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RESEARCH

The raising-to-object construction in Puyuma and its implications for a typology of RTO

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Recent work has revealed that raising-to-object (RTO) constructions across languages impose two common constraints. Constructions that involve an actual movement of the "raised" phrase (XP) invariably impose a "Subject-only" constraint on XP, whereas those that contain an XP base-generated in its spell-out position require a coindexed pronoun in the embedded clause. This paper investigates an understudied type of RTO construction in the Philippine-type Austronesian language Puyuma, in which a "Subject-only" constraint on the XP is absent, and the construction need not contain an embedded pronoun coindexed with the XP. I demonstrate that the absence of these constraints follows from an embedded hanging topic analysis of the XP, whereby the XP is base-generated at the left periphery of a finite embedded clause, whose relation with the embedded CP is established through the aboutness condition. I discuss how this construction enriches the current understanding of the microvariation found in non-movement-type RTO constructions. Finally, I show that the XPs, in instances of RTO that have been analyzed as embedded topic constructions, exhibit variation in behavior parallel to topics in root clause environments, which calls for further investigation of the correlation between topics and XPs in RTO constructions.

Keywords: raising-to-object; raising-out-of-CP; aboutness topics; hanging topics; embedded topics; Philippine-type voice system

1 Introduction

A cline of constructions conventionally called raising-to-object (RTO) has been found throughout typologically diverse languages. In a theory-neutral sense, these constructions are characterized by allowing a phrase that is thematically linked to an embedded predicate to optionally surface outside of the embedded clause and exhibit characteristics typical of a matrix object. In both Passamaquoddy (Algonquian) and Romanian (Romance), for example, the subject of a finite embedded clause selected by a knowledge/perception verb can optionally appear in the matrix object position and show object agreement with the matrix verb (1)–(2):

(1) *Passamaquoddy* (Gabriel 1979: 7)
'-Kosiciy-a-l yaq **uhsimis-ol** [eli keka peciya-li-t].
3-know.TA-DIR-OBV QUOT **3.younger.sibling-OBV** [C almost come-OBV-3CONJ]
'She knew that her brother had almost arrived.'

(2) *Romanian* (Alboiu & Hill 2013: 26)
Am mirosit-o **pe Maria** [că voia să ne tragă plasa].
AUX.1 smelled-CL.3SG.F.ACC **DOM Maria** [C wanted SM to.us draw net.the]
'I figured out that Maria intended to con us.'

Constructions similar to (1)–(2) have been observed in a number of genetically distinct languages, including Japanese (Kuno 1976; Tanaka 2002), Blackfoot (Frantz 1978), Korean (Hong 1990; Yoon 2007), Moroccan Arabic (Wager 1983; Massam 1985), Tsez (Polinsky & Potsdam 2001), Madurese (Davies 2005), and Zulu (Halpert & Zeller 2015). Despite their superficial similarities, these constructions fall into two subtypes with regard to whether or not the "raised" phrase (henceforth the XP) undergoes an actual movement from the embedded clause. In the first type of RTO, the XP is in fact base-generated in its spell-out position and semantically linked to the embedded clause via coindexation with an embedded pronoun. This type of construction is commonly referred to as prolepsis (e.g., Madurese: Davies 2005; Tagalog: Law 2011; Sundanese: Kurniawan 2012), illustrated with the data below from Madurese (3). According to Davies (2005), the XP Hasan, which appears to move out of the finite embedded CP, is essentially base-generated in the matrix object position and coindexed with the third-person pronoun aba'eng in the embedded clause:

(3) *Madurese* (Davies 2005: 653)
Siti ngera **Hasan**$_i$ [ja' dokter juwa mareksa **aba'eng**$_i$].
Siti AV.think **Hasan**$_i$ [C doctor DEM AV.examine **he**$_i$]
'Siti thinks about Hasan$_i$ that the doctor examined him$_i$.'

A second type of RTO construction has been analyzed as involving an actual movement of the XP out of the embedded clause. Such constructions invariably impose a constraint known as "Subject-only", whereby only the embedded subject is eligible for raising (e.g., Japanese: Bruening 2001; Tanaka 2002; Korean: Yoon 2007; Romanian: Alboiu & Hill 2013; Zulu: Halpert & Zeller 2015). In Zulu RTO, for example, only the embedded subject and not the embedded object (e.g., 'egg') can surface at the matrix object position and serve as an XP, as seen in (4):

(4) *Zulu* (Halpert & Zeller 2015: 476)
a. Ngi-fun-a [ukuthi u-Sipho a-phek-e i-qanda].
1SG-want-FV [C AUG-1a.Sipho 1.SM-cook-SUBJ AUG-5.egg]
'I want Sipho to cook an egg.'
b. Ngi-fun-a u-Sipho [ukuthi a-phek-e i-qanda].
1SG-want-FV AUG-1a.Sipho [C 1.SM-cook-SUBJ AUG-5.egg]
'I want Sipho to cook an egg.'
c. *Ngi-fun-a i-qanda [ukuthi u-Sipho a-phek-e].
1SG-want-FV AUG-5.egg [C AUG-1a.Sipho 1.SM-cook-SUBJ]
(intended: 'I want Sipho to cook an egg.')

Many Philippine-type Austronesian languages impose a similar constraint known as "Pivot-only", whereby only the syntactically pivotal phrase eligible for A'-extraction (henceforth the Pivot) can participate in raising (e.g., Malagasy: Paul & Rabaovololona 1998; Pearson 2005; Tagalog: Gerassimova & Sells 2008; Law 2011; Atayal: Liu 2011; Tsou: Liu 2011; Paiwan: Wu 2013; Amis: Chen & Fukuda 2016; Seediq: Chen & Fukuda 2016). This constraint is illustrated with the Malagasy data below. As seen in (5), when the embedded verb of a complex sentence is in Actor voice (AV) (5a), only the external argument of the clause, i.e., the embedded Pivot, is eligible for raising. The embedded patient 'that chicken' cannot raise (5b), as it is not the Pivot of the AV clause.[1] When the embedded verb is marked in Patient voice (PV), only the embedded patient, i.e., the Pivot

[1] For the sake of consistency, I replace the terms "Actor trigger" and "Theme trigger" used in Pearson (2005) with "Actor voice" and "Patient voice", respectively.

of the PV clause, is eligible for raising (5c). The embedded external argument 'Ranaivo' cannot raise (5d), as it is not the Pivot of the clause:[2]

(5) *Malagasy* (Pearson 2005: 447)

a. mihevitra an-dRanaivo [ho namono an'ilay akoho] Rakoto.
AV.think ACC-Ranaivo [C PST.AV.kill ACC-that chicken] Rakoto.PIVOT
'Rokoto thinks of Ranaivo that (he) killed that chicken.'

b. *mihevitra an'ilay akoho [ho namono Ranaivo] Rakoto.
AV.think ACC-that chicken [C PST.AV.kill Ranaivo.PIVOT] Rakoto.PIVOT
(intended: 'Rakoto thinks of that chicken that Ranaivo killed (it).')

c. mihevitra an'ilay akoho [ho novonoin-dRanaivo] Rakoto.
AV.think ACC-that chicken [C PST.PV.kill-Ranaivo.GEN] Rakoto.PIVOT
'Rakoto thinks of that chicken that Ranaivo killed (it).'

d. *mihevitra an-dRanaivo [ho novonoina ilay akoho] Rakoto.
AV.think ACC-Ranaivo [C PST.PV.kill that chicken.PIVOT] Rakoto.PIVOT
(intended: 'Rakoto thinks of Ranaivo that (he) killed that chicken.')

The purpose of this paper is to investigate a heretofore unanalyzed RTO construction in the Philippine-type Austronesian language Puyuma, which, unlike most attested cases of RTO, need not contain a pronoun in the embedded clause coindexed with the XP (e.g., (3)), and does not impose a "Subject/Pivot-only" constraint on the raised phrase. Contra the observation from Malagasy (5), a "raised" phrase in Puyuma RTO need not be the Pivot of the embedded clause. As seen in (6), in a complex sentence with a PV-marked embedded clause, the embedded Pivot kujan 'the shrimp' (6b) and the non-Pivot external argument walak 'the child' (6c) are both eligible for raising:

(6) *Puyuma*

a. ma-ladram=ku [dra tu_i=deru-aw na kujan kana
AV-know=1SG.PIVOT [C 3.GEN_i=cook-PV DEF.PIVOT shrimp DEF.GEN
$walak_i$ adaman].
$child_i$ yesterday]
'I know that the child cooked the shrimp yesterday.'

b. ma-ladram=ku kana kujan [dra tu_i=deru-aw kana
AV-know=1SG.PIVOT DEF.ACC shrimp [C 3.GEN_i=cook-PV DEF.GEN
$walak_i$ adaman].
$child_i$ yesterday]
'I know that the child cooked the shrimp yesterday.'

c. ma-ladram=ku kana $walak_i$ [dra tu_i=deru-aw na
AV-know=1SG.PIVOT DEF.ACC $child_i$ [C 3.GEN_i=cook-PV DEF.PIVOT
kujan adaman].
shrimp yesterday]
'I know that the child cooked the shrimp yesterday.'

Adjuncts that semantically belong to the embedded clause are also accessible to raising. As seen in (7), an embedded locative adjunct ('in Arasip') may appear to the left of the complementizer dra and serve as an XP (7b):

[2] This paper adopts the conventional glosses "Pivot," "Genitive," and "Accusative" in the Austronesian literature without committing to any specific analysis of Philippine-type Austronesian languages. The label "Pivot" refers to the argument-marking on the sole phrase in a clause eligible for A'-extraction. The label "Genitive" refers to the case-marking on non-Pivot-marked external arguments. The label "Accusative" refers to the case-marking on non-Pivot-marked internal arguments.

(7) *Puyuma*

a. ma-ladram=ku [dra senay na bangsaran (i
AV-know=1SG.PIVOT [C <AV>sing DEF.PIVOT young.man (LOC
Arasip) adaman].
Arasip) yesterday]
'I know that the young man sang (in Arasip) yesterday.'

b. ma-ladram=ku i Arasip [dra senay na
AV-know=1SG.PIVOT LOC Arasip [C <AV>sing DEF.PIVOT
bangsaran adaman].
young.man yesterday]
'I know that the young man sang in Arasip yesterday.'

At first glance, the Puyuma RTO construction appears to involve an XP that undergoes movement from the embedded clause to a matrix position, similar to what has been proposed for RTO in Japanese, Romanian, and Zulu (Tanaka 2002; Alboiu & Hill 2013; Halpert & Zeller 2015). The goal of this paper is to demonstrate that examples (6)–(7) in fact represent an under-explored type of RTO construction, in which the XP is base-generated at the embedded left periphery as a hanging topic, which is semantically linked to the embedded clause via the aboutness condition (e.g., Reinhart 1981; Lambrecht 1994). As an aboutness relation between a CP and a left-dislocated phrase (XP) can be established either through coindexation with an embedded pronoun or simply through the pragmatics, Puyuma RTO may, but need not, involve a gap in the embedded clause. This analysis is presented in (8):

(8) V_{Matrix} [$_{CP}$ $XP_{(i)}$ C V …… ($pronoun_i$) …] via the aboutness condition

Under (8), I show that the relation between the XP and the embedded CP in Puyuma RTO is parallel to that between hanging topics and root clauses in the language. I argue accordingly that Puyuma RTO is best analyzed as an embedded topic construction that involves an aboutness topic base-generated at the left periphery of a finite embedded clause. Drawing on comparative data from RTO in Madurese (Davies 2005), Sundanese (Kurniawan 2012), and Tagalog (Gerassimova & Sells 2008; Law 2011), I discuss how the observation from Puyuma RTO enriches a typology of non-movement-type RTO constructions. Finally, I explore how the present construction adds to the microvariation found in RTO constructions that have been analyzed as containing an XP as an embedded topic, drawing on previous analyses of Tsez (Polinsky & Potsdam 2001) and Romanian (Alboiu & Hill 2013).

The remainder of the paper is structured as follows. I begin by describing the basic facts of Puyuma RTO in Section 2, and present a non-movement analysis of the XP in Section 3. Section 4 investigates the structural relation between the XP and the embedded CP, and discusses why the XP shows apparent matrix object behaviors while situated in the embedded left periphery. Section 5 explores the shared characteristics between the XPs in RTO and hanging topics in Puyuma, and shows that Puyuma RTO is best analyzed as an embedded topic construction. Section 6 places Puyuma RTO in a typology of RTO constructions and discusses its implications. Section 7 summarizes and concludes.

2 Puyuma RTO basics

Previous studies have shown that RTO constructions across languages vary in (a) the size and finiteness of the complement, (b) the types of verbs that allow the structure, (c) the productivity of the construction, (d) the constraint on what types of phrases may serve as an XP, and (e) how the matrix behavior of the XP is manifested (see, e.g., Massam 1985;

Moore 1998; Bruening 2001; Polinsky & Potsdam 2001; Tanaka 2002; Davies 2005; Yoon 2007; Alboiu & Hill 2013; Halpert & Zeller 2015). In this section, I provide a sketch of the morphosyntax of Puyuma (2.1), and present basic facts of Puyuma RTO with regard to (a)–(e) (2.2–4), summarized in (9):

(9) Main traits of Puyuma RTO
   a. Associated with a fully finite CP complement.
   b. Compatible with CP-taking verbs, most commonly with knowledge and perception verbs.
   c. Fully productive with Philippine-type voice alternation in both matrix and embedded clauses.
   d. Employs an XP that shows matrix-object behavior in case-marking and binding.
   e. Requires the XP to be definite, unless the XP bears a generic reading.

2.1 Puyuma morphosyntax basics

Puyuma is a severely endangered Austronesian language spoken in southeastern Taiwan with less than 1,500 speakers (UNESCO 2010). Prior to this study, its RTO construction was reported in two reference grammars (Huang 2000; Teng 2007), both of which described it as a raising construction. The specific constraints and properties of this construction, however, have remained underanalyzed. Before entering into the discussion, I present basic facts of Puyuma relevant to the analysis of RTO.

As a typical Philippine-type language, Puyuma is predicate-initial, and possesses a four-way voice system with an elaborate argument-marking mechanism. The mapping between voice-marking and the argument-marking pattern in the language is presented in Table 1.

As seen above, in Puyuma, when a clause is marked in Actor voice (AV) (-em-), Pivot-marking falls on the external argument, with the internal argument Accusative-marked (10a).[3] When a clause is in Patient voice (PV) (-aw), Pivot-marking falls on the internal argument, with the external argument Genitive-marked (10b). When a clause is in Locative voice (LV) (-ay) or Circumstantial voice (CV) (-anay), Pivot-marking falls on the locative phrase and the benefactive or instrumental phrase, respectively. In either voice, the external argument carries Genitive-marking, and the internal argument carries Accusative-marking, as seen in (10c)–(d).

(10) Argument-marking pattern in Puyuma AV, PV, LV, and CV clauses
   a. deru=ku dra bu'ir. [Actor voice]
      cook<AV>=1SG.PIVOT INDF.ACC taro
      'I cooked taro.'

Table 1: Argument-marking pattern in Puyuma.

	Actor voice	**Patient voice**	**Locative voice**	**Circumstantial voice**
external argument	**Pivot**	Genitive	Genitive	Genitive
internal argument	Accusative	**Pivot**	Accusative	Accusative
locative	Locative	Locative	**Pivot**	Locative
benefactor/instrument	Oblique	Oblique	Oblique	**Pivot**

[3] See footnote 2 for a note on the use of the terms "Accusative" and "Genitive" in this paper.

b. ku = deru-aw na bu'ir. [Patient voice]
1SG.GEN = cook-PV DEF.PIVOT taro
'I cooked the taro.'

c. ku = deru-ay dra bu'ir na daderuwan. [Locative voice]
1SG.GEN = cook-LV INDF.ACC taro DEF.PIVOT pot
'I cooked taro in the pot.'

d. ku = deru-anay dra bu'ir i Siber. [Circumstantial voice]
1SG.GEN = cook-CV INDF.ACC taro SG.PIVOT Siber
'I cooked taro for Siber.'

There is a noteworthy exception to this pattern. Like many other Philippine-type languages, Puyuma has a number of verbs that are morphologically marked as LV (-ay) but take a PV argument structure. In such cases, the LV-marked verb selects no locative phrase, but employs a Pivot-marked internal argument, as seen in (11a)–(b). Such verbs are glossed as "LV[PV]" throughout the paper.

(11) LV-marked verb with a PV argument structure
a. ku = abalru-ay ku = paysu.
1SG.GEN = forget-LV[PV] 1SG.POSS.PIVOT = money
'I forgot about my money.'

b. ku = talam-ay nu = eraw adaman.
1SG.GEN = try-LV[PV] 2SG.POSS.PIVOT = alcohol yesterday
'I tried your alcohol yesterday.'

The argument-marking system of Puyuma is presented in Table 2. As seen below, case-markers in the language are portmanteau in function, specifying both the case status of a phrase and the number and definiteness of its referent. In the dialect (Nanwang) investigated in this paper, Genitive and Accusative case have undergone morphological syncretism (Teng 2009). A Genitive/Accusative distinction is nevertheless evident by the presence or absence of a Genitive proclitic that crossreferences the Genitive phrase. As seen in (12a)–(b), the external argument of a non-AV clause is obligatorily present as a pronominal proclitic, which crossreferences a Genitive-marked proper name (12a). If the external argument is a pronoun, it appears merely as a proclitic. Accusative phrases, on the other hand, are not cross-referenced by a proclitic (e.g., *kana kuraw* 'the fish' in (12b)), which are therefore distinguished from the Genitive phrases. For the sake of clarity, I maintain a Genitive/Accusative distinction throughout the glosses in this paper.

(12) Genitive proclitics in Puyuma's non-AV clauses
a. tu_i = trima-aw na pangudral (kan $Senten_i$) adaman.
$3.GEN_i$ = buy-PV DEF.PIVOT pineapple (SG.GEN $Senten_i$) yesterday
'He/She/(Senten) bought pineapple yesterday.'

Table 2: The argument-marking system of Nanwang Puyuma.

	proper name		common noun		location
	singular	**plural**	**indefinite**	**definite**	
Pivot	*i*	*na*	*a*	*na*	*i*
Genitive	*kan*	*kana*	*dra*	*kana*	—
Accusative	*kan*	*kana*	*dra*	*kana*	*i*

b. tu_i = pangasip-anay na urtati (kana $walak_i$) kana kuraw.
3.GEN$_i$ = fish-CV DEF.PIVOT earthworm (DEF.GEN $child_i$) DEF.ACC fish
'He/She/(the child) fished for the fish with the earthworms.'

The examples below illustrate how the definiteness distinction in argument-marking is manifested. In (13a), both the external and internal arguments bear an indefinite marker, whereas in (13b), both arguments are definite-marked. As both examples are in AV, there is no proclitic on the verb corresponding to the external argument *bangsaran* 'young man'.

(13) Definite vs. indefinite-marking in Puyuma
a. me-na'u a bangsaran dra suwan.
AV-see INDF.PIVOT young.man INDF.ACC dog
'A young man saw a dog.'
b. me-na'u na bangsaran kana suwan.
AV-see DEF.PIVOT young.man DEF.ACC dog
'The young man saw the dog.'

Finally, it is important to note that Puyuma imposes an A'-extraction restriction commonly found in Philippine-type languages, in which only the "Pivot"-marked phrase is eligible for A'-extraction. This constraint is known as "Pivot-only." As exemplified in (14), when a clause is AV-marked, only the external argument, i.e., the Pivot, is accessible to relativization (14a). The internal argument cannot be relativized (14b), as it is not the Pivot of the AV-clause:

(14) The Pivot-only constraint in Puyuma A'-extraction
a. maidrang [na tenun dra kiping]
old.person [LK <AV>weave INDF.ACC clothes]
'the old person who wove clothes'
b. *kiping [na tenun na maidrang]
clothes [LK <AV>weave DEF.PIVOT old.person]
(intended: 'the clothes that the old person wove')

With this background in mind, I present the basic facts of Puyuma RTO in the following subsections.

2.2 The finite CP analysis of RTO complements

I begin by clarifying the size and finiteness of the complement clause in the Puyuma RTO construction.

Puyuma RTO is associated with verbs that select a finite CP complement, and is most commonly observed with knowledge and perception verbs (e.g., 'see', 'know', 'hear', 'dream', 'pray', 'fear', 'forget', 'miss', 'like'). Most languages in which RTO constructions are attested allow only a limited number of verbs to form an RTO structure (e.g., Japanese: Kuno 1976; Tanaka 2002; Passamaquoddy: Bruening 2001; Tsez: Polinsky & Potsdam 2001; Korean: Yoon 2007; Romanian: Alboiu & Hill 2013). In Puyuma, on the other hand, RTO is fully productive with CP-taking verbs.

The finite CP analysis of the RTO complement is evidenced by three major differences from infinitives. First, a complementizer dra is obligatorily present in the complement of RTO (15a), just as in non-raising sentences selected by the same matrix verb, as in (15b). In these examples I indicate the XP's thematic equivalent in the embedded clause as "e.c." (empty category), followed by a parenthesis that indicates its case status, as seen in (15a):

(15) Lack of case connectedness effect in Puyuma RTO

a. me-na'u = ku **kan** **Labu**$_i$ [*(dra) tu$_i$ = trekel-aw na
AV-see = 1SG.PIVOT **SG.ACC** **Labu**$_i$ [C 3.GEN$_i$ = drink-PV DEF.PIVOT
eraw e.c.(GEN)$_i$].
alcohol e.c.(GEN)$_i$]
'I saw that Labu drank the alcohol.'

b. me-na'u = ku [*(dra) tu$_i$ = trekel-aw na eraw
AV-see = 1SG.PIVOT [C 3.GEN$_i$ = drink-PV DEF.PIVOT alcohol
kan Labu$_i$].
SG.GEN Labu$_i$]
'I saw that Labu drank the alcohol.'

In contrast, infinitives in Puyuma do not allow a complementizer, as in (16a)–(b):

(16) a. t < em > alem i Atrung [(*dra) t < em > enun dra katring].
try < AV > SG.PIVOT Atrung [C weave < AV > INDF.ACC pants]
'Atrung tried to weave pants.'

b. m-ungesalr = ku [(*dra) me-ladam t < em > ara' na Puyuma].
AV-start = 1SG.PIVOT [C AV-learn speak < AV > DEF.PIVOT Puyuma]
'I have started learning Puyuma.'

Second, the RTO complement is compatible with all types of voice markers (17a)–(d), as opposed to infinitives, which impose an "AV-only" constraint in voice-marking, whereby Actor voice is the only available voice marker on infinitival verbs (18a)–(b).

(17) Puyuma RTO with different embedded voices

a. me-na'u i Siber kanu$_i$ [dra d < em > eru = yu$_i$
AV-see SG.PIVOT Siber 2SG.ACC$_i$ [C < AV > cook = 2SG.PIVOT$_i$
dra abay].
INDF.ACC rice.ball]
'Siber saw that you cooked sticky rice balls.'

b. me-na'u i Siber kanu$_i$ [dra nu$_i$ = deru-aw na
AV-see SG.PIVOT Siber 2SG.ACC$_i$ [C 2SG.GEN$_i$ = cook-PV DEF.PIVOT
abay].
rice.ball]
'Siber saw that you cooked sticky rice balls.'

c. me-na'u i Siber kanu$_i$ [dra nu$_i$ = pubini'-ay dra
AV-see SG.PIVOT Siber 2SG.ACC$_i$ [C 2SG.GEN$_i$ = sow-LV INDF.ACC
bini' na uma'].
seed DEF.PIVOT field]
'Siber saw that you sowed seeds in the field.'

d. me-na'u i Siber kanu$_i$ [dra nu$_i$ = deru-anay i
AV-see SG.PIVOT Siber 2SG.ACC$_i$ [C 2SG.GEN$_i$ = cook-CV SG.PIVOT
Tuku dra abay].
Tuku INDF.ACC rice.ball]
'Siber saw that you cooked sticky rice balls for Tuku.'

(18) Infinitives in Puyuma

a. tu = t < em > alam [t < em > enun/*tenun-aw/*tenun-ay/*tenun-anay
3.GEN = try < AV > [weave < AV > /*weave-PV/*weave-LV/*weave-CV
dra katring].
INDF.ACC pants]
'He/she tried to weave pants.'

b. ku = talam-ay [deru/*deru-aw/*deru-ay/*deru-anay
1SG.GEN = try-LV[PV] [cook<AV>/*cook-PV/*cook-LV/*cook-CV
na ura].
DEF.PIVOT muntjac]
'I tried to cook the muntjac.'

Third, the complement of RTO is fully compatible with all types of aspect markers (19), as opposed to infinitives, which cannot host aspect markers (20):

(19) RTO complement modified by an aspect marker
a. ku = abalru-ay **kan Apeng**$_i$ [dra a-uka e.c.(PIVOT)$_i$
1SG.GEN = forget-LV[PV] **SG.ACC Apeng** [C AV.IRR-go e.c.(PIVOT)$_i$
i Arasip andaman].
LOC Arasip tomorrow]
'I forgot that Apeng will go to Arasip tomorrow.'
b. me-na'u = ku **kan Siber**$_i$ [dra tra-trakaw e.c.(PIVOT)$_i$
AV-see = 1SG.PIVOT **SG.ACC Siber**$_i$ [C <AV>PROG-steal e.c.(PIVOT)$_i$
dra patraka].
INDF.ACC meat]
'I saw that Siber was stealing meat.'

(20) Aspect-deficiency in Puyuma infinitives
a. talam = ku [m-uka/*a-uka i Balangaw].
try<AV> = 1SG.PIVOT [AV-go/*AV.IRR-go LOC Balangaw]
'I tried to go/*will go to Balangaw.'
b. tu = talam-ay [deru/*da-deru na bitrenun].
3.GEN = try-LV[PV] [cook<AV>/*PROG<AV>cook DEF.PIVOT eggs]
'He/she tried to cook/*be cooking eggs.'

Given the observations above, it can be concluded that the complements of Puyuma RTO are finite CPs.

2.3 The matrix behaviors of the XP

The XP in Puyuma RTO shows matrix object-like behaviors with respect to case-marking and binding. As seen below, an XP shows no case connectivity effect with the embedded clause, and its case-marking is fully dependent on the voice-marking of the matrix verb. When the matrix verb is in AV, the XP must bear Accusative-marking (21a), like a normal object of an AV verb (21b). When the matrix verb is in PV or LV, the XP obligatorily bears Pivot-marking (22a), like a normal object of PV verbs (22b):[4]

(21) The case-marking mechanism of the XP in Puyuma RTO
a. me-na'u = ku kan/*i Sayki$_i$ [dra tu$_j$ = karatr-aw
AV-see = 1SG.PIVOT SG.ACC/*SG.PIVOT Sayki$_i$ [C 3.GEN$_j$ = bite-PV
kanu = suwan$_j$ e.c.(PIVOT)$_i$].
2SG.POSS.GEN = dog$_j$ e.c.(PIVOT)$_i$]
'I saw that your dog bit Sayki.'

[4] As discussed in Section 2.1, a number of activity verbs in Puyuma employ an LV-form but take a PV argument structure. As seen in (22a), such verbs may take a clausal complement and form an RTO sentence. As these verbs behave like a PV verb and select a theme (rather than a locative phrase) as their argument (e.g., (22b)), they do not violate the generalization above.

b. me-na'u = ku kan/*i Sayki uninan.
AV-see = 1SG.PIVOT SG.ACC/*SG.PIVOT Sayki today
'I saw Sayki today.'

(22) The Case-marking mechanism of the XP in Puyuma RTO
a. ku = aparu-ay na/*kana walak$_i$ [dra tu$_i$ = deru-aw
1SG.GEN = forget-LV[PV] DEF.PIVOT/*DEF.GEN child$_i$ [C 3.GEN$_i$ = cook-PV
e.c.(GEN)$_i$ na bu'ir].
e.c.(GEN)$_i$ DEF.PIVOT taro]
'I forgot that the child cooked the taro.'
b. ku = aparu-ay na/*kana suwaksuk.
1SG.GEN = forget-LV[PV] DEF.PIVOT/*DEF.GEN key
'I forgot the key.'

As can also be seen in the data above, Puyuma RTO imposes no voice-marking constraint on either the matrix or embedded verb, except for the fact that Circumstantial voice (as well as true Locative voice) is not an available voice type for the matrix verb of RTO.[5]

The matrix behavior of the XP is also manifested in binding. As seen below, at the "raised" position, a reflexive XP must be bound by a matrix antecedent, and it cannot be bound by the embedded external argument—which c-commands the XP's thematic equivalent in the embedded clause. Therefore, in the RTO sentence (23a), the XP kantaaw 'himself' can only be interpreted as bound by the matrix external argument 'Siber', whereas in the non-raising sentence (23b), the thematic equivalent of the XP is locally bound by the embedded external argument, 'Isaw'. Therefore, the RTO sentence (23a) bears a different reading from its non-raising counterpart (23b).

(23) The binding relations in RTO and non-raising complex sentences
a. RTO
ma-tiya i Siber$_i$ **kantaaw$_i$** [dra tu$_j$ = saletra'-ay e.c.(PIVOT)
AV-dream SG.PIVOT Siber$_i$ **3SG.ACC.REFL$_i$** [C 3.GEN$_j$ = slap-LV e.c.(PIVOT)
kan Isaw$_j$].
SG.GEN Isaw$_j$]
'Siber$_{<i>}$ dreamt that Isaw$_{<j>}$ slapped him$_{<i/*j>}$.'
b. Non-raising
ma-tiya i Siber$_i$ [dra tu$_j$ = saletra'-ay kan Isaw$_j$
AV-dream SG.PIVOT Siber$_i$ [C 3.GEN$_j$ = slap-LV SG.GEN Isaw$_j$
taytaaw$_j$].
3SG.PIVOT.REFL$_j$]
'Siber$_{<i>}$ dreamt that Isaw$_{<j>}$ slapped himself$_{<j/??i>}$.'[6]

[5] As Circumstantial voice selects a benefactor or instrument as the Pivot, it is not applicable to RTO constructions, since the embedded CP of an RTO sentence is a direct object of the matrix verb. The same reason applies to true Locative voice, which selects a locative phrase as the Pivot.

[6] An anonymous reviewer commented that it should be possible to interpret the embedded pronoun *tayta'aw* in (25b) as a reflexive bound by the matrix subject 'Siber', given the fact that anaphoric binding in Puyuma can cross a clausal boundary, as seen in the following example:

(i) ma-tiya **i** **Labu$_i$** [dra m-uka i Kalingku **taytaaw$_i$**].
AV-dream **SG.PIVOT** **Labu$_i$** [C AV-go LOC Kalingku **3SG.REFL$_i$**]
'Labu$_{<i>}$ dreamt that herself$_{<i>}$ went to Kalingku.'

However, all Puyuma speakers I consulted considered it far more natural to interpret the pronoun in (23b) as a reflexive of the embedded agent. I suppose that this preference for reflexives to be locally bound is not too surprising. As a matrix reflexive reading for the pronoun 'himself' is marginally acceptable for (23b), I consider the binding facts in (23b) to have no conflict with the long-distance reflexivization phenomenon shown in this example.

A similar effect is observed with RTO sentences that involve an XP containing a possessor. In such cases, only the matrix external argument and not the embedded external argument can bind into the XP and be interpreted as its possessor. Therefore, in the RTO sentence (24a), the XP tu=ngiyaw 'her cat' is most naturally interpreted so that the possessor is coindexed with the matrix subject Akang, whereas in a non-raising sentence (24b), tu=ngiyaw may be interpreted as the possessor referring to either the embedded external argument or the matrix external argument, resulting in a different reading from (24a).[7]

(24) The binding relation of the XP in Puyuma RTO

a. RTO with a pronominal XP
me-na'u i Akang$_i$ kantu$_i$=ngiyaw [dra tu$_j$=pakan-ay
AV-see SG.PIVOT Akang$_i$ 3.POSS.ACC$_i$=cat [C 3.GEN$_j$=feed-LV[PV]
e.c.(PIVOT) kan Pilay$_j$].
e.c.(PIVOT) SG.GEN Pilay$_j$]
'Akang$_{<i>}$ saw that Pilay$_{<j>}$ fed her$_{<i/?j>}$ cat.'

b. Non-raising
me-na'u i Akang$_i$ [dra tu$_j$=pakan-ay kan Pilay$_j$
AV-see SG.PIVOT Akang$_i$ [C 3.GEN$_j$=feed-LV[PV] SG.GEN Pilay$_j$
tu$_{i/j}$=ngiyaw].
3.POSS.PIVOT$_{i/j}$=cat]
'Akang$_{<i>}$ saw that Pilay$_{<j>}$ fed her$_{<i/j>}$ cat.'

As shown above, the XP in Puyuma RTO shows matrix object behaviors in both case-marking and binding.

2.4 The definiteness constraint on the XP

As introduced in Section 1, Philippine-type Austronesian languages commonly impose a "Pivot-only" constraint on the XP in RTO, which prevents non-A'-extractable phrases from participating in raising. In Puyuma RTO, however, this constraint is absent. As seen in (25), phrases with different case status and grammatical relations may serve as an XP. In (25a), the XP 'Sayki' is thematically identified with the Genitive-marked external argument of the embedded clause, whereas in (25b), the XP nadru walak 'that child' is thematically linked to the Accusative object of the embedded clause. In (25c), the XP 'Tripul' is thematically identified with a locative adjunct:

(25) a. ma-tiya=ku kan Sayki$_i$ [dra tu$_i$=trakaw-aw
AV-dream=1SG.PIVOT DEF.ACC Sayki$_i$ [C 3.GEN$_i$=steal-PV
nu=palidring e.c.(GEN)$_i$].
2SG.POSS.PIVOT=car e.c.(GEN)$_i$]
'I dreamt that Sayki stole your car.'

b. ma-ladram=ku kan nadru walak$_i$ [dra p<en>ukpuk
AV-know=1SG.PIVOT SG.ACC that child$_i$ [C <AV>beat
na sinsi e.c.(ACC)$_i$].
DEF.PIVOT teacher e.c.(ACC)$_i$]
'I know that the teacher beat the child.'

[7] The XP *kantu ngiyaw* in (24a) appears to bear a different possessive form from its embedded counterpart *tu ngiyaw* in (24b). This is because possessive pronouns in Puyuma are sensitive to Case: *kantu* is the third-person Accusative form and *tu* is the third-person Pivot form.

c. ma-ladram=ku i Tripul$_i$ [dra m-uka=yu e.c.(LOC)$_i$].[8]
AV-know=1SG.PIVOT LOC.ACC Tripul$_i$ [C AV-go=2SG.PIVOT e.c.(LOC)$_i$]
'I know that you have been to Tripul.'

While a "Pivot-only" constraint on the XP is absent and the construction imposes no restriction on the grammatical relation of the XP, the XP in Puyuma RTO must be definite or be interpreted as generic if it bears an indefinite marking. As seen in (26a) and (27a), a phrase can be marked as either definite or indefinite in its theta-position ((26a), (27a)), whereas an XP must be definite-marked at the "raised" position in an RTO sentence ((26b), (27b)):

(26) Definiteness constraint on the XP
a. ma-ladram=ku [dra sagar kanu a/na traw].
AV-know=1SG.PIVOT [C like.AV 2SG.ACC INDF.PIVOT/DEF.PIVOT person]
'I know that {someone/the person} likes you.'

b. ma-ladram=ku *dra/✓kana traw$_i$ [dra sagar e.c.(PIVOT)$_i$
AV-know=1SG.PIVOT INDF.ACC/DEF.ACC person$_i$ [C like.AV e.c.(PIVOT)$_i$
kanu].
2SG.ACC]
'I know that {*someone/the person} likes you.'

(27) Definiteness constraint on the XP
a. kilengaw=ku [dra trakaw na walak
AV.hear=1SG.PIVOT [C <AV>steal DEF.PIVOT child
{dra/kana paysu}].
{INDF.ACC/DEF.ACC money}]
'I heard that the child stole {some money/the money}.'

b. kilengaw=ku *dra/✓kana paysu$_i$ [dra trakaw
AV.hear=1SG.PIVOT INDF.ACC/DEF.ACC money$_i$ [C <AV>steal
na walak e.c.(ACC)$_i$].
DEF.PIVOT child e.c.(ACC)$_i$]
'I heard that the child stole {*some money/the money}.'

Exceptions to this constraint are found only when the XP has a generic reading. In such cases, the indefinite-marked XP may surface at the "raised" position, followed by a CP that denotes a proposition about the generic XP, as in (28a)–(b):

(28) XP as an indefinite specific DP
a. ma-ladram=ku dra babayan driya [dra sagar e.c.(PIVOT)$_i$
AV-know=1SG.PIVOT INDF.ACC woman all [C like.AV e.c.(PIVOT)$_i$
dra aputr].
INDF.ACC flower]
'I know that all women like flowers (while men do not necessarily like them.)'

[8] Note that Locative phrases in Puyuma are always marked by the locative marker *i*, which does not inflect for Case (see Table 2). As seen in the data below, a locative phrase always carries the marker i regardless of whether it is a Pivot (i) or non-Pivot phrase (ii):

(i) ku=pubini'-ay dra dawa i uma'.
1SG.GEN=sow-LV INDF.ACC millet LOC.(PIVOT) field
'I sowed millet in the field.'

(ii) m-uka=ku i Kalingku adaman.
AV-go=1SG.PIVOT LOC.(OBL) Kalingku yesterday
'I went to Kalingku yesterday.'

b. ma-ladram=ku dra bunga$_i$ [dra mare-imalan e.c.(PIVOT)$_i$
AV-know=1SG.PIVOT INDF.ACC yam$_i$ [C COM.AV-delicious e.c.(PIVOT)$_i$
dra bu'ir].
INDF.ACC taro]
'I know that yam is more delicious than taro.'

Besides such cases, the XPs in Puyuma RTO must be definite. This constraint serves as an important piece of evidence for understanding the nature of this construction, which will be discussed in Sections 4–5.

3 The non-movement status of the XP

Having described the basic traits of Puyuma RTO, I put forward a non-movement analysis of the XP in this section, showing that the XP in Puyuma RTO is base-generated at its spell-out position.

Previous studies have revealed that RTO constructions across languages can be divided into three subtypes according to variation in the following behaviors: (a) the clause that the XP originates in (embedded or matrix), (b) the structural surface position of the XP, and (c) how the XP gets to its surface position (movement or base-generation). The first type of RTO has been analyzed as containing an XP that undergoes cyclic movement from its theta-position to a matrix A-position (29a) (Japanese: Tanaka 2002; Korean: Yoon 2007; Romanian: Alboiu & Hill 2013). The second type of RTO has been claimed to involve an XP that A'-moves from its theta-position to the embedded phase edge (29b) (Indonesian: Chung 1976; Passamaquoddy: Bruening 2001; Tsez: Polinsky & Potsdam 2001). A third type of RTO construction has been analyzed as containing an XP which is base-generated at the "raised" position and binds a coindexed pronoun in the embedded clause (29c) (e.g., Madurese: Davies 2005; Sundanese: Kurniawan 2012).

(29) Three types of RTO constructions
a. XP undergoes cyclic movement from its theta-position to a matrix A-position[9]
V_{matrix} …… XP_i [$_{CP}$ $<t_i>$ C V …… $<t_i>$]
b. XP undergoes A'-movement to the embedded left periphery
V_{matrix} …… [$_{CP}$ XP_i C V …… $<t_i>$]
c. XP as base-generated at the "raised" position
V_{matrix} …… XP_i [$_{CP}$ C V …… $pronoun_i$]

Given the absence of a "Pivot-only" constraint on the XP in Puyuma RTO—which obligatorily applies to all instances of A'-extraction in Puyuma (Huang 2000; Teng 2007)—an A'-movement analysis of the present construction (29a)–(b) is unlikely, pointing to a non-movement analysis of this construction. In the following subsections, I show that the behavior of the XP in Puyuma RTO indeed follows from this prediction.

3.1 Island immunity

The non-movement status of the XP is first indicated by the absence of island effects in the dependency between the XP and its correspondent in the embedded clause. As seen in (30), an XP can be identified with an empty category embedded inside a complex NP.

[9] Note that the cyclic movement in (29a) shows an apparent violation of the Improper Movement Configuration (Chomsky 1973; 1986)—according to which a phrase cannot move from an A'-position (embedded [Spec CP]) to an A-position. Previous works have proposed different accounts for the soundness of this movement: both Tanaka (2002) and Yoon (2007) have argued that the RTO construction in Japanese and Korean involves an instance of A-movement, given that the complement of their construction is not fully finite. Alboiu & Hill (2013), on the other hand, show that the cyclic movement of the XP in Romanian RTO exhibits both A- and A'-properties, and propose that this movement is driven by both [uTop] and [uφ].

That (30b) is wellformed thus suggests that the XP does not undergo A'-movement from the embedded clause.

(30) Immunity to complex NP islands

a. ma-ladram=ku [dra nu=kilengaw [kana ngay [dra
AV-know=1SG.PIVOT [C 2SG.GEN=hear.AV [DEF.ACC rumor [C
m<in>atray i Pilay]]].
AV<PRF>die SG.PIVOT Pilay]]]
'I know that you heard the rumor that Pilay passed away.' (non-raising)

b. ma-ladram=ku kan $Pilay_i$ [dra nu=kilengaw [kana
AV-know=1SG.PIVOT SG.ACC $Pilay_i$ [C 2SG.GEN=hear.AV [DEF.ACC
ngay [dra m<in>atray ec.(PIVOT)$_i$]].
rumor [C AV<PRF>die ec.(PIVOT)$_i$]]
'I know that you heard the rumor that Pilay passed away.' (RTO)

Contra the observation from RTO, relativization (pseudo-clefting) in Puyuma is sensitive to island effects, whereby a phrase embedded inside a complex NP cannot be extracted (31a)–(b). This suggests that, unlike RTO, relativization in Puyuma involves A'-extraction.

(31) Island effects in Puyuma relativization

a. imanay nu=k<in>aladram [na m<in>atray]?
who 2SG.GEN=<PRF.PV>know [LK AV<PRF>die]
'Who is the person that you knew passed away?'

b. *imanay nu=k<in>aladram [na ngay [na m<in>atray]]?
who 2SG.GEN=<PRF.PV>know [DEF.PIVOT rumor [LK AV<PRF>die]]
(intended: 'Who is the person that you knew about the rumor that passed away?')

Consistent with its immunity to complex NP islands, the XP in Puyuma RTO is insensitive to adjunct islands. As seen in (32), the XP 'Isaw', whose thematic equivalent is embedded inside an adjunct clause (32a), is eligible to surface at the "raised" position to form an RTO construction (32b). The well-formedness of this sentence again suggests that the XP does not undergo A'-movement from its theta-position.

(32) Immunity to adjunct islands

a. ma-tiya=ku [dra m-uka=yu i Tripul [anu
AV-dream=1SG.PIVOT [C AV-go=2SG.PIVOT LOC Tripul [because
kualeng i Isaw]].
AV.sick SG.PIVOT Isaw]]
'I dreamt that you went to Tripul because Isaw is sick.'

b. ma-tiya=ku kan $Isaw_i$ [dra m-uka=yu i Tripul
AV-dream=1SG.PIVOT SG.ACC $Isaw_i$ [C AV-go=2SG.PIVOT LOC Tripul
[anu kualeng ec.(PIVOT)$_i$]].
[because AV.sick ec.(PIVOT)$_i$]]
'I dreamt that you went to Tripul because Isaw is sick.'

This analysis is additionally confirmed with the data in (33), which shows that A'-extraction (pseudo-clefting) in Puyuma is sensitive to adjunct islands, as in (33):

(33) Island effect in Puyuma pseudo-clefts
*imanay nu=k<in>aladram [na ma-trangis i Isaw anu
who 2SG.GEN=<PRF.PV>know [LK AV-cry SG.PIVOT Isaw because
m<in>atray]]?
AV<PRF>die]]
'Who is the person that you knew that Isaw cried because (he/she) passed away?'

3.2 The absence of reconstruction effects

A second argument for the non-movement analysis of the XP comes from its lack of reconstruction effects. As shown in the data below, an XP cannot contain a pronoun that is interpreted as a variable bound by the embedded external argument, hence the unavailability of a distributed reading between the XP and an embedded quantifier external argument. Therefore, in (34b), a bound variable reading is not available between the embedded quantifier external argument bulraybulrayan driya 'every girl' and the XP kantu arepu 'her hair'. Likewise, a bound variable reading is not available between the embedded external argument suwan driya 'every dog' and the XP tu ikur 'its tail' in (35b):

(34) a. me-na'u=ku [dra tu=garutr-aw kana bulraybulrayan
AV-see=1SG.PIVOT [C 3.GEN=comb-PV DEF.ACC girl
driya tu=arepu].
every 3.POSS=hair]
'I saw that every girl$_{<i>}$ was combing her$_{<i/j>}$ hair.' (distributed reading available)

b. me-na'u=ku kantu=arepu$_j$ [dra tu$_i$=garutr-aw kana
AV-see=1SG.PIVOT 3.POSS=hair$_j$ [C 3.GEN$_i$=comb-PV DEF.ACC
bulraybulrayan driya].
girl every]
'I saw that every girl$_{<i>}$ was combing her$_{<j/*i>}$ hair.' (distributed reading not available)

(35) a. ma-tiya=ku [dra tu$_i$=karatr-aw kana suwan driya
AV-dream=1SG.PIVOT [C 3.GEN$_i$=bite-PV DEF.ACC dog every
tu$_i$=ikur].
3.POSS$_i$=tail]
'I dreamt that every dog$_{<i>}$ was biting its$_{<i/j>}$ (own) tail.' (distributed reading available)

b. ma-na'u=ku kantu=ikur$_j$ [dra tu$_i$=karatr-aw kana suwan driya].
AV-see=1SG.PIVOT 3.POSS=tail$_j$ [C 3.GEN$_i$=bite-PV DEF.ACC dog every]
'I saw that every dog$_{<i>}$ was biting its$_{<j/*i>}$ tail.' (distributed reading not available)

The in-situ status of the Puyuma XPs is further evidenced by their difference in behavior from those in movement-type RTO constructions, which show reconstruction effects. According to previous studies, in instances of RTO whose XPs are sensitive to island effects, the XP can be interpreted as a variable bound by the embedded subject, suggesting that the XP undergoes movement from the embedded clause (see, e.g., Japanese RTO: Tanaka 2001; Passamaquoddy RTO: Bruening 2001; Romanian RTO: Alboiu & Hill 2013). In Passamaquoddy (Bruening 2001: 6), for instance, an XP can be bound by a quantifier external argument and interpreted as a variable (36b), suggesting that it undergoes A'-movement from the embedded clause:

(36) The presence of reconstruction effects in Passamaquoddy RTO (Bruening 2001: 6)

a. n-kosiciy-a [eli psi=te wen kselm-iht wikuwoss-ol].
1-know.TA-DIR [C all=EMPH someone love-3CON.INF 3.mother-OBV]
'I know that everyone$_{<i>}$ is loved by his$_{<i>}$ mother.' (distributed reading available)

b. n-kosiciy-a **wikuwoss$_i$-ol** [eli psi=te wen kselm-iht <t$_i$>].
1-know.TA-DIR **3.mother$_i$-OBV** [C all=EMPH someone love-3CONJINV <t$_i$>]
'I know that everyone$_{<i>}$ is loved by his$_{<i>}$ mother.' (distributed reading available)

Given the observations above, I conclude that Puyuma RTO is best analyzed as containing an XP base-generated in its spell-out position. Several important traits of this construction follow consistently from this analysis: first, the XP shows no case connectivity effect, indicating that the XP does not undergo movement from the embedded clause, and second, the XP is insensitive to a "Pivot-only" constraint, indicating the absence of A'-movement in this construction.

3.3 The relationship between the XP and the embedded CP

Having presented a non-movement analysis for the XP in Puyuma RTO, I address an important question: how is the relation between the base-generated XP and the embedded CP established? In this section, I demonstrate that the relation between the two is formed by the aboutness condition.

We have seen in Section 1 that an XP can be identified with an adjunct of the embedded clause. Two examples of this type are presented below, whereby the XP is identified with a temporal (37a) or locative (37b) adjunct of the embedded CP:

(37) Embedded adjunct as an XP in RTO

a. kilengaw=ku **amariami** [dra piwalak i Pilay].
hear.AV=1SG.PIVOT **last.year** [C give.birth.AV SG.PIVOT Pilay]
'I heard that Pilay had a baby last year.'

b. ma-ladram=ku **i Taypek** [dra m-uka i Atrung].
AV-know=1SG.PIVOT **LOC Taipei** [C AV-go SG.PIVOT Atrung]
'I know that Atrung has been to Taipei.'

These examples suggests that the presence of a gap might not be necessary for the complement clause of Puyuma RTO, indicating that the relation between the XP and the embedded CP in this construction cannot be attributed to a conventional proleptic analysis—according to which the XP is thematically linked to the embedded clause through coindexation with an embedded pronoun, as in (38) (Higgins 1981; Panhuis 1984; Massam 1985; Davies 2005; Salzmann to appear):

(38) V_{matrix} …… XP_i [$_{CP}$ C V …… $pronoun_i$] prolepsis (repeated from (29c))

The data below shows further evidence that the relation between the XP and the CP in Puyuma RTO is distinct from that of a proleptic construction. In both sentences the embedded clause is gapless, but denotes a proposition relevant to the XP. The well-formedness of both examples (39)–(40) suggests that the XP-CP relation in Puyuma RTO may be established simply through the pragmatics.

(39) ma-ladram=ku **dra aputr** [dra mara-padrangal
AV-know=1SG.PIVOT **INDF.ACC flower** [C AV.SUPER-expensive
na pulrikudrakudran].
DEF.PIVOT chrysanthemum]
'I know about flowers that chrysanthemums are the most expensive.'

(40) ma-ladram=ku **kanadra na sakaputan** [dra mara-inabanaba
AV-know=1SG.PIVOT **DEF.ACC.this LK class** [C AV.SUPER-best
dra tranguru i Siber].
INDF.ACC head SG.PIVOT Siber]
'I know about this class that Siber is the smartest (lit. Siber's head is the best)'

I argue that the relation between the XP and the embedded CP in Puyuma RTO is best analyzed as formed by the aboutness condition (Reinhart 1981; Gundel 1985; Lambrecht 1994; Jacobs 2001) (41), whereby the XP is essentially an aboutness topic of the embedded clause.

(41) A topic is an expression whose referent the sentence is about. The concept "topic" is a category of pragmatic aboutness. (Reinhart 1981)

As an aboutness relation between a topic and a CP can be established either through coindexation with an embedded pronoun or simply through the pragmatics, the embedded CP in a Puyuma RTO sentence may but need not contain a pronoun. This analysis is illustrated in (42):

(42) V_{Matrix} …… $[_{CP}\, DP_{(i)}$ C …. V … (pronoun$_i$)]] via the aboutness condition

If this proposal is on the right track, Puyuma RTO is predicted to show two characteristics: (i) the XP should exhibit topic properties, and (ii) the RTO complement must be pragmatically connected to the referent of the XP to satisfy the aboutness condition. In this subsection, I discuss evidence for the second prediction. The topic properties of the XP will be discussed in Section 4.

Consistent with the proposal in (42), example (43) shows that failure to establish an aboutness relation between the XP and the CP yields semantic infelicity and makes an RTO sentence unacceptable. As seen below, when the embedded CP in RTO does not contain a pronoun coindexed with the XP, the content of the CP must be pragmatically connected to the XP. Therefore, replacing the embedded Pivot etruk 'carp' with ladru 'mango'—which is not pragmatically connected to the XP 'fish'—makes the RTO sentence unacceptable.

(43) ma-ladram=ku [**dra kuraw** [dra mara-imaran na
AV-know=1SG.PIVOT [**INDF.ACC fish** [C AV.SUPER-delicious DEF.PIVOT
{etruk/#pangudral}].
{carp/#mango}]
'I know about fish that {carp/#mango} is the most delicious.'

In line with the observation from (43), example (44) shows that an RTO sentence is infelicitous if the pragmatic connection between the XP and the CP is missing. Without context, the sentence in (44) is unacceptable, as the XP 'Sayki' is not pragmatically linked to the content of the embedded CP "Siber bought a car". However, a Puyuma speaker

I consulted noted that (44) is potentially acceptable if the XP 'Sayki' and the embedded Pivot 'Siber' have a certain relationship that is known by both the speaker and the addressee. For instance, if the XP 'Sayki' refers to the wife of Siber, (44) is acceptable as a propositional sentence about Sayki. This interpretation lends further support to the current analysis, that the relation between the XP and the CP is established through the aboutness condition.

(44) #ma-ladram=ku [kan Sayki [dra trima i Siber
AV-know=1SG.PIVOT [SG.ACC Sayki [C <AV>buy SG.PIVOT Siber
dra palidring]].
INDF.ACC car]]
(intended: 'I know about Sayki that Siber bought a car').

Additional evidence for this analysis is shown in the data below: In order to establish the aboutness relation between the XP and the CP, the XP 'Atrung' in (45) must be interpreted as the possessor of the embedded possessive phrase 'her house', as the XP cannot be pragmatically linked to any other argument within the embedded CP. Therefore, although in simple clauses (e.g., (46)), both 'Senten' and 'Labu' are a potential binder of the possessive phrase 'her house', in the RTO sentence (45), only the XP ('Atrung') can be interpreted as the possessor of the pronominal phrase 'her house' in order for the aboutness relation between the XP and the CP to be established.[10]

(45) ma-ladram=ku [kan Atrung_{i} [dra senay i Senten
AV-know=1SG.PIVOT [SG.ACC Atrung_{i} [C <AV>sing SG.PIVOT Senten
kay i Labu kantu_{i}=ruma']].
and SG.PIVOT Labu 3.POSS.OBL$_{i}$=house.(LOC)]]
'I know about $\text{Atrung}_{<i>}$ that $\text{Senten}_{<j>}$ and $\text{Labu}_{<k>}$ sang in her $_{<i/*j/*k/*n>}$ house.'

(46) senay i Senten kay i Labu kantu=ruma'.
<AV>sing SG.PIVOT Senten and SG.PIVOT Labu 3.POSS.OBL=house.(LOC)
'$\text{Senten}_{<j>}$ and $\text{Labu}_{<k>}$ sang in her $_{<j/k/n>}$/their $_{<j/k/n>}$ house.'

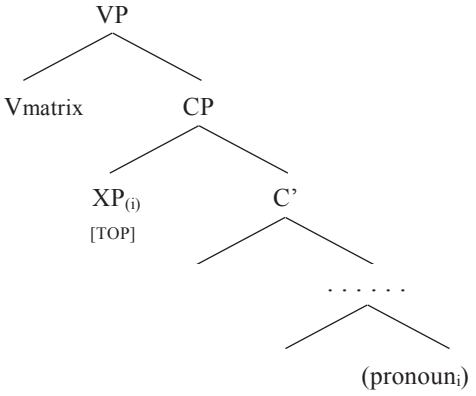
Given the observations above, I conclude that the relation between the XP and the CP in Puyuma RTO is best analyzed as established through the aboutness condition.

4 The structure of Puyuma RTO

Having addressed the non-movement nature of the XP and its relation with the embedded clause, I turn to two subsequent questions: (i) what is the structural relation between the XP and the embedded CP?, and (ii) how are the matrix behaviors of the XP accounted for? I will show that the XP in Puyuma RTO is best analyzed as an aboutness topic base-generated in a specifier position in the embedded left periphery, as in (47):

[10] Note that the possessor-possessum relation between the XP and the embedded possessum phrase in (45) cannot be analyzed as an instance of possessor raising. This is because the possessor-possessum relation between the XP and the possessum in the embedded clause is not subject to a "Pivot-only" constraint—namely, the possessum is not the Pivot of the embedded clause. As all instances of A'-movement in Puyuma (as well as in other Philippine-type languages) are subject to this constraint, the lack of a this constraint here thus rules out (45) as an example of possessor raising.

(47) The proposed structure of Puyuma RTO



Under this analysis, the XP forms a constituent with the embedded CP, and does not undergo movement into an A-position in the higher clause. I will first present evidence for this analysis (4.1) and discuss how the XP shows apparent matrix object-like behaviors (4.2).

4.1 The structural relation between the XP and the embedded CP

Support for the XP being internal to the embedded CP comes from two independent pieces of evidence. First, an XP cannot be separated from the embedded CP in linear order, as seen in (48):[11]

(48) me-na'u=ku kan Labu$_i$ (*adaman) [dra trima e.c.(PIVOT)$_i$
AV-see=1SG.PIVOT SG.ACC Labu$_i$ (*yesterday) [C <AV>buy e.c.(PIVOT)$_i$
dra patraka].
INDF.ACC meat]
'Yesterday I saw that Labu bought some meat.'

In contrast, a genuine matrix object can be separated from a following complement by the same temporal adverb adaman 'yesterday', as in (49):[12]

(49) ku=rengarengay-aw i Labu (✓adaman) [dra tra-trima-an
1SG.GEN=persuade-PV SG.PIVOT Labu (✓yesterday) [C RED-buy-SUBJ
dra palidring].
INDF.ACC car]
'Yesterday I persuaded Labu to buy a car.'

The difference between (48) and (49) suggests that the XP in Puyuma RTO must not be base-generated in a matrix object position, but is situated in the embedded left periphery. This analysis is reinforced by an observation from Madurese proleptic construction (Davies 2005), where an XP is free to surface to the left of a matrix temporal adverb, as in (50):

[11] The temporal adverb *adman* 'yesterday' in (48) cannot be interpreted as modifying the embedded clause. This observation is consistent with speakers' responses to grammaticality judgement test, that multiple XPs are not allowed in Puyuma RTO.

[12] Based on primary data, I assume (49) to be an instance of finite control (e.g., Landau 2004; Lee 2009), in which the complementizer *dra* is obligatorily presented. This control complement is nevertheless distinct from the complement of RTO, as the verbal morphology inside the complement is obligatorily in subjunctive form. Given the focus of the paper I do not go into details regarding the structure of (49) here.

(50) *Madurese* (Davies 2005: 651)
Siti ngera Ina$_i$ (✓bari') [ja' aba'eng$_i$ mangkat dha' Jakarta are
Siti AV.think Ina$_i$ (✓yesterday) [C she$_i$ leave to Jakarta day
Kemmes].
Wednesday]
'Siti thought yesterday that Ina left for Jakarta on Wednesday.'

Despite the lack of in-depth analysis on the structural position of the XP in proleptic constructions, previous work has generally assumed it to be base-generated in a direct object position and be independent of the embedded clause (see, e.g., Davies 2005, which proposes the XP to be base-generated at [Spec, AgrOP]; see also Kurniawan 2012 and Salzmann to appear for a similar assumption). The difference in acceptability of an intervening adverb between the XP and the CP between Madurese prolepsis and Puyuma RTO therefore suggests that the latter employs a structure distinct from prolepsis.

The second argument for the current analysis—that the XP in Puyuma RTO is inside the embedded CP—comes from the case-marking of the XP. As shown in all data presented in this paper, in Puyuma, there can only be one (particular) phrase that is eligible for Pivot-marking within each finite CP. This "Pivot as unique constraint" is stated in (51) and illustrated with the data below in (52)–(53). As (52) shows, when a verb is PV-marked, the Theme DP of the sentence must be Pivot-marked.

(51) In every clause, there must be one and only one phrase that bears Pivot-marking.
The selection of the Pivot-marked phrase is indicated by voice-marking on the verb.

(52) ku = abalru-ay na/*kana suwaksuk$_{PIVOT}$.
1SG.GEN = forget-LV[PV] DEF.PIVOT/*DEF.ACC key
'I forgot the key.'

When a non-AV marked verb selects two objects, only one of the two is eligible for Pivot-marking. This is seen in (53): when a ditransitive verb is in PV, only the Recipient can be Pivot-marked (53a); when the verb is in CV, only the Theme can be Pivot-marked (53b). A "double-Pivot-marking" pattern results in ungrammaticality.

(53) a. ku = beray-ay na walak$_{PIVOT}$ kana/*na paysu.
1SG.GEN = give-LV[PV] DEF.PIVOT child DEF.ACC/*DEF.PIVOT money
'I gave the child the money.'

b. ku = beray-anay kana/*na walak na paysu$_{PIVOT}$.
1SG.GEN = give-CV DEF.ACC/DEF.PIVOT child DEF.PIVOT money
'I gave the child the money.'

As introduced in Section 2, other than argument-marking the Pivot status of a constituent is manifested also by its accessibility to A'-extraction. As shown in (54), only when the internal argument of a verb is in Pivot status can it undergo A'-extraction. Therefore, only when the verb 'forget' is in PV can the object 'key' be pseudo-clefted:

(54) a. amanay (na) [nu = k < in > a-abalru-an]?[13]
what (LK) [2SG.GEN = < PRF > STAT.forget-LV[PV].NMZ]
'What is the thing that you forgot?'

[13] In Puyuma, clauses that involve an instance of A'-extraction obligatorily employ a different set of verbal morphology conventionally regarded as "voice-marking used in nominalized environment" (see, e.g., Teng 2007; Ross 2009). Therefore, the LV[PV] affix in (56a) (as well as (60a)) appears in *-an* form, rather than *-ay* form as seen in other examples.

b. *amanay (na) [abalru=yu]?
what (LK) [forget.AV=2SG.PIVOT]
('What is the thing that you forgot?')

When a knowledge/perception verb selects a CP complement, as in (55), the Pivot status of the CP is not morphologically realized, but is nevertheless manifested in the CP's accessibility to A'-extraction. The special constraint has been observed in various Philippine-type Austronesian languages, and has led to the claim that CPs are Case-licensed in these languages, just as DPs are (e.g., Chung 1994; Pearson 2005; Rackowski & Richards 2005; Chen & Fukuda 2016). See the data below from Puyuma (56) and Tagalog (57):

(55) ku=abalru-ay [dra da-deru dra bu'ir i
1SG.GEN=forget-LV[PV] [C <AV>RED-cook INDF.ACC taro SG.PIVOT
Atrung]$_{PIVOT}$.
Atrung]
'I forgot that Atrung is cooking taro.'

(56) *Puyuma*
a. imanay (na) [nu=k<in>a-abalru-an (na)
who (LK) [2SG.GEN=<PRF>STAT-forget-LV[PV].NMZ (LK)
[da-deru dra bu'ir]$_{PIVOT}$]?
[<AV>RED-cook INDF.ACC taro]$_{PIVOT}$]
'Who was the one that you forgot is cooking taro?'
b. *imanay (na) [abalru=yu (na) [da-deru
who (LK) [AV.(NMZ).forget=2SG.PIVOT (LK) [<AV>RED-cook
dra bu'ir]$_{OBL}$]?
INDF.ACC taro]$_{OBL}$]
('Who was the one that you forget is cooking taro?')

(57) *Tagalog*
a. sino ang [naka-limut-an=mo na [nag-lu-luto
who LK [PRF.STAT-forget-LV[PV]=2SG.GEN LK [AV.PRF-RED-cook
ng adobo]$_{PIVOT}$]?
INDF.ACC adobo]$_{PIVOT}$]
'Who was the one that you forgot is cooking adobo?'
b. *sino ang [nag-limut=ka na [nag-lu-luto ng
who LK [AV.PRF-forget=2SG.PIVOT LK [AV.PRF-RED-cook INDF.ACC
adobo]$_{OBL}$]?
adobo]$_{OBL}$]
('Who was the one that you forgot is cooking adobo?')

Given the extraction facts presented above, we can conclude that a CP complement bears Pivot status when it is selected by a PV-marked verb, as in (58):

(58) ku=abalru-ay [dra da-deru dra bu'ir i
1SG.GEN=forget-LV[PV] [C <AV>RED-cook INDF.ACC taro SG.PIVOT
Atrung]$_{PIVOT}$.
Atrung]
'I forgot that Atrung is cooking taro.'

Building on this generalization, consider again the RTO sentence in (59):

(59) ku = abalru-ay i Atrung [dra da-deru dra
1SG.GEN = forget-LV[PV] SG.PIVOT Atrung [C <AV> RED-cook INDF.ACC
bu'ir]$_{PIVOT}$.
taro]
'I forgot that Atrung is cooking taro.'

Given that Pivot-marking must be unique within a single clause (see the "Pivot as unique" constraint in (51)), the fact that the XP in the RTO sentence (59) bears obligatory Pivot-marking thus suggests that the XP and the CP must form a single constituent. If they do not, the Pivot status of both the CP and the XP would suggest an argument-marking pattern that is otherwise disallowed in Puyuma.

Further support for this proposal comes from the data below in (60), which shows that A'-extraction out of the embedded CP is possible in an RTO sentence.[14] The fact that an object can be extracted from the embedded CP in this sentence indicates that the embedded CP must be in Pivot status.

(60) amanay (na~n) [nu = k<in>a-aparu-an [i **Kalingku**$_i$ (na)
what (LK) [2SG.GEN = STAT<PRF>-forget-LV[PV] [LOC **Kalingku**$_i$ (LK)
[tu$_i$ = tr<in>ima-an]]$_{PIVOT}$?
[3.GEN$_i$ = PRF-buy-LV[PV]]]$_{PIVOT}$
'What was the thing you forgot that he/she bought in Kalingku?'

Given the observations above, I conclude that the XP's apparent matrix-object behavior in case-marking is best analyzed as reflecting the case assigned to the CP. This analysis is illustrated in (61):

(61) V_{Matrix} ….. [$_{CP}$ $XP_{(i)}$ C ….V … (pronoun$_i$)]]
[α case] carries [α case]

Below I provide an account for why the XP—as a left-dislocated phrase in the embedded [Spec CP]—manifests matrix-object-like case-marking. Following recent proposals by van Koppen et al. (2016) and Pearson (2018), I argue that a left-dislocated phrase can have its morphological case determined "from above" by a c-commanding head, as long as it is in a local structural relation to that head. Following Pesetsky (2013), I assume that morphological case is the reflex of categorial feature copying in the syntax, where feature copying occurs when a head merges with a dependent. For example, when a head F selects a complement, the lexical category feature of F is copied onto all the terms of that complement. If the complement contains a DP, the feature copied from F may be realized on that DP—which is expressed through insertion of a particular morphological case when the complement is spelled out.

Under this approach, in Puyuma RTO constructions, merger of the matrix V with the embedded CP causes V's categorial feature to be copied onto every term of the CP, including the XP, which is base-generated in [Spec CP].[15] Since the XP is a DP and is locally c-commanded by the matrix V, it will realize this categorial feature in the form of morphological case. Following the existing accusative approaches to Philippine-type Austronesian languages (e.g., Chung 1994; Pearson 2001; 2005; Rackowski 2002; Rackowski & Richards 2005; Chen 2016, 2017), I assume that Puyuma exhibits a nominative-accusative Case system,

[14] Both Puyuma speakers I consulted accepted this sentence as grammatical, while acknowledging that this construction is not commonly used.
[15] The current analysis is based on Pearson's (2018) proposal for topics in Malagasy perception verb complements.

Table 3: The argument-marking mechanism under the accusative approach to Puyuma.

	Actor voice	**Patient voice**
external argument	~~Nominative~~ **Pivot (topic)**	Nominative
internal argument	Accusative	~~Accusative~~ **Pivot (topic)**

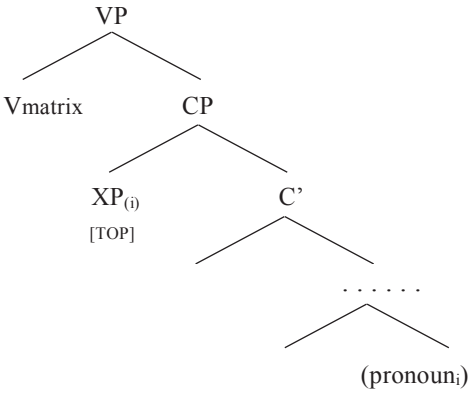
and that the marker "Pivot" is a topic marker that overrides morphological case, which falls on the external argument in AV clauses and the internal argument in PV clauses, as illustrated in Table 3. Under this analysis, the CP complement of a knowledge/perception verb always receives (abstract) accusative Case, which is spell-out as morphological case and copied onto the XP. When the CP complement is in Pivot status, however, the accusative case on the XP is overridden by "Pivot"-marking, resulting in ECM-like phenomenon in Puyuma RTO constructions.

In sum, given evidence from word order restrictions on the XP (see (48)) and the "Pivot as unique" constraint discussed above (see (51) and its associated discussion), we can conclude that the XP in Puyuma RTO is best analyzed as a dislocated phrase base-generated in the embedded left periphery.

4.2 Accounting for the binding facts in Puyuma RTO

Having addressed the structural relation between the XP and the CP, an important question needs to be answered: if the XP is indeed situated in the embedded left periphery (62), how can it manifest matrix object behaviors in binding, as discussed in 2.2? In this subsection, I show that these apparent matrix behaviors of the XP in fact follow from the present analysis.

(62) The proposed structure of Puyuma RTO



As the XP is base-generated at the embedded left edge, it is predicted to be unable to be bound by the embedded external argument, as is indeed observed in the previous data (23)–(24) in Section 2.2. On the other hand, given that anaphoric binding in Puyuma can cross a clausal boundary—as seen in (63a)–(b)—we expect that an XP can be bound by a coreferential matrix external argument, as it is the closest antecedent of the XP. This prediction is indeed borne out with the observations in the previous examples (23b) and (24b), repeated below in (64a)–(b):

(63) Binding relation in non-raising and RTO sentences

a. ma-tiya **i** **Labu**$_{i}$ [dra m-uka i Kalingku **tayta'aw**$_{i}$].
AV-dream **SG.PIVOT** **Labu**$_{i}$ [C AV-go LOC Kalingku **3SG.REFL**$_{i}$]
'Labu$_{<i>}$ dreamt that herself$_{<i>}$ went to Kalingku.' (long-distance reflexivization)

b. ma-ladram **na** **taynaynayan** **driya**$_i$ [dra a-uka
AV-know **DEF.PIVOT** **mothers** **every**$_i$ [C AV.IRR-go
tu$_i$ = **walak** i Arasip].
3.POSS.PIVOT$_i$ = child LOC Arasip]
'Every mother$_{<i>}$ knows that her$_{<i/j>}$ child will go to Arasip.' (✓bound variable reading)

(64) Binding relation in non-raising and RTO sentences
a. me-na'u i Akang$_i$ [kantu = ngiyaw$_i$ [dra tu$_j$ = pakan-ay
AV-see SG.PIVOT Akang$_i$ [3.POSS.ACC = cat$_i$ [C 3.GEN$_j$ = feed-LV[PV]
e.c.(PIVOT) kan Pilay$_j$]].
e.c.(PIVOT) SG.GEN Pilay$_j$]
'Akang$_{<i>}$ saw that Pilay$_{<j>}$ fed her$_{<i/?j>}$ cat.'
b. ma-tiya i Siber$_i$ [kantaaw$_i$ [dra tu$_j$ = saletra'-ay
AV-dream SG.PIVOT Siber$_i$ [3SG.ACC.REFL$_i$ [C 3.GEN$_j$ = slap-LV
e.c.(PIVOT) kan Isaw$_j$]].
e.c.(PIVOT) SG.GEN Isaw$_j$]]
'Siber$_{<i>}$ dreamt that Isaw$_{<j>}$ slapped him$_{<i/*j>}$.'

Given these observations, it can be concluded that there is no conflict between the current analysis of the XP and its apparent matrix object-like behaviors.

5 An embedded topic analysis of the XP

Having proposed in 4.1 that the XP in Puyuma RTO has the status of an embedded topic, I will demonstrate that the XP exhibits behaviors similar to those of hanging topics in Puyuma (65):

(65) The status of the XP in Puyuma RTO
The relation between an XP and the embedded CP is parallel to that between hanging topics and root clauses.

5.1 Hanging topics in Puyuma

In this subsection, I summarize basic traits of hanging topics in Puyuma. Puyuma has a sentence-initial position that can be filled by three types of phrases: (i) referential definite DPs, (ii) indefinite DPs that bear a generic reading, and (iii) adjuncts that embed a definite DP. Indefinite DPs cannot occupy this position (66b), unless they have a generic reading, as in (66c)–(d). Adjuncts that contain a definite DP and an adverbial clause may also surface at this position, as in (66e):

(66) Definiteness constraint on the phrase that occupies the sentence-initial position
a. adri sagar i Pilay dra/kana walak.
NEG like.AV SG.PIVOT Pilay INDF.ACC/DEF.ACC children
'Pilay dislikes {children/the children}.'
b. {na/*a walak$_i$} i adri sagar i Pilay
{DEF.PIVOT/*INDF.PIVOT children$_i$} PART NEG like.AV SG.PIVOT Pilay
e.c.(ACC)$_i$.
e.c.(ACC)$_i$
'The children/*children, Pilay dislikes.'
c. a babayan driya i sagar tr < em > ima e.c.(PIVOT)$_i$
INDF.PIVOT woman all PART like.AV < AV > buy e.c.(PIVOT)$_i$
dra kiping.
INDF.ACC clothes
'Women, (they) like to purchase clothes.'

d. a bunga i mare-imalan e.c.(PIVOT)$_i$ dra bu'ir.
INDF.PIVOT yam PART COM.AV-delicious e.c.(PIVOT)$_i$ INDF.ACC taro
'Yam, (it) is more delicious than taro.'

e. idri na danaw i adri=ku m-uka me-languy-a.
that DEF.PIVOT pond PART NEG=1SG.PIVOT AV-go AV-swim-PROJ
'That pond, I haven't gone and swum (there).'

In constructions like (66a)–(e), the left-dislocated phrase (henceforth YP) is followed by a particle i and a pause. Phrases eligible to occupy the sentence-initial position show characteristics typical of a base-generated phrase. First, similar to what is observed with the XP in RTO, failure to establish an aboutness relation between a YP and the root clause results in semantic infelicity. This is seen in (67)–(68): in order for the sentence (67) to be acceptable, the possessive phrase 'her house' embedded inside an adjunct must be interpreted as being possessed by the YP 'Senten'. Example (68) further shows that a YP must be pragmatically associated with the root clause. Thus, replacing the embedded Pivot *pulrikudrakudran* 'chrysanthemums' with *pangudral* 'pineapples'—which is not pragmatically linked to the hanging topic 'flowers'—results in semantic infelicity:

(67) i Senten$_i$ i me-na'u=ku kan Pilay kantu$_i$=ruma'.
SG.PIVOT Senten PART AV-see=1SG.PIVOT SG.ACC Pilay 3.POSS.OBL=house.(LOC)
'(As for) Senten$_{<i>}$, I saw Pilay$_{<j>}$ in her$_{<i/*j>}$ house.'

(68) a aputr i mara-padrangal na
INF.PIVOT flower PART AV.SUPER-expensive DEF.PIVOT
{pulrikudrakudran/*pangudral}.
{chrysanthemum/*pineapple}
'(As for) flowers, {chrysanthemums/*pineapples} are the most expensive.'

Further, several pieces of evidence suggest that the YP does not undergo A'-movement from the root clause.[16] First, similar to the XP in RTO, the YP is insensitive to a "Pivot-only" constraint, and can be identified with phrases of all types of case status and thematic roles. As seen in (69), a YP can be identified with a Genitive external argument (69a), an Accusative internal argument (69b), or a locative adjunct (69c):

(69) a. Topic phrase identified with Genitive external argument
i nanali$_i$ i tu$_i$=deru-ay na bunga.
SG.PIVOT 1SG.POSS.mother$_i$ PART 3SG.GEN$_i$=cook-LV DEF.PIVOT yam
'(As for) my mother, she cooked the yams.'

b. Topic phrase identified with an embedded Pivot
i Sawagu$_i$ i ma-ladram=ku [dra adri sagar
SG.PIVOT Sawagu$_i$ PART AV-know=1SG.PIVOT [C NEG AV.like
e.c.(PIVOT)$_i$ kanku].
e.c.(PIVOT)$_i$ 1SG.ACC]
'(As for) Sawagu, I know that he dislikes me.'

c. Topic construction with a definite Accusative phrase as topic
na dawa$_i$ i ku=pubini-ay na uma' e.c.(ACC)$_i$.
DEF.PIVOT millet$_i$ PART 1SG.GEN=sow-LV DEF.PIVOT field e.c.(ACC)$_i$
'(As for) the millet, I sowed (it) in the field.'

[16] According to previous descriptions (Huang 2000; Teng 2007) and my own fieldwork, Puyuma exhibits only one type of topic construction, which, according to the present analysis, employs base-generated external topics.

Second, the dependency between a YP and its correspondent in the root clause does not show island effects. As seen in (70), a YP can be identified with an external argument embedded inside a complex NP island, indicating that it does not A'-move from its theta-position.

(70) Island immunity
i Siber$_i$ i kilengaw=ku [kana sinbu [dra tu$_i$=trima-aw
SG.PIVOT Siber$_i$ PART hear.AV=1SG.PIVOT [DEF.ACC news [C 3.GEN$_i$=buy-PV
na ruma']].
DEF.PIVOT house]]
'As for Siber, I heard the news that he bought the house.'

Consistent with the observations above, the YP shows no reconstruction effects. As seen in the data below, a pronominal YP ('her child') cannot be interpreted as a variable bound by a quantifier external argument ('every mother'), as in (71b):

(71) a. sagar na taynaynayan driya kantu=walak.
like.AV DEF.PIVOT mothers every 3.POSS.ACC=child
'Every mother$_{<i>}$ loves her$_{<i/j>}$ child.' (bound variable reading is possible)

b. tu=walak i sagar na taynaynayan driya.
3.POSS.PIVOT=child PART like.AV DEF.PIVOT mothers every
'Her child$_{<i/*j>}$, every mother$_{<j>}$ loves.' (no bound variable reading)

Finally, the YP shows no case connectivity effects with the root clause. As seen in (72), a phrase that occupies the topic position must carry the morphological marking 'Pivot', regardless of its case status in the root clause:[17]

(72) i/*kan Senten$_i$ i tu$_i$=trakaw-aw na paysu.
SG.PIVOT/*SG.ACC Senten$_i$ PART 3.GEN$_i$=steal-PV DEF.PIVOT money
'(As for) Senten, she stole the money.'

Given the observations above, I argue that the YP exhibits the hallmarks of a hanging topic/aboutness topic, which is base-generated extra-sententially and pragmatically connected to a clause via the aboutness condition (e.g., Aissen 1992; Anagnostopoulou 1997; Zeller 2009; Miyagawa to appear). The observations that a YP must be either definite-marked or bear a generic reading follows directly from this analysis, as aboutness topics are commonly observed to be subject to a constraint that they must be definite or generic (see, e.g., Reinhart 1982; Lyons 1999; Krifka 2001; Cruschina 2016).

In what follows, I discuss how this hanging topic construction sheds light on the nature of Puyuma RTO.

5.2 Puyuma RTO as an embedded topic construction

As foreshadowed in the preceding subsection, the XP in Puyuma RTO shows behaviors parallel to hanging topics (the YPs). Both exhibit the hallmarks of a base-generated phrase, evidenced by their insensitivity to a "Pivot-only" constraint, as well as their immunity to islands, lack of reconstruction effects, and absence of case connectivity. Furthermore, both are subject to a definiteness constraint, except for cases where they bear a generic reading. These similarities are summarized in Table 4.

[17] Therefore, Pivot-marking in Puyuma is syncretic with the default argument-marking, since hanging topics are base-generated Caseless at the matrix left periphery.

Table 4: Shared traits between hanging topic left dislocation and XP in RTO.

	hanging topic	XP in RTO
definiteness constraint	✓	✓
case connectivity effect	×	×
Pivot-only condition	×	×
island sensitivity	×	×

Given Table 4, I argue that Puyuma RTO is best analyzed as an embedded topic construction that contains an aboutness topic base-generated at the embedded [Spec CP], whose structure has been discussed previously in Section 4.1. The current analysis is in concord with Massam's (1985) proposal that apparent cases of RTO constructions may contain an XP that functions as an embedded topic, which may or may not undergo further ECM-movement into a matrix A-position (Massam 1985: 115–23). The non-movement analysis of the XP further concurs with a recent proposal in Landau (2011), that the relation between a gapless propositional CP and a hanging topic can be established via the aboutness condition.

The aboutness topic analysis of the XP offers a compelling account for several important traits of Puyuma RTO: (i) the XPs are subject to a definiteness constraint (2.3) while are insensitive to the constraints on A'-extraction (3.1–3.2), and (ii) the construction need not contain a gap in the embedded clause (3.3). Finally, the observation that Puyuma RTO is fully productive with CP-taking verbs follows from this analysis, as verbs which select a CP complement presumably cannot restrict whether that CP includes a topic.

An anonymous reviewer noted that if the present analysis is on the right track, the embedded gap in Puyuma RTO (whenever present) should be fillable with an overt pronoun, as should the gap in a hanging topic construction. This prediction is indeed borne out. As shown in the preceding discussion, both an XP and a hanging topic (YP) can be coindexed with a possessive phrase (e.g., (66b), (70)). Furthermore, as introduced in Section 2.1, when the embedded clause of an RTO construction is non-AV-marked, a Genitive proclitic is obligatorily present on the embedded verb, which crossreferences the XP, as seen previously in (21a) and (22a). The same observation applies to hanging topic constructions, as seen above in (69a) and (70). According to primary fieldwork, only when the embedded clause in an RTO sentence is AV-marked is an overt pronoun dispreferred (73a). A parallel observation is found with hanging topic constructions (73b), where the spell-out of an overt pronoun in the theta-position of the topic phrase is disfavored:

(73) a. ma-ladram=ku kan Atrung$_i$ [dra sagar (??taytaw$_i$)
AV-know=1SG.PIVOT SG.ACC Atrung$_i$ [C like.AV (??3SG.PIVOT$_i$)
dra asap].
INDF.ACC giant.hyssop]
'I know that Atrung likes giant hyssop.'

b. i Atrung$_i$ sagar i (?? taytaw$_i$) dra asap.
SG.PIVOT Atrung$_i$ PART like.AV (?? 3SG.PIVOT$_i$) INDF.ACC giant.hyssop
'Atrung, (she) likes giant hyssop.'

A final question regarding the topic analysis of the XP concerns the observation that unlike the YPs in hanging topic constructions (74a), a presence of the particle i following the XP in Puyuma RTO is considered redundant and disfavored by speakers (74b):

(74) a. i Senten *(i) adri sagar kan
SG.PIVOT Senten *(PART) NEG like.AV SG.ACC
Pilay. [Hanging topic construction]
Pilay
'As for Senten, she dislikes Pilay.'

b. ma-ladram=ku [$_{CP}$ kan Senten (ʔi) *(dra) adri sagar
AV-know=1SG.PIVOT [$_{CP}$ SG.ACC Senten (ʔPART) C NEG like.AV
kan Pilay]. [RTO]
SG.ACC Pilay]
'I know that Senten dislikes Pilay.'

I remain agnostic about the nature of this asymmetry, and tentatively propose that the particle i is the spell-out of the functional head that introduces the aboutness topic at the C domain. In matrix environment, this functional head is always spelled out, as the matrix complementizer is not morphologically realized in Puyuma. In embedded environment, on the other hand, this functional head is preferred to be null, as spelling out both this head and the embedded complementizer dra—which is obligatorily spelled out in all sentences with a finite embedded clause—results in two adjacent functional words, which is disprefered in Puyuma grammar. This possible analysis requires further investigation.

6 Implications

In this section, I place Puyuma RTO in a typology of RTO constructions and explore its implications. In Section 6.1, I discuss how the current constructions enrich our understanding of the microvariation found in non-movement-type RTO constructions. In Section 6.2, I focus on the embedded topic analysis of the XP in Puyuma RTO, and point out that XPs in a number of RTO constructions exhibit variation in behavior parallel to topics in root clause environments.

6.1 The microvariation in non-movement type RTO constructions

I have demonstrated in the preceding sections that Puyuma RTO contains a base-generated topic whose relation with the finite embedded CP need not be established via an embedded gap. As briefly discussed in Section 3.3, the acceptability of a gapless embedded CP in Puyuma RTO suggests that this construction employs a mechanism different from similar constructions found in three other Austronesian languages, Madurese, Sundanese, and Tagalog (Davies 2005; Law 2011; Kurniawan 2012), despite their superficial resemblances in Table 5.

As seen above, RTO in all four languages employs a finite CP complement and an XP that shows the hallmarks of a base-generated phrase, manifested in its insensitivity to islands,

Table 5: Similarities and differences in RTO in Puyuma, Madurese, Sundanese, and Tagalog.

		Puyuma	Madurese	Sundanese	Tagalog
a	finite embedded CP	✓	✓	✓	✓
b	island sensitivity	×	×	×	?
c	reconstruction effect	×	×	×	×
d	case connectivity of the XP	×	?	?	×
e	obligatoriness of an embedded gap	×	×	✓	✓
f	Subject/Pivot-only constriant on the XP	×	×	×	✓
g	full productivity	✓	✓	✓	×

lack of reconstruction effects, and case connectivity. However, a closer look at these four constructions reveals interesting microvariation. First, in Puyuma, a pro in the embedded clause is not necessary, whereas in Madurese, Sundanese, and Tagalog a pro is required (Davies 2005; Gerassimova & Sells 2008; Law 2011; Kurniawan 2012). Second, Puyuma, Madurese, and Sundanese do not impose a "Subject/Pivot-only" constraint on the XP, while Tagalog does (Kroeger 1993; Gerassimova & Sells 2008). In addition, RTO in the first three languages shows full productivity with CP-taking verbs, whereas Tagalog RTO is restricted to a small number of knowledge/perception verbs (Law 2011; primary data). In what follows, I discuss the ways in which the differences in these constructions illuminate the strategies available for establishing a relation between a left-dislocated XP and a CP.

The RTO constructions in Madurese, Sundanese, and Tagalog have previously been analyzed as instances of prolepsis (Davies 2005; Law 2011; Kurniawan 2012), which is defined as follows:

(75) Prolepsis refers to a construction where an apparent nonthematic object in the matrix clause anticipates the referent of that object as a thematic argument of the embedded clause. (Davies 2005: 646).

Along the line of previous work, Salzmann (to appear) has explicitly argued that a coreferential element in the embedded clause is obligatory in a proleptic construction. This constraint is illustrated with the English examples (76a)–(b) (Salzmann to appear: 1):

(76) a. I believe of John$_i$ that he$_i$ likes Mary.
b. *I believe of this crisis that the president should resign.

Consistent with this definition, the RTO constructions in Madurese, Sundanese, and Tagalog have each been described as requiring an embedded resumptive element coindexed with the XP. In Madurese and Sundanese, the resumptive element can be manifested as an overt pronoun (77a)–(b) (Davies 2005; Kurniawan 2012), whereas in Tagalog, it is usually a null pro (Law 2011; primary data), as in (77c):

(77) a. *Madurese* (Davies 2005: 650)
Hasan$_i$ e-kera Siti bari' [ja' **aba'engi** melle motor].
Hasan$_i$ OV-think Siti yesterday [C **he** AV.buy car]
'Hasan was thought by Siti yesterday to have bought a car.'

b. *Sundanese* (Kurniawan 2012: 70)
Ahmad nyarita-keun **Hasan**$_i$ [yén paraji rék mariksa pamajikan
Ahmad AV.talk-APPL **Hasan**$_i$ [C midwife FUT AV.examine wife
manehna$_i$].
he$_i$]
'Ahmad talked about Hasan$_i$ that the midwife will examine his$_i$ wife.'

c. *Tagalog* (Law 2011: 147)
Inasah-an ni Linda **siya**$_i$ [ng mahalik-an ng pangulo (**pro**$_i$)].
expect-LV GEN Linda **3SG.PIVOT**$_i$ [LK kiss-LV GEN principal (**pro**$_i$)]
'Linda expected her to be kissed by the principal.'

The differences between these three constructions and Puyuma RTO suggests that the relationship between a base-generated left-dislocated phrase and a CP can be established through at least two strategies: coindexation, as employed by Madurese, Sundanese, and Tagalog (78a), and an aboutness condition, as employed by Puyuma (78b):

(78) a. V_{Matrix} … [DP_i [$_{CP}$ C …. V … $pronoun_i$]] via coindexation with an embedded pronoun

b. V_{Matrix} …. $DP_{(i)}$ [$_{CP}$ C …. V … ($pronoun_i$)] via the aboutness condition

Finally, the case of Tagalog RTO further suggests that languages may employ an independent constraint to restrict the coindexation relation between a left-dislocated phrase and a CP. As seen below, an XP in Tagalog RTO must be identified with an embedded Pivot phrase, while this is not the case in Madurese and Sundanese RTO:

(79) *Tagalog* (Kroeger 1993: 28)

a. inasahan=ko **ang pambansang awit**$_i$ [na awit-in ni Linda
LV-think=1SG.GEN **PIVOT national anthem**$_i$ [LK sang-PV GEN Linda
e.c.(PIVOT)$_i$].
e.c.(PIVOT)$_i$]
'I expected the national anthem to be sung by Linda.'

b. *inasahan=ko **si Linda**$_i$ [na awit-in e.c.(GEN)$_i$ ang
LV-think=1SG.GEN **PIVOT Linda**$_i$ [LK sang-PV e.c.(GEN)$_i$ PIVOT
pambansang awit].
national anthem]
(intended: 'I expected Linda to sing the national anthem.')

In the following subsection, I turn to the topic analysis of the XP in Puyuma RTO and discuss its implications.

6.2 RTO as an embedded topic construction: a crosslinguistic look

It has been shown in Section 5 that the XP in Puyuma RTO has the status of an embedded topic, which shares a number of similarities with hanging topics in root clauses. The parallel behaviors between XPs and hanging topics in Puyuma thus suggest that languages may utilize parallel strategies in forming matrix and embedded topicalization. One question that arises from this observation is whether an embedded topic analysis may apply to other apparent cases of RTO.

It is widely observed that topics behave differently across and within languages. A topic may be base-generated in its theta-position and undergo A'-movement to the left periphery, commonly referred to as an internal topic; it may also be base-generated outside of a clause, as an external or hanging topic (e.g., Rizzi 1986; 1997; Cinque 1990; Aissen 1992; Anagnostopoulou 1997; Zeller 2009). If the XP in some RTO constructions has the status of an embedded topic, we expect to observe similar variation in behavior with the XPs.

This prediction is indeed borne out, along with Massam's (1985) proposal that some ECM elements may have the status of an embedded topic. Besides Puyuma, Tsez and Romanian have also been analyzed as having an RTO construction which contains an XP as an embedded topic (Polinsky & Potsdam 2001; Alboiu & Hill 2013). Crucially, each of these three constructions exemplifies a different type of embedded topic construction: Puyuma RTO involves an XP base-generated as a hanging topic (80a), whereas the XPs in Tsez RTO have been shown to undergo covert A'-movement from the embedded theta-position to the embedded left edge (80b) (Polinsky & Potsdam 2001). Finally, in the Romanian RTO, it has been claimed that the XPs undergo cyclic movement from the embedded theta-position to a matrix A-position, as in (80c) (Alboiu & Hill 2013):

(80) Microvariation in RTO constructions that have been analyzed as an embedded topic construction

a.	V_{Matrix} ……	$[_{CP}\ XP_{i[TOP]}$ C V …… (pronoun$_i$)]	Puyuma RTO
b.	V_{Matrix} ……	$[_{CP}\ XP_{i[TOP]}$ C V …… $<t_i>$]	Tsez RTO
c.	V_{Matrix} …… $XP_{i\ [TOP]}$	$[_{CP}\ <t_i>$ C V …… $<t_i>$]	Romanian RTO

The differences in behavior of the XP in these three languages (80a)–(c) has an important implication, namely that the variation observed in topics across languages is also attested with XPs in apparent cases of RTO constructions. This strongly suggests that at least a subclass of RTO constructions may be properly analyzed as instances of embedded topicalization, calling for further investigation of existing cases of RTO and their correlation with topicalization in the same language.

7 Conclusion

This paper has investigated an understudied type of raising-to-object (RTO) construction found in Puyuma (Philippine-type, Austronesian), which shows an apparent phenomenon of raising, yet employs a base-generated left-dislocated phrase that shows behaviors parallel to hanging topics in Puyuma. I demonstrated that the XP is best analyzed as an embedded aboutness topic, which forms a single constituent with the CP and is semantically connected to the embedded clause via the aboutness condition. I have further shown that the apparent matrix object behaviors of the XP come from its manifesting object case-marking assigned to the embedded CP, as well as the fact that anaphoric binding may cross clause boundaries in Puyuma. This analysis enriches the current understanding of the microvariation in non-movement-type RTO constructions, and sheds light on the nature of RTO by contributing to the understanding that XPs in RTO may exhibit variation in behavior parallel to topics in a root-clause environment, calling for future investigation of a correlation between XPs and topics.

Abbreviations

ACC = accusative, AV = actor voice, AUG = augment, AUX = auxiliary, C = complementizer, CL = object pronominal clitic, COM = comparative degree, CONJ = conjunct, CONJ.INF = conjunct inflection, COP = copula, CV = circumstantial voice, DEF = definite, DEM = demonstrative, DIR = direct, e.c. = empty category, DOM = differential object marker, EMPH = emphatic particle, F = feminine, FV = final vowel, INDF = indefinite, IRR = irrealis, GEN = genitive, LK = linker, LOC = locative, LV = locative voice, OBL = oblique, OBV = obviative third person, PART = particle, PRF = perfective, PROJ = projective, PV = patient voice, QUOT = quotative particle, REFL = reflexive, SM = subject marker, STAT = stative, SUBJ = subjunctive, SUPER = superlative degree, TA = transitive verb with animate object

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Competing Interests

The author has no competing interests to declare.

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