|--------|-------|-------------|
| $\sqrt{\text{ROOT}}$ | (Derivational Suffixes) | Voice | Aspect | Tense | Mood+Person |
|----------------------|-------------------------|-------|--------|-------|-------------|

- By the logic of the Mirror Principle (Baker 1985:375, (4)), this provides evidence for (at least) the following clause structure for Janitzio P'urhepecha:<sup>1</sup>

(6) *Janitzio P'urhepecha clause structure (to be revised)*



- Are there adverbials specialized to occur at different heights, which can be used as landmarks (cf. Pollock 1989)? Fortunately, yes. (Here we consider only *left*-adjoined adverbials, since these make better landmarks.)
- Suppose that (adapting proposals by Cinque 1999 and Tescari Neto 2013:30 to the noncartographic framework adopted here) manner adverbials such as *exeparini* ‘carefully’ adjoin to VoiceP, and *isku jauembarini* ‘suddenly’ adjoins to AspP.
- Then, *isku jauembarini* ‘suddenly’ should rigidly precede manner adverbials. This is correct:<sup>2</sup>

<sup>1</sup>For the decomposition of the verb phrase into a bipartite structure, see Larson (1988, 1990), Kratzer (1996), Harley (2008), Krejci and Tallman (2015). I call the lower “VP-shell” VP and the higher one VoiceP. There is some additional (nonmorphological) evidence for such a bipartite structure in 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* ( $\approx$  *each* ... *the other*). See Jackendoff (1990) and Bruening (2014), however, for analyses on which Barss-Lasnik effects do not diagnose c-command.

<sup>2</sup>**Abbreviations used:** ACC = accusative, AFFM = emphatic affirmation marker, COM = comitative, COP = copula, DUR = durative, FOC = focus marker, FUT = future, GEN = genitive, HAB = habitual, IND = indicative, INF = infinitive, INT = interrogative, ITER = iterative, LOC = locative, <sup>M</sup> = marked (as opposed to degraded), PASS = passive, PFV = perfective, PL = plural, pO = plural object agreement, PRS = present, PST = past, PTCP = participle, RESP = respectful, SJV = subjunctive, SUB = subordinator, 1 = first person, 1pS = first person plural subject, 1sS = first person singular subject, 2sS = second person singular subject, 3 = third person, 3pS = third person plural subject, ↓ = less acceptable than the comparison sentence.

(7) *Isku jauembarini* ‘suddenly’ (*AspP*) precedes *exeparini* ‘carefully’ (*VoiceP*)

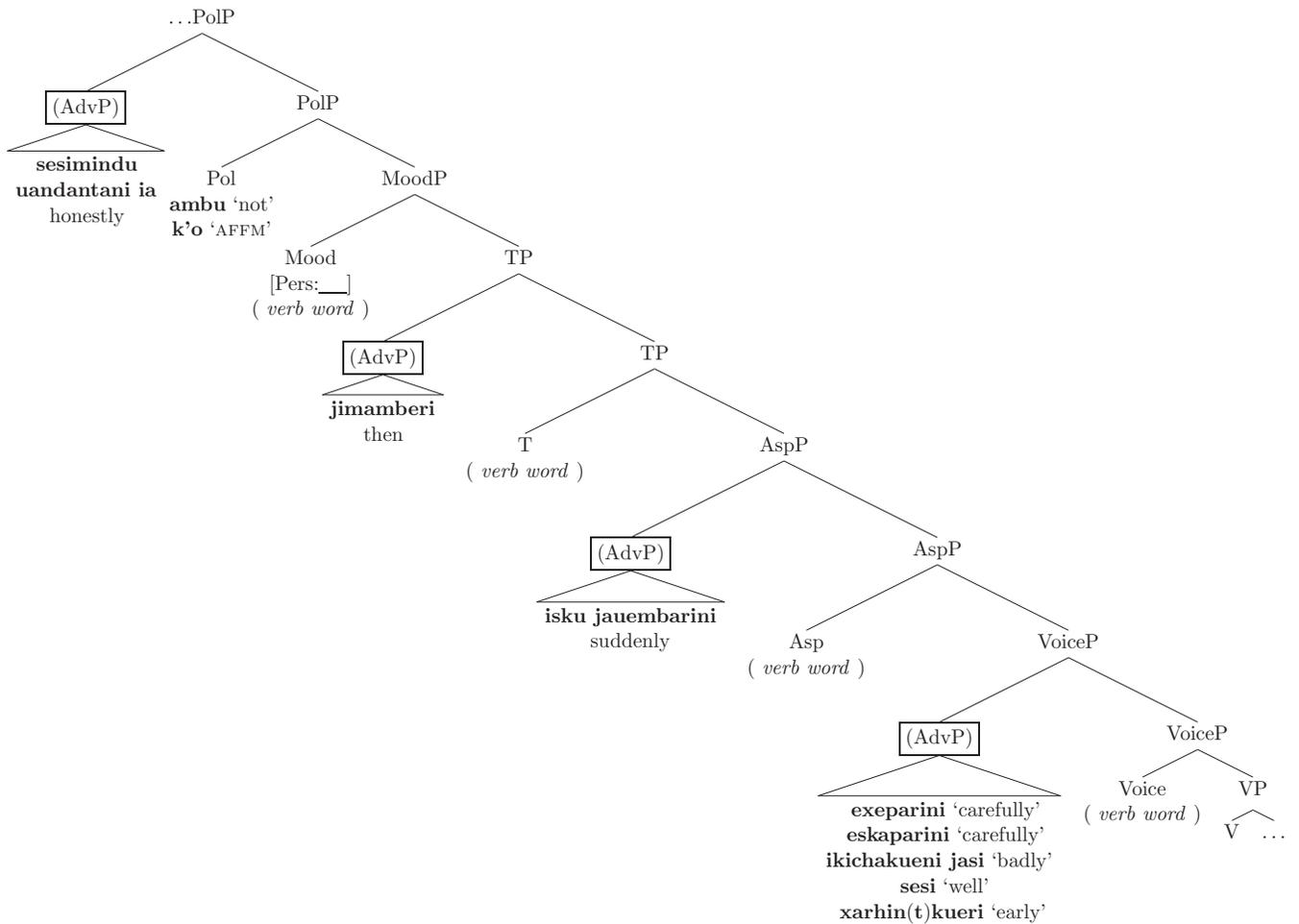
- a. Emilia **isku jauembarini** apojsita-si-Ø-ti      **exeparini** koki-ni      uitsakua-rhu.  
 Emily suddenly                      put-PFV-PRS-IND+3 carefully      toad-ACC      grass-LOC  
 ‘Emily suddenly carefully put the toad on the grass.’
- b. ??Emilia **exeparini** apojsita-si-Ø-ti      **isku jauembarini** koki-ni      uitsakua-rhu.  
 Emily carefully      put-PFV-PRS-IND+3 suddenly                      toad-ACC      grass-LOC  
 ‘\*Emily carefully suddenly put the toad on the grass.’

- Data of this sort (on the relative ordering of adverbials, the finite verb, and polarity particles)—provided in Appendix A—give us the following picture of Janitzio P’urhepecha clause structure:

(8) *Conclusions about Janitzio P’urhepecha clause structure*

- a. There are adverbials specialized to adjoin to various projections in the clausal spine.  
 b. The verb word can be realized in various head positions: Voice, Asp, T, or Mood (but not Pol(arity) or higher).

(9) *Janitzio P’urhepecha clause structure (final version)*



### 3 Stranding vs. adjunction I: testing the distributional predictions

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

(10) *Distributional predictions*

- Stranding analysis:** Floated quantifiers should appear in DP positions<sup>3</sup> (specifically, positions that DPs can be merged in and then move out of).
- Adverbial analysis:** Floated quantifiers should not appear in DP positions.

#### 3.1 Subject positions

- Janitzio P’urhepecha has a remarkably rich syntax of subjecthood, making it possible to test these predictions extensively in this language.
- For example, it allows the subject to stay very low, to the right of the VoiceP-adverbial *xarhin(t)kueri* ‘early’, hence in [Spec, VoiceP] (the base position of external argument subjects):

(11) *The subject can stay in [Spec, VoiceP]*

Uitsindekua mita⟨a⟩nta-si-∅-ti=sī                      **xarhintkueri** iamindu uariti-cha ts’im-eri  
 yesterday    open⟨pO⟩-PFV-PRS-IND+3=3pS    early                      all woman(RES)-PL they-GEN  
 meiapekue-echa-ni.  
 store-PL-ACC  
 ‘Yesterday all the women opened up their stores early.’

- And this position can host a floated quantifier, with its associate appearing in some higher subject position:

(12) *[Spec, VoiceP] can host a floated quantifier*

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

- Likewise, there is a subject position linearly between VoiceP-adverbials like *sesi* ‘well’ and the AspP-adverbial *isku jauembarini* ‘suddenly’—i.e., [Spec, AspP]—and it too can host either an ordinary subject DP ((13a)) or a floated quantifier ((13b)):

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<sup>3</sup>I use the term *DP* in connection with Janitzio P’urhepecha largely for concreteness. 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.

(13) *[Spec, AspP]*

- a. Unta-si-Ø-ti=sì **isku jauembarini** iamindu iurhitskiri-cha **kanekua sesi** ts'im-eri  
 fix-PFV-PRS-IND+3=3pS suddenly all young.woman-PL very well they-GEN  
 kojtsitarakue-echa-ni.  
 table-PL-ACC  
 'All the young women suddenly fixed their tables very well.'
- b. Iurhitskiri-cha unta-si-Ø-ti=sì **isku jauembarini** iamindu-eecha **kanekua sesi**  
 young.woman-PL fix-PFV-PRS-IND+3=3pS suddenly all-PL very well  
 ts'im-eri kojtsitarakue-echa-ni.  
 they-GEN table-PL-ACC  
 'The young women suddenly all fixed their tables very well.'

- Similar results for the higher subject positions:

(14) *[Spec, TP]*

- a. Sesi=mindu uandanta-ni ia **jimamberi** iamindu tumbi-cha **isku jauembarini**  
 well=very inform-INF already then all young.man-PL suddenly  
 uiria-si-Ø-ti=sì kojperakua-rhu.  
 run-PFV-PRS-IND+3=3pS town.square-LOC  
 'Honestly, then all the young men suddenly ran in the town square.'
- b. <sup>M</sup>Sesi=mindu uandanta-ni ia tumbi-cha **jimamberi** iamindu-eecha **isku jauembarini**  
 well=very inform-INF already young.man-PL then all-PL suddenly  
 uiria-si-Ø-ti=sì kojperakua-rhu.  
 run-PFV-PRS-IND+3=3pS town.square-LOC  
 'Honestly, the young men then all suddenly ran in the town square.'

(15) *[Spec, MoodP]*

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

(16) *[Spec, PolP]*

- a. Iamindu uatsapi-cha **sesi=mindu uandanta-ni ia** sesi t'ire-si-Ø-ti=sì.  
 all child-PL well=very inform-INF already well eat-PFV-PRS-IND+3=3pS  
 'All the kids honestly ate well.'
- b. ? Uatsapi-cha iamindu-eecha **sesi=mindu uandanta-ni ia** sesi t'ire-si-Ø-ti=sì.  
 child-PL all-PL well=very inform-INF already well eat-PFV-PRS-IND+3=3pS  
 'The kids all honestly ate well.'

- If, as suggested by (16), a quantifier can be floated in [Spec,PolP], then a floated quantifier should also be able to immediately precede a polarity particle. This prediction is correct, for both *ambu* ‘not’ and *k’o* ‘AFFM’:

(17) *[Spec,PolP] can host a floated quantifier*

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

(18) *[Spec,PolP] can host a floated quantifier*

Iasi, uichu-eecha **ambu** ch’ana- $\emptyset$ - $\emptyset$ - $\emptyset$ . Peru misitu-eecha uitsindekua iamindu-eecha **k’o**  
 today dog-PL not play-PFV-PRS-IND but cat-PL yesterday all-PL AFFM  
 ch’ana-si- $\emptyset$ -ti=si.  
 play-PFV-PRS-IND+3=3pS  
 ‘Today, the dogs didn’t play. But the cats yesterday all DID play.’

### 3.2 Nonsubject positions

- The distributional predictions of the stranding and adverbial analyses can also be tested in a range of nonsubject positions.
- In (19), the verb is low (to the right of the VoiceP-adverbial *sesi* ‘well’), and an object-associated quantifier has been floated to its right, in the canonical object position:

(19) *Quantifier float in object position*

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

- This is equally possible with notionally “indirect” objects:

(20) Ambu intsku-a-nta- $\emptyset$ - $\emptyset$ - $\emptyset$  takukate-echa-ni charaku-eecha-ni, peru uatsapi-cha-ni **exeparini**  
 not give-pO-ITER-PFV-PRS-IND book-PL-ACC baby-PL-ACC but child-PL-ACC carefully  
 intsku-a-nta-si- $\emptyset$ -ka=ni IAMINDU-EECHA-NI.  
 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.’

- If a quantifier can be floated in the canonical object position (which is low and postverbal), this should be equally possible when it is associated with a passive subject. And it is:

(21) *Quantifier float in postverbal passive subject position (= canonical object position)*

Joskue-echa **sesi** exe-na-sin- $\emptyset$ -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.’

- (22) ? P'orhechi-cha **eskaparini** atanta-na-si-Ø-ti=sĩ iamindu-eecha XARHINKUERI.  
 pot-PL carefully paint-PASS-PFV-PRS-IND+3=3pS all-PL early  
 ‘The pots were all carefully painted {EARLY / in the MORNING}.’<sup>4</sup>

- Summing up, the distribution of floated quantifiers in Janitzio P'urhepecha tracks that of ordinary DPs extremely closely:

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

|    | DP position                                 | Acceptability of quantifier float in that position |
|----|---|--|
| a. | [Spec,VoiceP] (subjects)                    | ✓  |
| b. | [Spec,AspP] (subjects)                      | ✓  |
| c. | [Spec,TP] (subjects)                        | ✓  |
| d. | [Spec,MoodP] (subjects)                     | ✓  |
| e. | [Spec,PolP] (subjects)                      | ✓  |
| f. | Direct object position                      | ✓  |
| g. | Direct object position<br>(passive subject) | ✓  |
| h. | Indirect object position                    | ✓  |
| i. | Object-of-P position                        | ??   |
| j. | [Spec,FocP]                                 | ✓  |

- This is predicted by the stranding analysis. On this analysis, floated quantifiers appear in DP positions because they *are* DPs—more precisely, DPs that have been evacuated by the associates that were originally inside them.
- If floated quantifiers were adverbials adjoined to clausal projections, we would be hard pressed to explain why they seem to have the distribution of argument DPs in Janitzio P'urhepecha.
- The distributional facts in (23), then, strongly support the **stranding** analysis of quantifier float for Janitzio P'urhepecha.

<sup>4</sup>Another position that can host both ordinary DPs and floated quantifiers is the specifier of the left-peripheral focus clitic =sĩ (which I analyze as a Foc head; cf. Rizzi 1997, Capistrán 2002):

- (1) Tumbi-cha ambu arinta-Ø-Ø-Ø ima-ni takukata, peru iurhitskiri-cha uitsindekua IAMINDU-EECHA=sĩ  
 young.man-PL not read-PFV-PRS-IND+3 that(DIST)-ACC book but young.woman-PL yesterday ALL-PL=FOC  
 arinta-Ø-Ø-ti.  
 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 (as in Carapan P'urhepecha, Lizárraga Navarro 2013:245-47), so sentences like (1) do not help us choose between the stranding and adverbial analyses.

## 4 Stranding vs. adjunction II: testing the case-matching predictions

- The stranding and adverbial analyses also potentially make different predictions about whether or not a floated quantifier should match its associate in case (Merchant 1996):

(24) *Case-matching predictions*

- Stranding analysis:** It should be at least possible, and perhaps obligatory, for a floated quantifier to bear the same case as its associate (because the associate and floated quantifier originate as subconstituents of a single DP and so should display concord with one another).
- Adverbial analysis:** A floated quantifier is an adverbial element. If adverbials do not generally bear morphological case in a particular language, then floated quantifiers shouldn't either, all else being equal.

- In Janitzio P'urhepecha, a floated quantifier obligatorily matches its associate in morphological case:<sup>5</sup>

(25) *Matching: genitive case*

Ambu uandontskuari- $\emptyset$ - $\emptyset$ - $\emptyset$ =sĩ uaxastakue-ech-eri, peru orepati-ch-eri  
 not converse-PFV-PRS-IND=1pS law-PL-GEN but leader-PL-GEN  
 uandontskuari-sĩ- $\emptyset$ -ka=sĩ IAMINDU-EECH-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.'

(26) *Matching: comitative case (plausibly assigned by the verbal complex)*

Ambu uandontskuari- $\emptyset$ - $\emptyset$ - $\emptyset$  pireri-cha-nguni, peru kustati-cha-nguni  
 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.'

(27) *Matching: comitative case (marking an instrumental adjunct DP)*

[Context: a friend and I are in a classroom where there are a lot of computers. I say to him about our friend Mariana, who's a writer...]

Mariana ambu kara-j- $\emptyset$ -ki karanaritakue-echa-nguni, peru ts'ĩ kantsakate-echa-nguni  
 Mariana not write-HAB-PRS-IND writing.implement-PL-COM but these computer-PL-COM  
 kara-sĩn- $\emptyset$ -di IAMINDU-EECHA-NGUNI.  
 write-HAB-PRS-IND+3 all-PL-COM  
 'Mariana doesn't write with pens and pencils, but these computers she writes on [= with] ALL of.'

- On the **stranding** analysis, this case-matching is unsurprising: it is a consequence of DP-internal concord (though the containing DP in which concord takes place is broken up in the course of the derivation).
- On the **adverbial** analysis, the case-matching is unexpected, as adverbials do not generally bear morphological case in Janitzio P'urhepecha. (Some do, though: there are apparently genitive-marked temporal adverbials such as *churikueri* 'at night'.)
- A defender of the adverbial analysis might respond that what bears morphological case in these structures isn't the floated quantifier itself but a *pro* local to it.

<sup>5</sup>Using the nominative form IAMINDU-EECHA 'all-PL' with a non-nominative associate—i.e., failing to respect the case-matching requirement—yields unacceptability (\*) in (25) and degradation (?) in (26-27).

- On this view, floated quantifiers have the external syntax of adverbials, but an internal structure like [FQ *pro*] (as argued by Fitzpatrick 2006 on independent grounds).
- But it still would not be clear how the relevant cases could be assigned to two constituents—their ordinary bearer and the *pro* inside the complex floating quantifier.
- In particular, inherent cases assigned by the verbal complex ((25-26)) cannot ordinarily be assigned twice.
- Case-matching under quantifier float, then, provides a second argument in favor of the stranding analysis and against the adverbial analysis.

## 5 The driving force for DP movement

- I’ve argued that, in Janitzio P’urhepecha, quantifier float comes about when a quantifier is stranded by the movement of its associate DP.
- This type of explanation immediately raises the following question: *What drives DP movement?*
- The question of what drives movement operations has received two main types of answers from researchers who make the assumption (also adopted here) that movement must be motivated:

(28) a. **Altruistic movement:** An element moves to satisfy a featural requirement of the target of movement.  
(Chomsky 1995, 2000, 2001, 2004; McCloskey 2001)

b. **Greedy movement:** An element moves to satisfy a featural requirement of its own.  
(Bošković 2007)

- Here, I argue that the facts of DP movement in Janitzio P’urhepecha provide strong evidence for **altruistic** movement, challenging analyses on which all movement is greedy.

### 5.1 A conceptual argument

- In Janitzio P’urhepecha, a subject DP can stay in its base position ([Spec,VoiceP] for external argument subjects) or raise to [Spec,AspP], [Spec,TP], [Spec,MoodP], or [Spec,PolP].
- If movement is **altruistic**, all we have to say to capture this is that, in Janitzio P’urhepecha, certain clausal functional heads (Asp, T, Mood, and Pol) can optionally bear an [EPP:D] feature. (A very convincing analysis of this type is given for optional subject movement in Dholuo in Cable 2012.)
- But if movement is **greedy** (Bošković 2007), then accounting for the subject placement facts will require claiming that a D in Janitzio P’urhepecha can optionally bear a [*u*Asp] or a [*u*T] or a [*u*Mood] or a [*u*Pol] feature. . .
- . . .each of which, when present on a head X—and hence on the XP it heads—triggers the movement of this XP to the specifier of the corresponding functional head (Asp, T, Mood, or Pol).
- This seems like a reductio of the Greed-based analysis: burdening the category D with a large array of optional unvalued features just to get the subject movement facts right would be highly stipulative.<sup>6</sup>

<sup>6</sup>In Janitzio P’urhepecha, subject movement to [Spec,MoodP] could *conceivably* be driven by the subject’s need for Case: Mood may be the nominative Case assigner in this language, given that it is the only functional head that indexes subject  $\phi$ -features (the indicative Mood suffixes index the person of the subject). There would, however, be difficulties with a Case-based analysis of subject movement to [Spec,MoodP]: a subject can perfectly well receive nominative Case in situ ((11)), or when it moves but not as high as [Spec,MoodP] ((13a), (14a)). But there is no evidence that Asp, T, or Pol is a Case assigner in Janitzio P’urhepecha, so recourse to optional [*u*Asp], [*u*T], and [*u*Pol] features on D would be unavoidable even on a Case-based analysis.

## 5.2 An empirical argument: intervention effects

- The altruistic- and greedy-movement hypotheses also make different predictions about intervention effects:

(29) *Intervention predictions*

- Altruistic movement:** On the fairly standard assumption that movement depends on Agree, a functional head bearing [EPP:D] (or [*u*D, EPP]) will probe its c-command domain, agree with the highest (closest) DP it finds, and attract it to its specifier. That is, DP movement to “subject” positions should show intervention effects. Therefore, internal arguments should not be able to move over external arguments (except when targeting an information-structure-related position in the left periphery).
- Greedy movement:** It should be possible to endow any DP, even a nonsubject DP, with a [*u*Asp], [*u*T], [*u*Mood], or [*u*Pol] feature, causing it to move over the external argument and into the corresponding specifier position, without producing a marked information structure. That is, DP movement to “subject” positions should *not* show intervention effects.

- In an information-structurally neutral context, attempting to move an internal argument into one of the subject positions instead of the external argument degrades acceptability:

(30) A: ¿Ambe ukurincha-si-Ø-ki uitsindekua?  
 what happen-PFV-PRS-INT yesterday  
 ‘What happened yesterday?’

B<sub>1</sub>: **Tate** exeku-si-Ø-ti **i-ni** **parikutarakua-ni.** ✓SVO  
 dad fix-PFV-PRS-IND+3 this-ACC car-ACC  
 ‘Dad fixed this car.’

B<sub>2</sub>: ?**I-ni** **parikutarakua-ni** exeku-si-Ø-ti **Tate.** ?OVS  
 this-ACC car-ACC fix-PFV-PRS-IND+3 dad  
 ‘#This car Dad fixed.’

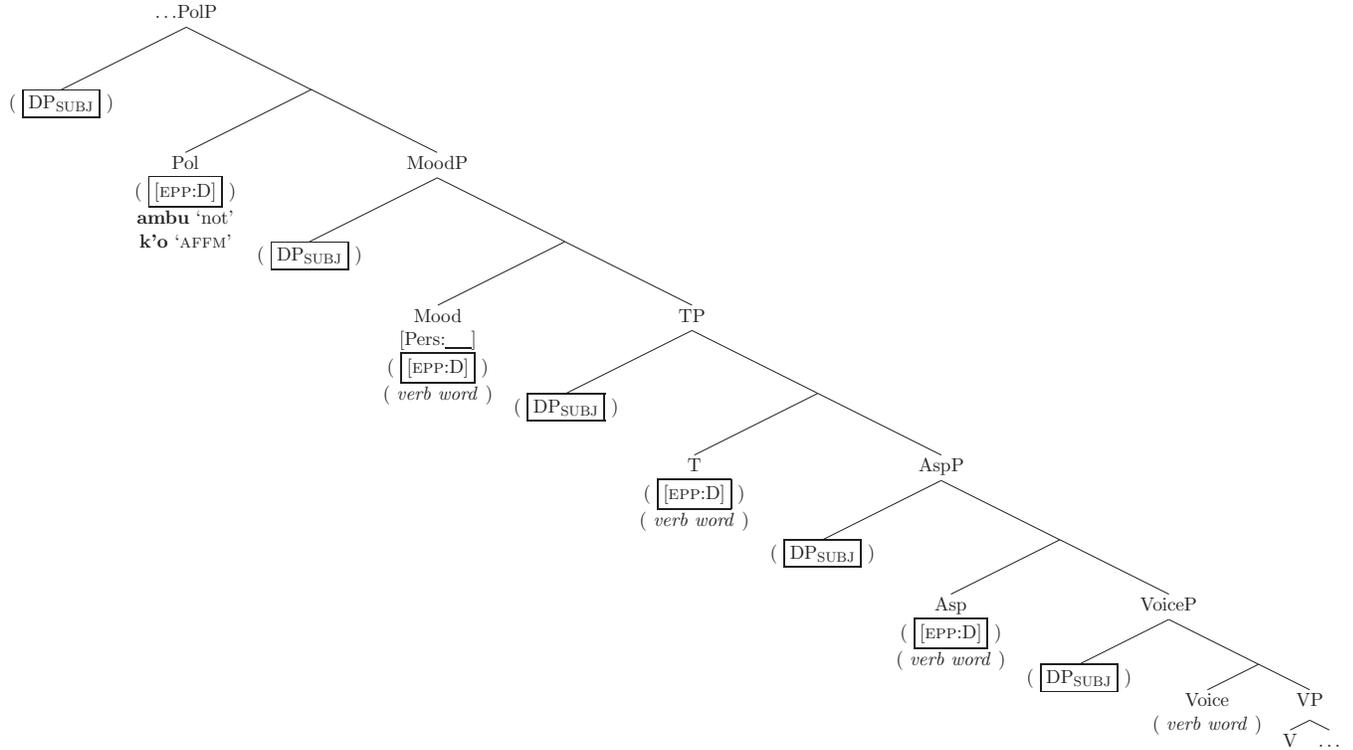
(31) A: ¿Ambe ukurincha-si-Ø-ki iasi?  
 what happen-PFV-PRS-INT today  
 ‘What happened today?’

B<sub>1</sub>: Ataranta-si-Ø-ka=ni **juchiti chekakua-ni.** ✓VO  
 sell-PFV-PRS-IND+1=1sS my big.canoe-ACC  
 ‘I sold my big canoe.’

B<sub>2</sub>: ?**Juchiti chekakua-ni** ataranta-si-Ø-ka=ni. ?OV  
 my big.canoe-ACC sell-PFV-PRS-IND+1=1sS  
 ‘#My big canoe, I sold.’

- Conceptual and empirical arguments, then, both support the view that DP movement in Janitzio P’urhepecha is triggered by a featural requirement of the **target** of movement ((32)), not the moving DP.

(32) *Optional subject movement in Janitzio P’urhepecha is altruistic*



## 6 Conclusion

- In addition to shedding light on a previously unexplored corner of P’urhepecha grammar, today’s investigation has yielded two results of broader theoretical significance.

### 6.1 The derivation of quantifier float

- There is strong evidence that quantifier float in Janitzio P’urhepecha comes about through **stranding** rather than adverbial adjunction:

(33) a. **Distributional evidence:** The distribution of floated 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 floated 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:

(34) 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).

The facts in Janitzio P'urhepecha strongly suggest that quantifier float can arise through **stranding** in at least some languages—challenging analyses on which quantifier float always comes about through adverbial adjunction (Doetjes 1992, Torrego 1996, Benmamoun 1999, Bobaljik 2003, Tescari Neto 2012; see also Baltin 1995).

## 6.2 The driving force for movement

- Turning from the movement of quantifiers' DP associates to DP movement more generally. . .

Conceptual and empirical arguments (the latter from intervention effects) both suggest that DP movement in Janitzio P'urhepecha is **altruistic** (target-driven)—challenging analyses (e.g., Bošković 2007) on which all movement is greedy.

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## 8 Appendix A: Evidence bearing on Janitzio P’urhepecha clause structure

- Adapting proposals in Cinque (1999) and Tescari Neto (2013:30) to the noncartographic framework used here, we would expect the adverbial *sesimindu uandantani ia* ‘frankly/honestly/to tell you the truth’ to adjoin to MoodP, *jimamberi* ‘then’ to TP, *isku jauembarini* ‘suddenly’ to AspP, and manner adverbials to VoiceP.
- If this is correct, then when two of these adverbials have been left-adjoined to their respective hosts, the putatively higher adverbial should precede the putatively lower one, and exchanging them in the linear string should produce a less acceptable result.
- This prediction is borne out:

### 8.1 ‘Honestly’ and ‘then’

(35) *Sesimindu uandantani ia* ‘frankly, honestly’ (MoodP) precedes *jimamberi* ‘then’ (TP)<sup>7</sup>

- a. **Sesi=mindu uandanta-ni ia** Elena **jimamberi** uera-si-Ø-ti ereta-rhu.  
 well=very inform-INF already Elena then go.out-PFV-PRS-IND+3 town-LOC  
 ‘Honestly, Elena then left town.’
- b. \*\***Jimamberi** Elena **sesi=mindu uandanta-ni ia** uera-si-Ø-ti ereta-rhu.  
 then Elena well=very inform-INF already go.out-PFV-PRS-IND+3 town-LOC  
 ‘Then Elena honestly left town.’

### 8.2 ‘Then’ and ‘suddenly’

(36) *Jimamberi* ‘then’ (TP) precedes *isku jauembarini* ‘suddenly’ (AspP)

- a. Elena **jimamberi** mitanta-si-Ø-ti **isku jauembarini** omutakua-ni k’umanchiku-eri.  
 Elena then open-PFV-PRS-IND+3 suddenly door-ACC house-GEN  
 ‘Elena then suddenly opened the door to the house.’
- b. ?Elena **isku jauembarini** mitanta-si-Ø-ti **jimamberi** omutakua-ni k’umanchiku-eri.  
 Elena suddenly open-PFV-PRS-IND+3 then door-ACC house-GEN  
 ‘\*Elena suddenly then opened the door to the house.’

<sup>7</sup>Although the deviance of *jimamberi* ‘then’ ... *sesimindu uandantani ia* ‘honestly’ order is not always as strong as it is in (35b), this order is consistently judged less acceptable than the opposite order.

### 8.3 ‘Suddenly’ and manner adverbials

- (37) *Isku jauembarini* ‘suddenly’ (*AspP*) precedes *exeparini* ‘carefully’ (*VoiceP*)
- a. Emilia **isku jauembarini** apojsita-si-Ø-ti **exeparini** koki-ni uitsakua-rhu.  
 Emily suddenly put-PFV-PRS-IND+3 carefully toad-ACC grass-LOC  
 ‘Emily suddenly carefully put the toad on the grass.’
- b. ??Emilia **exeparini** apojsita-si-Ø-ti **isku jauembarini** koki-ni uitsakua-rhu.  
 Emily carefully put-PFV-PRS-IND+3 suddenly toad-ACC grass-LOC  
 ‘\*Emily carefully suddenly put the toad on the grass.’
- (38) *Isku jauembarini* ‘suddenly’ (*AspP*) precedes *eskaparini* ‘carefully’ (*VoiceP*)
- a. Berta **isku jauembarini** mikanta-si-Ø-ti **eskaparini** takukata k’eri-ni.  
 Bertha suddenly close-PFV-PRS-IND+3 carefully book big-ACC  
 ‘Bertha suddenly carefully closed the big book.’
- b. ?Berta **eskaparini** mikanta-si-Ø-ti **isku jauembarini** takukata k’eri-ni.  
 Bertha carefully close-PFV-PRS-IND+3 suddenly book big-ACC  
 ‘\*Bertha carefully suddenly closed the big book.’
- (39) *Isku jauembarini* ‘suddenly’ (*AspP*) precedes *ikichakueni jasi* ‘badly’ (*VoiceP*)
- a. Ikinari **isku jauembarini** unta-si-Ø-ti **ikichakueni jasi** uaxantsikua-ni.  
 Ikinari suddenly fix-PFV-PRS-IND+3 badly chair-ACC  
 ‘Ikinari suddenly fixed the chair badly.’
- b. ↓Ikinari **ikichakueni jasi** unta-si-Ø-ti **isku jauembarini** uaxantsikua-ni.  
 Ikinari badly fix-PFV-PRS-IND+3 suddenly chair-ACC  
 ‘\*Ikinari badly suddenly fixed the chair.’

### 8.4 Verb positions

- The (finite) verb word can appear very low, to the right of VoiceP-adverbials such as *ikichakueni jasi* ‘badly’:

- (40) Karlusi **ikichakueni jasi** atanta-si-Ø-ti tsintsikata-ni.  
 Carl badly paint-PFV-PRS-IND+3 wall-ACC  
 ‘Carl painted the wall badly.’

- This position seems to be **Voice** rather than V, given the considerations mentioned in fn. 1.

- The verb word can also be realized in several other positions:

- (41) a. Between VoiceP-adverbials and the AspP-adverbial *isku jauembarini* ‘suddenly’ ((37a), (38a), (39a))  
 → **Asp**
- b. Between the AspP-adverbial *isku jauembarini* ‘suddenly’ and the TP-adverbial *jimamberi* ‘then’ ((36a))  
 → **T**
- c. To the left of *jimamberi* ‘then’ ((42))<sup>8</sup>  
 → **Mood**

- (42) Materu uexurini ereka-a-Ø-ka=sii materu ereta-rhu. Erenta-a-Ø-ka=sii **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.’

- Summarizing, the finite verb can be realized in Voice, Asp, T, or Mood.

<sup>8</sup>Although (42) was judged fully acceptable, it is perhaps more typical for verb-*jimamberi* order to be judged a bit marginal compared to *jimamberi*-verb order.

## 8.5 Polarity particles

- Polarity particles such as *ambu* ‘not’ and *k’o* (expressing emphatic affirmation) seem to merge higher than Mood; this is particularly clear in (43b), where Mood surfaces overtly.

- (43) a. Iasi **ambu** ts’irakuare-∅-∅-∅.  
today not be.cold-PFV-PRS-IND  
‘It’s not cold today.’
- b. Iasi **k’o** ts’irakuare-si-∅-ti.  
today AFFM be.cold-PFV-PRS-IND+3  
‘Today it IS cold.’

- A natural hypothesis is that polarity particles instantiate a functional category Pol(arity) above Mood (see Laka 1990 and Zanuttini 1997 for relevant discussion).
- Here a small revision is needed to our clause structure. Given that Pol is higher than Mood, our working hypothesis that *sesimindu uandantani ia* ‘honestly’ adjoins to MoodP predicts that polarity particles should strictly precede this adverbial. In fact, though, the opposite is true:

- (44) *Sesimindu uandantani ia* ‘honestly’ must precede *ambu* ‘not’<sup>9</sup>
- a. **Sesi=mindu uandanta-ni ia** ambu aparekuari-na-∅-ki.  
well=very inform-INF already not be.hot-DUR-PRS-IND  
‘It’s honestly not hot [out].’
- b. \*Ambu **sesi=mindu uandanta-ni ia** aparekuari-na-∅-ki.  
not well=very inform-INF already be.hot-DUR-PRS-IND  
int. ‘It’s honestly not hot [out].’ / ‘It’s not honestly hot [out].’

- This can be accounted for by positing that *sesimindu uandantani ia* ‘honestly’ adjoins to PolP, not MoodP.
- Finally, the verb cannot incorporate into Pol ((45)) or raise past it ((46)):

- (45) \*Iasi ts’irakuare-∅-∅-∅-ambu.  
today be.cold-PFV-PRS-IND-not  
int. ‘It’s not cold today.’

- (46) \*Iasi ts’irakuare-∅-∅-∅ambu.  
today be.cold-PFV-PRS-IND not  
int. ‘It’s not cold today.’

## 9 Appendix B: Case matching under quantifier float $\neq$ case matching in secondary predication

- A defender of the adverbial analysis of quantifier float might respond to the “double case assignment” problem (§4) by trying to assimilate case matching under quantifier float to case matching in secondary predication.
- It is unlikely that *iamindueecha* ‘all’ can literally *be* a depictive secondary predicate (let alone a resultative one), but perhaps it receives the same morphological case as its associate through a case-sharing mechanism similar to the one operative in secondary predication.
- The problem with this hypothesis is that case matching between floated quantifier and associate seems to be possible in syntactic contexts in which depictive secondary predication is not.

<sup>9</sup>*Sesimindu uandantani ia* ‘honestly’ also obligatorily precedes the polarity particle *k’o* (marking emphatic affirmation).

- The comitative DP cooccurring with *uandontskuari-* ‘converse, talk’ can share its case marking with a floated quantifier associated with it ((26)), but not with the would-be depictive predicate *ts’inariricha* ‘awake.PL’:<sup>10</sup>

(47) Ambu uandontskuari-∅-∅-∅ pireri-cha-nguni, ka...  
not converse-PFV-PRS-IND singer-PL-COM and  
‘I didn’t talk to the singers, and...’

- a. \***kustati-cha-nguni** uandontskuari-si-∅-ka=ni **ts’inariri-cha-nguni**.  
instrumentalist-PL-COM converse-PFV-PRS-IND+1=1sS awake-PL-COM  
‘\*...the instrumentalists<sub>i</sub> I talked to awake<sub>i</sub>.’
- b. **kustati-cha-nguni** uandontskuari-si-∅-ka=ni enga=si ts’inari-rini  
instrumentalist-PL-COM converse-PFV-PRS-IND+1=1sS SUB=3pS wake.up-PTCP.PRS  
ja-∅-p-ka.  
be-PFV-PST-SJV  
‘...the instrumentalists I talked to when they were awake.’

(48) *Control example: ts’inariri* ‘awake’ can serve as a depictive<sup>11</sup>

<sup>M</sup>Elena mentku isi anchikuari-sin-∅-di **TS’INARIRI**.  
Elena always thus work-HAB-PRS-IND+3 awake  
semilit. ‘Elena always works AWAKE.’  
id. ‘Elena’s always awake when she’s working.’

- The comitative case borne by instrumental adjunct DPs behaves the same way:
- Such a DP can share its case marking with a floated quantifier ((27)), but not with the would-be depictive *ambarutantakateecha* ‘sharpened.PL’ ((49a)). Here too, replacing the depictive with an adjunct clause fixes the problem ((49b)).

(49) Mariana ambu kara-j-∅-ki kantsakate-echa-nguni, ka...  
Mariana not write-HAB-PRS-IND computer-PL-COM and  
‘Mariana doesn’t write using computers, and...’

- a. \***karanaritakue-echa-nguni** kara-sin-∅-di **ambarutanta-kate-echa-nguni**.  
writing.implement-PL-COM write-HAB-PRS-IND+3 sharpen-PTCP.PASS-PL-COM  
‘\*...with pencils<sub>m</sub> she writes sharpened<sub>m</sub>.’
- b. **karanaritakue-echa-nguni** kara-sin-∅-di enga=si  
writing.implement-PL-COM write-HAB-PRS-IND+3 SUB=3pS  
ambarutanta-kate-ech-e-∅-∅-ka.  
sharpen-PTCP.PASS-PL-COP-PFV-PRS-SJV  
‘...with pencils she writes when they’re sharpened.’

(50) *Control example: ambarutantakateecha* ‘sharpened.PL’ can serve as a depictive

A: ¿Ura-sin-∅-gi=ri ts’i-ni karanaritakue-echa-ni pari kara-ni?  
use-HAB-PRS-INT=2sS these-ACC writing.implement-PL-ACC for write-INF  
‘Do you use these pencils to write with?’

B: Jo, ura-sin-∅-ga=ni **ambarutanta-kate-echa-ni**.  
yes use-HAB-PRS-IND+1=1sS sharpen-PTCP.PASS-PL-ACC  
‘Yes, I use them sharpened.’

<sup>10</sup>The intended meaning of (47a) can be paraphrased using an adjunct clause ((47b)), making it unlikely that (47a) is ruled out independently on deep semantic grounds.

<sup>11</sup>This sentence is acceptable but marked; it becomes more natural if the depictive is replaced by the present participle *ts’inaririni* (cf. (47b)).