Linearization at PF: Evidence from Malagasy Extraposition

This paper presents a case of prosodically-driven movement in the Austronesian language Malagasy. It argues that the obligatory, non-canonical placement of certain clauses is syntactically- and semantically-vacuous movement at PF, after syntactic structures have been constructed. Obligatory extraposition at PF results from a tension between the prosodic structure of Malagasy and a universal constraint against certain kinds of prosodic recursion. If correct, a grammatical architecture is needed in which at least some word order is determined post-syntactically.

Canonical word order in Malagasy is VOXS. Most constituents can extrapose to a position to the right of the subject, (1), and CPs must extrapose, (2), yielding VOSX word order (Keenan 1976).

(1) Nametraka dite (teo ambonin’ ny latabatra) Rasoa (teo ambonin’ ny latabatra)
PAST.put tea LOC on DET table Rasoa LOC on DET table
‘Rasoa put the tea on the table.’

(2) Manantena (*fa hamono akoho Rabe) Rasoa (fa hamono akoho Rabe)
PRES.hope that kill chicken Rabe Rasoa that kill chicken Rabe
‘Rasoa hopes that Rabe will kill the chicken.’

We propose that obligatory peripheral placement of CPs (CPEX) results from linearization at PF, or PF movement. Argumentation that CPEX is not syntactic comes from its lack of syntactic or semantic consequences. Syntactically, CPs behave as though they are in their base position for a range of phenomena (Law 2007): selection and idioms, scope, Binding Principles, variable binding, extraction, and NPI licensing. For example, (3a) shows that an extraposed CP may contain a pronoun bound by a quantified object; however, the object does not c-command the CP in its extraposed position. Reconstruction to the base position as schematized in (3b) is required. Example (4) shows that extraction from a CP in the extraposed position is possible. Such an example would violate Huang’s (1982) Condition on Extraction Domains if extraction took place directly from the extraposed position.

(3) a. Niteny tamin’ ny zazalahy tsirairayi aho [fa hanoroka azy, Rasoa]
PAST.say PREP DET boy each that FUT.kiss 3SG.ACC Rasoa
‘I told each boy, that Rasoa will kiss him.’

b. *[Niteny [tamin’ ny zazalahy tsirairayi,] [fa hanoroka azy, Rasoa]] aho
PAST.say PREP DET boy each that FUT.kiss 3SG.ACC Rasoa 1SG.NOM

(4) Rahoviana, no mihevitra Rabe [fa hvidy fiara t, Rakoto]?
FUT.when FOC PRES.think Rabe that FUT.buy car Rakoto
‘When does Rabe think Rakoto will buy a car?’ (must be a question about the time of car-buying)

Finally, an NPI is allowed in the extraposed position, (5), but coordination and the lack of subject NPIs argue that negation does not c-command extraposed elements. Reconstruction is again necessary to license the NPI. At the same time, NPIs are generally not licensed under reconstruction (Linebarger 1980). Consequently, NPIs show that the extraposition takes place post-syntactically and the base position of extraposed elements is also their Spell Out position.

(5) Tsy nandroso vary (tamin’ n’iza n’iza) Rasoa (tamin’ n’iza n’iza)
NEG PAST.serve rice PREP anyone Rasoa PREP anyone
‘Rasoa didn’t serve rice to anyone.’

Semantically, extraposition of simple phrases backgrounds the extraposed constituent (Pearson 2001). Constituents that provide new information, such as answers to questions, cannot be extraposed, (6).
CPEX, in contrast, does not background the CP, which can be an answer to a question, (7).

(6) Q: Oviana no lasa nody Rabe?
   ‘When did Rabe go home?’
A: Lasa nody (omalay hariva) Rabe (??omalay hariva)
gone PAST.go.home yesterday evening Rabe yesterday evening
‘Rabe left yesterday evening.’

(7) Q: Inona no notenenan-dRabe momba ahy?
   ‘What did Rabe say about me?’
A: Niteny Rabe fa miiasa tsara ianao
   said Rabe that work well 2SG.NOM
   ‘Rabe said that you work hard.’

CPEX is thus semantically and syntactically vacuous. CPs in the extraposed position behave fully as though they were in their unextraposed, base position. We conclude that they are and that the movement to the peripheral position takes place only at PF, after the derivational split at Spell Out. This PF movement has a phonological motivation. It is due to the prosodic structure of Malagasy clauses and its interaction with the universal constraint of Layeredness (cf. The Strict Layering Hypothesis, Selkirk 1996, Bennett et al. 2015):

(8) **Layeredness**
A prosodic constituent may not contain a constituent that is higher on the prosodic hierarchy

Malagasy clauses constitute an intonational phrase (ι-phrase) consisting of two phonological phrases (φ-phrases), the predicate and the subject (Dahl 1952), (9). If a CP were to appear inside the predicate, this would result in illicit embedding of the clausal CP ι-phrase inside the predicate φ-phrase, (10). Instead, the CP moves at PF to a position where it can form its own ι-phrase independent of the matrix clause ι-phrase, (11).

(9) ((predicate)φ (subject)φ)
(10) *(((V (CP))φ (subject)φ)
(11) (((V)φ (subject)φ)φ (CP))φ

Support for this analysis comes from the fact that embedded CPs which lack a subject, such as controlled clauses or existential clauses, are only a φ-phrase and can appear in their canonical predicate-internal position unextraposed, (12), as they do not violate Layeredness.

(12) Manantena (hianatra teny anglisy PRO)φ Rabe, (hianatra teny anglisy PRO)φ
       hope learn lg English Rabe learn lg English
       ‘Rabe hopes to learn English.’

Our analysis builds on Manetta’s (2012) proposal for Hindi CP extraposition and contributes to the growing body of evidence that prosody constrains and drives word order (e.g. Zec and Inkelas 1990, Zubizarreta 1998, Bennett et al. 2015, and others). The proposal has implications for the analysis of CP extraposition in other languages, and the cross-linguistic variation in this domain.