

Chapter 3

Externalization as A'-movement

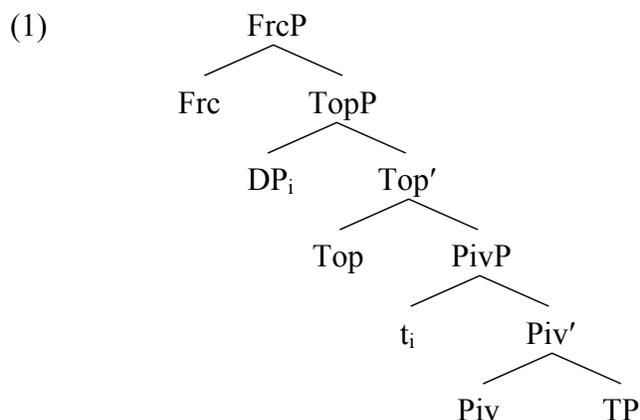
3.0. Introduction

In chapter 2, I discussed the bipartite structure of the Malagasy clause and outlined an analysis of the voicing system. According to this analysis, the *external argument* (EA) is licensed in the specifier of CP, while voice morphemes such as *m-* and *-in* are the realizations of functional heads, which indicate the location of the A'-trace of the external argument. In this chapter I focus in more detail on the claim that the external argument moves to SpecCP, presenting evidence to show that externalization is a feature-driven A'-movement operation analogous to *wh*-movement, rather than an A-movement operation analogous to raising-to-subject in passives.¹

In the process of developing a detailed analysis of externalization, I argue that the C-domain of the clause consists not of a single CP projection, but of several projections, each with its own features. In particular I will identify three projections in the C-domain, FrcP (*force phrase*), TopP (*topic phrase*), and PivP (*pivot phrase*). Of these, TopP is the one in which the external argument is licensed. The structure which I propose is illustrated by the tree in (1) (I postpone until chapter 4 consideration of how the EA in SpecTopP winds up at the right-periphery of the clause, following the predicate phrase).²

¹ Within the Minimalist framework, in which movement is characterized in terms of feature attraction (governed by general principles of economy), the A/A'-movement distinction of Chomsky (1981) is treated as epiphenomenal, inasmuch as there are no principles which refer to this distinction. While I acknowledge this development in the theory, I will continue to use *A-movement* and *A'-movement* as descriptive labels: The former refers to movement to the specifier of an L-related projection, triggered by case/EPP-features, while the latter refers to movement to the specifier of a non-L-related projection, triggered by operator features such as [wh].

² See Rizzi (1997), Zwart (1993), and Koopman (1996) for similar 'split CP' structures. Of these, the structure proposed by Rizzi (based largely on data from Romance and Germanic languages) most closely resembles the structure in (1). However, Rizzi argues that TopP should be divided into a higher and lower topic projection, both capable of recursion, which flank a Foc(us)P projection. Because multiple EAs are ruled out in Malagasy, and because constituent focus involves a cleft construction (section 3.4.2), I find no evidence for TopP-recursion or FocP in Malagasy, and will not include them in my phrase structure. (But cf. Paul (1999), whose depiction of the left periphery in Malagasy corresponds more closely to Rizzi's structure.)



As (1) shows, TopP is located below FrcP, the projection in which I locate complementizers such as *fa* “that” and *raha* “whether/if/when”. In order to reach the specifier of TopP, external arguments first raise into the specifier of a lower A'-projection, PivP. The trace in SpecPivP forms a chain with a trace inside TP (the predicate phrase) whose location is indicated by the voice morphology on the verb, as discussed in the previous chapter. SpecPivP is thus the position associated with the element referred to in the traditional Austronesian literature as the *pivot* of the clause, which is usually (but not always) the external argument. My reasons for distinguishing two positions, SpecTopP and SpecPivP, will be discussed in 3.1 and 3.3. Briefly, I will argue that in certain cases the EA pied-pipes a larger constituent XP into SpecPivP, and then extracts from XP and raises on to SpecTopP.

The analysis in (1) goes against the traditional account of Malagasy clause structure, which treats the EA as the *subject* of the clause. For example, Guilfoyle, Hung, & Travis (1992) argue that the EA is generated inside the VP and raises to the specifier of IP, where it is assigned structural nominative case. Hence, they view externalization as a case-driven A-movement operation, essentially identical to raising-to-subject in English. This analysis has been assumed in much subsequent research on Malagasy, including Travis (1994, 1997), MacLaughlin (1995), and Paul (1999).

However, as I will show in this chapter, there are strong conceptual and empirical reasons for regarding the external argument position as an A'-position rather than a subject position. In particular, I will argue that by adopting an A'-analysis of externalization, we can explain a number of disparate facts about Malagasy pertaining to binding, reconstruction, and extraction, without the need for special stipulations. I will also show that the A'-movement analysis of externalization provides the proper context for a straightforward account for the voicing restrictions discussed in 2.2.4.

This chapter is organized as follows: In 3.1, I outline my analysis of externalization as A'-movement of a DP into the C-domain of the clause, presenting motivation for each of the projections in (1) above. I contrast this analysis with that of Guilfoyle, Hung, & Travis (1992), who treat externalization as movement to SpecIP, and discuss some of the empirical differences between the two approaches. In the course of presenting my analysis, I argue for a close connection between the EA position in Malagasy and the preverbal topic position in verb-second languages like Icelandic and German, a connection which will become important in my discussion of word order in chapter 4.

Having outlined my analysis in 3.1, I present empirical support in 3.2 and 3.3 for treating externalization as an A'-movement operation rather than an A-movement operation. In 3.2 I discuss the rather complicated interaction between externalization and binding. I show that for purposes of binding, the external argument is interpreted in its predicate-internal position rather than its surface position. In this respect, EAS pattern with wh-phrases and other A'-elements in languages like English, which exhibit reconstruction effects. Subjects in English, by contrast, do not reconstruct from SpecTP into their θ -positions (at least not obligatorily). Thus, if we were to treat the external argument in Malagasy as a subject, we would have to supplement our theory of binding with a parameter specifying that subjects obligatorily reconstruct in Malagasy but not in English.³

In 3.3 I discuss the voicing restrictions which accompany externalization out of an embedded clause. I show that when a DP raises out of an embedded clause into the matrix EA position (*long-distance externalization*), the voice of the matrix verb reflects the abstract case of the embedded clause: For example, if the embedded clause is a θ -marked complement to which accusative case is assigned, then subextraction from that clause will trigger AccP morphology on the matrix verb. I will refer to this descriptively as the *pivot restriction on extraction*, or PRE. Suppose we adopt an A-movement account of externalization, according to which the function of the voice morphology is to promote a constituent to the subject position: Under such a theory, the only way to explain the PRE would be to stipulate that subextraction from a clause is possible only if that clause is a subject. This stipulation is problematic, given that subject clauses in more familiar languages invariably behave as strong islands for extraction (cf. Ross 1967, Chomsky 1977, 1986, Huang 1982, and many others). On the other hand, if we treat externalization as A'-movement to a topic position, then the PRE can be satisfactorily explained in terms of clausal pied-piping of the type found in long-distance wh-movement constructions in Basque and other languages.

In 3.4 I show how the A'-movement analysis of externalization allows for a natural account of the voicing restrictions discussed in 2.2.4. Recall that in a number of contexts involving wh-extraction, the extracted element strictly determines the voice of the verb. For example, when a direct object is questioned, the appropriate object-pivot form is required; using the NomP form is prohibited (compare the sentence pairs in (2) and (3)). Descriptively, the clause-initial wh-position and the clause-final EA position may not be filled simultaneously in the same clause:

- (2) a. Namaky ny boky ny...mpianatra
 Pst-NomP.read Det book Det student
 "The student read the book"
- b. Novakin'ny mpianatra ny...boky
 Pst-AccP.read-Det student Det book
 "The student read the book"

³ There are some complications with the A'-movement analysis of externalization involving the absence of weak crossover effects. I address this issue in 3.2.3, and suggest some possible solutions.

- (3) a. * *Inona* no namaky ny...mpianatra?
 what Foc Pst-NomP.read Det student
 “What did the student read?”
- b. *Inona* no novakin’ny mpianatra?
 what Foc Pst-AccP.read-Det student
 “What did the student read?”

According to the traditional account, which treats the EA position as a subject position, the only way to explain the contrast in (3) is to assume that in languages of the Malagasy type, subjects may undergo A'-extraction while non-subjects may not. This is unexpected, given that more familiar cases of subject/non-subject extraction asymmetries work the other way, with non-subjects being more accessible for extraction than subjects.

On the other hand, if we adopt the analysis argued for in this chapter, we can account for the contrast in (3) without having to resort to conceptually unappealing stipulations. If externalization is a type of A'-movement similar to topicalization, then the ungrammaticality of (3a) can be explained by assuming that externalization and wh-movement compete for the same position in the C-domain (specifically, SpecPivP). Wh-movement is known to block topicalization in other languages as well, including English (see 3.4.1 for examples and discussion).

Finally, in 3.5, I review two pieces of evidence which have been cited for analyzing the EA as a subject, and which are potentially problematic for the A'-movement analysis argued for here: (a) Morphological alternations in the pronouns suggest that the EA position is the locus of nominative case assignment. (b) The pattern of voice marking found in the so-called *raising-to-object* construction suggests that externalization has the ability to feed subsequent case-driven movement (resulting in an improper movement configuration if externalization is taken to involve A'-movement). I consider these phenomena in turn, and suggest how they can be reconciled with the analysis argued for here. With regard to pronoun morphology, I show that the so-called nominative case forms of the pronouns are actually default forms, which behave much like ‘strong’ (non-clitic) pronouns in French and other languages. As for raising-to-object, I propose an alternative analysis of this construction, according to which the ‘raised’ object is actually base-generated in the matrix clause and linked to a null operator in the embedded clause, much as in the English *tough*-movement construction.

3.1. Externalization and the structure of the left-periphery

In this section I argue that externalization in Malagasy involves movement to the specifier of TopP, an A'-projection located above TP and below the position of the complementizer in embedded clauses.⁴ An outline of the analysis is presented in 3.1.3 below, and elaborated in subsequent sections. I preface this in 3.1.1 with a brief discussion of previous analyses of externaliza-

⁴ There are a number of other proposals in the literature for an extra A'-specifier below the complementizer position but above the subject position, associated with topicalization or presupposition. These include the TopP projection of Müller & Sternefeld (1993), Zwart (1993), and Rizzi (1997) (cf. also Branigan 1998, Harley 1996), and the RefP projection of Beghelli & Stowell (1994, 1997), Kiss (1996), and Szabolcsi (1997). In the end I will argue that my TopP is essentially the same as the projection posited by Müller & Sternefeld, et al. I leave open the question of whether my proposal is compatible with the RefP theory of Beghelli & Stowell, et al.

tion, focusing on the long-debated question of whether the external argument should be characterized as a *subject*, a *topic*, or both/neither. I suggest that the appropriate structural analogue for the EA position is the preverbal topic position in Germanic verb-second languages like Icelandic. Evidence in support of this analogy is provided in 3.1.2.

3.1.1. The external argument: Subject or topic?

Descriptive grammarians such as Rahajarizafy (1960), Rajemisa-Raolison (1971), and Dez (1980) identify the external argument as the *subject* of the clause, and this assumption has been carried over into much of the theoretical work on Malagasy (e.g., Keenan 1976, 1994; Manaster-Ramer 1992). Guilfoyle, Hung, & Travis (1992) (GHT), working within the Government-Binding framework, translate this into phrase structure terms, arguing that the external argument raises to the specifier of IP, where it receives nominative case from I^0 , just like subjects in English and other languages. GHT's analysis has been adopted, with various modifications, by other researchers, among them Paul (1999), MacLaughlin (1995), and Ndayiragije (2000).

In general, the identification of the EA/pivot as a subject has prevailed among scholars of Philippine-type languages, going back at least to Bloomfield's (1917) discussion of *ang*-phrases in Tagalog. More recently, Kroeger (1993) offers a detailed defense of the EA-as-subject approach for Tagalog (and also provides a concise literature review on this issue, to which I refer the interested reader). An alternative view, championed by Schachter (1976, 1996) and others, is that the notion *subject* is irrelevant to the description of Philippine-type languages, insofar as the classic functional characteristics of subjects (nominative case, ability to bind reflexives, deletion in imperatives and control complements, etc.) fail to associate to a single phrase structure position in these languages, but are instead split between the EA position and the agent phrase position (I return to this observation below).

A number of facts have been cited for treating the external argument in Malagasy as a subject. For example, as discussed in 2.3.1, externalized and non-externalized pronouns exhibit morphological alternations suggestive of case-marking. Consider the examples below, in which the patient θ -role of the verb is assigned to the first person exclusive pronoun: When the pronoun is predicate-internal, it takes the form *anay* (4a). However, when it is promoted to the external argument position in a DatP construction, the form *izahay* is used instead (4b):

- (4) a. Namangy *anay* tany am-pianarana ny dokotera
 Pst-NomP.visit lex Pst-there Obl-school Det doctor
 "The doctor visited us at school"
- b. Novangian'ny dokotera tany am-pianarana *izahay*
 Pst-DatP.visit-Det doctor Pst-there Obl-school lex
 "We were visited at school by the doctor"

Keenan (1976), Voskuil (1993), et al., identify *anay* as the accusative case form of the pronoun, and *izahay* as the nominative case form, and thus conclude that externalization targets a structural case position: In (4a) the pronoun receives accusative case inside the predicate phrase from the NomP ('active') verb, while in (4b), accusative case is unavailable from the DatP ('passive') verb, and so the pronoun raises to SpecIP to get nominative case from inflection. (But see 3.5.1 for arguments against this view.)

Distributional evidence is also sometimes cited for treating the external argument as a subject. As many researchers have observed, the restrictions on externalization are similar to those which constrain movement to the subject position in other languages: Recall from 2.1 that (except in existentials, ellipsis contexts, and certain imperatives) the EA position in Malagasy must be filled with overt lexical material. A similar restriction holds for the subject position in languages like English and French, where it is attributed to an EPP feature of INFL. Moreover, just as clauses in languages like English and French may contain at most one nominative-marked subject, Malagasy clauses may contain at most one EA. This would make sense if externalization were movement to a subject position, given that EPP-driven operations are generally non-reiterable. Finally, note that only constituents of category DP (and possibly CP) may function as EAs, while those of category PP, NP, AP, etc., may not. Since only DPs (and possibly CPs) have case features to check, this restriction would make sense if the EA were licensed in the nominative case position.

Although the above facts suggest that the external argument is the subject of the clause, there is also compelling evidence for treating the postverbal *agent phrase* as the subject. For example, as I discussed in 2.3.2, in clause-types where the agent phrase is distinct from the EA (viz., non-NomP clauses), it is the agent phrase which undergoes deletion in imperatives, while the EA position remains filled. Compare the sentences in (5a) and (5b) with their imperative counterparts in (5a') and (5b'), respectively:

- (5) a. Vonoin'i Soa ny...akoho
 DatP.kill-Det Soa Det chicken
 "Soa kills the chickens"
- a'. Vonoy ny...akoho
 DatP.kill-Imp Det chicken
 "Kill the chickens!"
- b. Amonoan'i Soa akoho ny...antsy
 CrcP.kill-Det Soa chicken Det knife
 "Soa uses the knife to kill chickens"
- b'. Amonoy akoho ny...antsy
 CrcP.kill-Imp chicken Det knife
 "Use the knife to kill (some) chickens!"

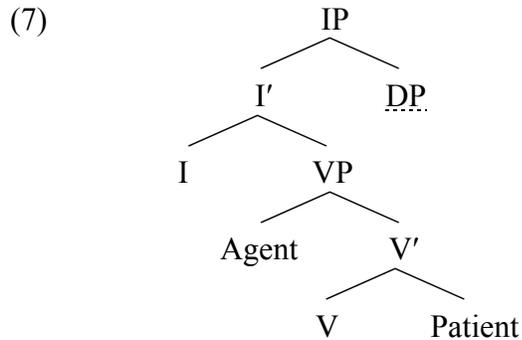
Moreover, the agent phrase position behaves as a subject position for purposes of control. Consider the sentence in (6a), for example. Here, the implied agent of the embedded verb *hosasana* "wash" is understood to corefer with the agent of the matrix verb *kasaina* "intend". Adopting the standard analysis of control clauses, we may thus assume that the agent phrase position of the embedded clause is occupied by a PRO argument coindexed with the agent of the matrix verb, as in (6b):

- (6) a. Kasain-dRasoana hosasana ny...zaza
 AccP.intend-Rasoana Irr-DatP.wash Det child
 "The child, Rasoana intends to wash (him)"

- b. [PredP Kasain-dRaso_{a_i} [CP hosasana PRO_i t_j]] ny zaza_j

It is generally agreed that PRO is confined to subject positions (Chomsky 1981, et al.). Thus, the fact that PRO may occupy the postverbal agent phrase position in Malagasy shows that the agent phrase rather than the EA is the ‘true’ subject of the clause.

In order to explain the fact that external arguments and agent phrases both possess subject-like properties, Guilfoyle, Hung, & Travis (1992) locate the external argument in the specifier of IP, and the agent phrase in the VP-internal subject position (Kitagawa 1986, Fukui & Speas 1986, Kuroda 1988, Koopman & Sportiche 1991), as shown in (7):



In a sense, then, both the EA and the agent phrase count as structural subjects: The EA occupies the highest A-position in the clause (the position in which nominative case is checked), while the agent phrase occupies the highest thematic position in the clause (the position to which the verb discharges its outermost θ -role). GHT suggest that the properties conventionally associated with subject positions cross-linguistically (e.g., nominative case, the ability to bind an anaphoric direct object, etc.) are divided between these two positions: The case and EPP features of subjects are manifested on the EA in SpecIP; while the agent phrase in SpecVP is treated as the subject for purposes of binding and control relations—which, according to GHT, are calculated on the basis of relative hierarchical positions within VP (see 3.2.2).

For GHT, then, the difference in the distribution of subject properties between Malagasy and languages like English reduces to a difference in case-licensing. In English, (overt) agent phrases generated in SpecVP must always raise to SpecIP to get case from inflection, and hence the EPP/case and binding/control properties of subjects will end up associated to the same DP chain. In Malagasy, however, the option exists of case-licensing the agent VP-internally: In NomP clauses, no case is assigned to SpecVP, and so the agent raises to SpecIP to get case, as in English; however, in non-NomP clauses, case is assigned to SpecVP by the voice morphology (see 2.4). This allows a lower constituent to raise over the agent into SpecIP, resulting in a situation where the EPP/case and binding/control properties of subjects are manifested on separate DP chains (the EA and the agent phrase, respectively).

However, as I will argue throughout this chapter, analyzing the EA position as SpecIP raises a number of conceptual problems for standard theories of reconstruction and extraction domains. I will thus adopt an alternative approach, which treats the EA not as a *subject*, but as a *topic*. Specifically, I suggest that the EA occupies the same position as the preverbal topic constituent in verb-second languages, as discussed in the next section.

3.1.2. External arguments and V2 topics compared

That external arguments in Malagasy share properties with topics in other languages has been recognized for some time. Although Keenan (1976) and Manaster-Ramer (1992) analyze the EA as a subject, they observe that it is more consistently associated with ‘referential prominence’ (Manaster-Ramer’s term) than subjects in other languages: Unlike the subject in English, for example, the external argument in Malagasy obligatorily carries an existential presupposition, and is systematically identified by native speakers as denoting the participant that the sentence is predicated of (i.e., the EA functions as *topic* in the *topic-comment* structure of the clause).

Of course, the term *topic* is used to refer to a number of structurally distinct phenomena in different languages. Some topicalizing operations (e.g., topic-fronting and left-dislocation in English, clitic left-dislocation in Romance) have been argued to involve optional adjunction, while others seem to involve feature-driven movement to a fixed specifier position (e.g., topicalization in Hungarian, cf. Szabolcsi 1997). Some languages even appear to have two or more distinct topic positions, each with its own properties, as Aissen (1992a) has argued for Mayan languages. Thus, identifying the EA as a topic merely begs the question: What kind of topic is it?

As I will argue in this section, there is a significant amount of distributional evidence for equating the external argument constituent in Malagasy with the preverbal (non-focused, non-wh) constituent in Germanic *verb-second* (V2) constructions, suggesting a close connection between the bipartite predicate-argument structure of Malagasy clauses and the structure of V2 clauses. I will argue here that the clause-final underlined constituent in (8) below occupies the same position as the clause-initial underlined constituent in the Icelandic sentences in (9) (Sigurðsson 1990).⁵ Furthermore, the non-externalized subject (agent phrase) in Malagasy, italicized in (8b), occupies the same immediately postverbal position as the non-fronted subject in Icelandic (9b).

- (8) a. [PredP Mbola tsy namaky ny boky] ny...lehilahy
 still Neg Pst-NomP.read Det book Det man
 “The man has still not read the book”
- b. [PredP Mbola tsy novakin’ny lehilahy] ny...boky
 still Neg Pst-AccP.read-Det man Det book
 “The book, the man has still not read (it)”
- (9) a. Maðurinn [PredP hafði ekki enn lesið bókina]
 man-the.Nom had not still read book-the.Acc
 “The man had still not read the book”
- b. Bókina [PredP hafði maðurinn ekki enn lesið]
 book-the.Acc had man-the.Nom not still read
 “The book, the man had still not read (it)”

⁵ The Icelandic examples in this section are taken from Sigurðsson (1990), Rögnvaldsson & Thráinsson (1990), and Richards (2000) (who cites Rögnvaldsson & Thráinsson, p.c.), while the Dutch examples are from Zwart (1993).

Clearly, there are non-trivial differences between Malagasy and Icelandic with respect to morphology and word order: In Malagasy, the abstract case of the external argument is identified by the voice form of the verb, while in Icelandic it is indicated by morphological case marking on the external argument itself. Also, in Icelandic the PredP constituent follows its argument, while in Malagasy it precedes its argument—a difference to which I return in chapter 4. Nevertheless, on the basis of the similarities discussed below, it seems reasonable to draw a close structural parallel between Malagasy externalization and topic-fronting in Germanic.⁶

Preverbal topics in V2 languages share a number of distributional characteristics with external arguments in Malagasy: As discussed in 2.1, every matrix clause in Malagasy must have an overt EA (abstracting away from ellipsis contexts, NomP imperatives, and existential constructions). This is analogous to the constraint requiring every V2 clause to have an overt fronted constituent (abstracting away from ellipsis, imperatives, and yes/no questions). In both cases, the grammatical role of the promoted constituent is not fixed, but may vary from clause to clause. Furthermore, Malagasy EAs must be [+specific] (10). This is reminiscent of the well-known definiteness restriction on preverbal topics in Germanic, illustrated in (11) for Icelandic:

- (10) a. Nohanin'ny gidro ilay voankazo
 Pst-AccP.eat-Det lemur that fruit
 “The lemur ate that fruit”
- b. * Nohanin'ny gidro voankazo
 Pst-AccP.eat-Det lemur fruit
 “The lemur ate (some) fruit”
- (11) a. Bókina keypti Jón
 book-the bought John(Nom)
 “John bought the book”
- b. ?? Bók keypti Jón
 book bought John(Nom)
 “John bought a book”

Recall also that a Malagasy clause may not have multiple EAs. By the same token, having more than one preverbal constituent is (by definition) strictly disallowed in verb-second clauses.

Topic-fronting in Germanic shares many of the A'-movement properties of Malagasy externalization discussed in 3.2–3.3 below. For example, both topic-fronting and externalization may create long distance dependencies across a finite clause boundary. Compare (12), in which the matrix EA *i Koto* is interpreted as the direct object of the embedded clause, with the Dutch and Icelandic examples in (13a-b):

⁶ This similarity to preverbal topics in Germanic has been noted for external arguments in other Austronesian languages. Richards (2000) argues that the *ang*-marked constituent in Tagalog raises covertly to the same position as Germanic topics, which he identifies as an A'-position immediately above TP (roughly equivalent to my PivP/TopP). Most of Richards's observations about Tagalog carry over to Malagasy, the major difference being that externalization happens overtly in Malagasy rather than covertly (cf. chapter 2, footnote 9).

- (12) Heveriko novangian'ny vehivavy i Koto
 AccP.think-1s Pst-DatP.visit-Det woman Det Koto
 "Koto, I think (that) the woman visited"
- (13) a. Marie denk ik dat Jan gekust heeft
 Marie think I that Jan kissed has
 "Marie, I think that Jan kissed"
- b. Þessi maður held ég að hafi tekið út peninga úr bankanum
 this man think I that has taken out money from bank-the
 "This man, I think that (he) has taken some money from the bank"

In addition, both externalization and topic-fronting exhibit reconstruction effects: As I discuss in 3.2.1, the reflexive anaphor *ny tenany* may be promoted to the EA position over its antecedent (14). Promotion of an anaphor to the preverbal topic position over its antecedent is also allowed in Germanic, as shown in (15a) for Icelandic and (15b) for Dutch:

- (14) Novonoin'ny lehilahy ny tenany
 Pst-AccP.kill-Det man Det self-3
 "The man killed himself"
- (15) a. Sjálfan sig elskar Jón
 himself loves John
 "Himself, John loves"
- b. Zichzelf herkent Jan niet
 himself recognizes John not
 "Himself, John doesn't recognize"

Furthermore, Malagasy exhibits a pattern of optional EA deletion which is highly reminiscent of *topic-drop* in languages like German. As Huang (1984) and others have discussed, German has a rule which optionally deletes discourse-salient pronouns from matrix clauses in informal contexts. This rule targets both subject and object pronouns, but crucially only those pronouns which occupy the preverbal topic position may be deleted. Compare (16) below, where the subject is the topic, with (17), where the object is the topic: In the former case, the subject but not the object may be deleted, while in the latter case the reverse holds:

- (16) a. Ich hab' ihn schon gesehen
 I have him already seen
 "I already saw him"
- b. Ø hab' ihn schon gesehen
 have him already seen
 "(I) already saw him"

- c. * Ich hab' Ø schon gesehen
 I have already seen
 "I already saw (him)"
- (17) a. Ihn hab' ich schon gesehen
 him have him already seen
 "Him, I already saw"
- b. Ø hab' ich schon gesehen
 have him already seen
 "(Him), I already saw"
- c. * Ihn hab' Ø schon gesehen
 him have already seen
 "Him, (I) already saw"

The same pattern of deletion is found in Malagasy: In informal conversation, pronouns which are particularly discourse-salient may be optionally dropped, but only if they occupy the external argument position. This is illustrated in (18)–(19) below: In (18), where the verb is in the NomP form, we see that externalized subject pronouns may be freely deleted, while non-externalized object pronouns may not. In (19), where the verb is in the DatP form, we see that externalized object pronouns may be deleted, while non-externalized subject pronouns may not.⁷

- (18) a. Mamangy an'i Tenda izy
 NomP.visit Obj-Det Tenda 3
 "He is visiting Tenda"
- b. Mamangy an'i Tenda Ø
 NomP.visit Obj-Det Tenda
 "(He) is visiting Tenda"
- c. Mamangy azy i.....Naivo
 NomP.visit 3 Det Naivo
 "Naivo is visiting him"
- d. * Mamangy Ø i.....Naivo
 NomP.visit Det Naivo
 "Naivo is visiting (him)"

⁷ (18a-b) might be used to answer a question about the agent of the visiting event (e.g., "What is Naivo doing?"), while (19a-b) would be used to answer a question about the patient (e.g., "Where is Tenda?"). Note that sentence (19d) is grammatical under the reading "Tenda is being visited [by someone]", with an arbitrary, non-referential implied agent.

- (19) a. Vangian'i Naivo iza
 DatP.visit-Det Naivo 3
 "Him, Naivo is visiting"
- b. Vangian'i Naivo Ø
 DatP.visit-Det Naivo
 "(Him), Naivo is visiting"
- c. Vangiany i.....Tenda
 DatP.visit-3 Det Tenda
 "Tenda, he is visiting"
- d. * Vangiana Ø i.....Tenda
 DatP.visit Det Tenda
 "Tenda, (he) is visiting"

The similarity between German and Malagasy with regard to optional deletion of pronouns follows straightforwardly if the position of preverbal topics in V2 languages is the same as the position of external arguments in Malagasy. (For additional similarities between these two positions, see 3.2.3 and 3.3.)⁸

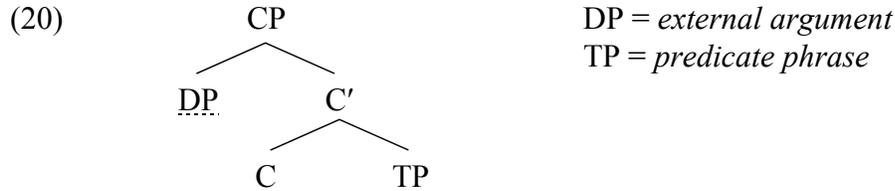
In the next section, I develop a structure for the predicate-external portion of the Malagasy clause, in which the landing site for EAs is identified as the specifier of TopP (*topic phrase*). This is essentially the same position to which fronted constituents raise in Germanic, according to the analysis of Müller & Sternefeld (1993), Zwart (1993), and others (for more on the structure of verb-second clauses, see 4.3.1). Syntactic evidence for the analysis in 3.1.3 is given in sections 3.2–3.4, where I show that the external argument behaves like topics in other languages in terms of how it interacts with binding and *wh*-extraction, and in terms of the kinds of locality constraints it obeys.

Of course, if we choose to treat the EA as a topic, then some explanation will have to be offered for the apparent subject-like properties of EAs mentioned at the beginning of section 3.1.1 (e.g., the pronoun alternations illustrated in (4), which suggest that the EA position is the locus of nominative case assignment). I turn to this issue in section 3.5.

3.1.3. Externalization as movement to SpecTopP

If the external argument is a topic rather than a subject, what position does it occupy? In 2.3.3 I suggested the structure in (20) (abstracting away from linear order) as a first hypothesis: The external argument extracts from its case position inside the predicate phrase (TP) and raises to the specifier of CP (cf. the classic derivation of verb-second order in Germanic):

⁸ There are also some important differences between the Germanic topic position and the EA position in Malagasy. I consider some of these in 4.3.1.

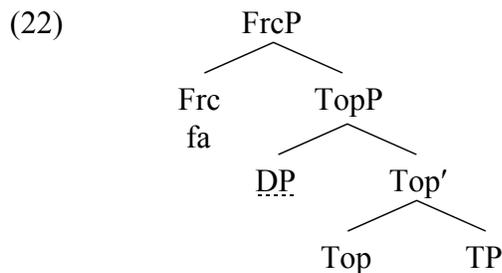


However, this proposal turns out to be inadequate. As I will show in this section, it is necessary to posit additional projections above and below the surface position of the EA. I will therefore adopt the ‘split CP’ hypothesis of Rizzi (1997), according to which the C-domain is comprised of a series of projections, each possessing its own categorial features (cf. also Bhatt & Yoon 1991, Koopman 1996, Cinque 1999, and others).

Consider first the relative positions of external arguments and complementizers in embedded contexts. If the C-domain consisted of a single projection, and if the EA occupied the specifier of that projection, as in (20), then in embedded clauses the EA should be outside the c-command domain of complementizers such as *fa* ‘that’ and *raha* ‘whether, if/when’. However, consider (21), which shows that two embedded clauses, each with its own EA, may be conjoined without repeating the complementizer. (According to one speaker I consulted, the sentence is actually ungrammatical if *fa* is repeated before the second conjunct.)⁹

- (21) Fantatro *fa* [[*mihinam-bary i.....Tenda*] ary [*matory Rabe*]]
 known-1s that NomP.eat-rice Det Tenda and NomP.sleep Rabe
 ‘I know that Tenda is eating rice and Rabe is sleeping’

Sentence (21) shows that the EA forms a constituent with the predicate phrase to the exclusion of the complementizer *fa*. I will therefore assume that the specifier position occupied by the EA is below the position of the complementizer, necessitating that the C-domain be split up into at least two projections, as in (22): The external argument is licensed in the specifier of a projection designated TopP (cf. MacLaughlin 1995, Pensalfini 1995), while the complementizer heads a higher projection. Following Rizzi (1997), I will refer to this higher projection as FrcP, or *force phrase*.¹⁰



⁹ The fact that EA-final order occurs in embedded contexts suggests that the proper analogy with Germanic is with those languages which allow embedded V2 (Icelandic, Yiddish). For some remarks on embedded V2, see 4.3.3.

¹⁰ In addition to hosting complementizers, FrcP also hosts certain speech-act morphemes such as the yes/no question particle *ve*. See 4.4.1 for discussion.

FrcP is so called because it is associated with the force features of the clause. This is reflected in the fact that the choice of complementizer in Malagasy (as in English) is determined in part by the illocutionary type of the embedded clause—*fa* for embedded statements, and *raha* for embedded yes/no questions.

In addition, there is evidence that the C-domain contains a third projection, located below TopP. To understand why this extra projection is needed, consider first the terminological distinction between *external argument* and *pivot*, touched on briefly in 2.2.2: The term *external argument* refers to the right-peripheral DP constituent which combines with the predicate phrase to form a complete sentence. *Pivot*, by contrast, refers to that constituent in the clause whose abstract case features are identified by the voice form of the verb—e.g., the nominative-pivot voice identifies a nominative case-bearing argument as the pivot, the circumstantial-pivot voice identifies an oblique constituent as the pivot, and so on. In all of the sentence types we have considered so far, the pivot and the external argument are one and the same. However, there is at least one case, involving extraction from embedded clauses, in which the pivot of a given verb is a constituent other than the external argument. I will review this case briefly here, returning to a more detailed discussion of the facts in 3.3.

Consider the sentence in (23a), containing a control complement (in brackets). In this sentence, the matrix subject *Rakoto* functions as the EA, as indicated by its clause-final position, and by the presence of NomP morphology on the matrix verb *kasa* “intend”. It is also possible to map the object of the embedded verb, *ny vilia* “the dishes”, onto the EA position, in which case the matrix subject occurs in its non-externalized position immediately following the matrix verb, as shown in (23b). Notice that externalizing the embedded object triggers object-pivot morphology on both the matrix and embedded verbs, AccP morphology in the former case and DatP morphology in the latter case.

- (23) a. Mikasa [hanasa ny vilia] Rakoto
 NomP.intend Irr-NomP.wash Det dish Rakoto
 “Rakoto intends to wash the dishes”
- b. Kasain-dRakoto [hosasana] ny vilia
 AccP.intend-Rakoto Irr-DatP.wash Det dish
 “The dishes, Rakoto intends to wash”

The fact that *ny vilia* is the matrix EA in (23b), and does not form a constituent with the embedded clause, is shown by the placement of the particle *ve* in yes/no questions (cf. the discussion in 2.1 on the use of *ve* as a diagnostic for determining the right edge of the predicate phrase). As (24) shows, *ve* intervenes between the embedded verb and *ny vilia*:

- (24) Kasain-dRakoto hosasana *ve* ny vilia?
 AccP.intend-Rakoto Irr-DatP.wash Qu Det dish
 lit. “Are the dishes such that Rakoto intends to wash them?”

Let us focus on the voice marking in (23b): What constituents determine the voice forms in which the embedded and matrix verbs will appear? A reasonable hypothesis is that the EA *ny vilia* determines the voice of both verbs: We might suppose that when an embedded object is mapped to the matrix EA position, it triggers object-pivot marking on each of the verbs in its do-

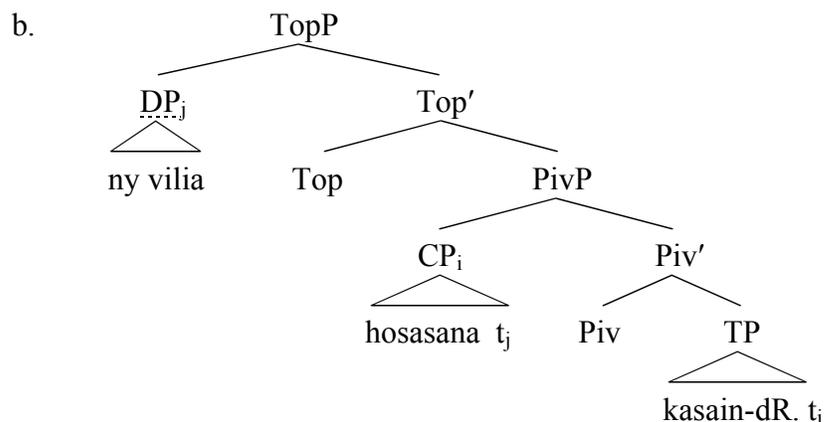
main (this is essentially the solution offered by Law (1995), from whom the examples in (23) are adapted). However, I will present evidence in 3.3 to show that this is not the case. In fact, the EA only controls the voice of the embedded verb, while the voice of the matrix verb is determined by the embedded clause as a whole. Thus, the AccP morphology on *kasa* “intend” in (23b) is triggered by the complement clause headed by *hosasana* “wash”, which, I argue, receives abstract accusative case from the verb which subcategorizes for it. Descriptively, the pattern is as follows (in 3.3 I refer to this as the *pivot restriction on extraction*, or PRE):

- (25) When a subconstituent α undergoes extraction out of an embedded clause β , the case features of α determine the voice of the embedded verb, while the case features of β determine the voice of the verb in the next higher clause.

Thus, when an argument of an embedded clause becomes the matrix EA, it is the embedded clause rather than the EA which functions as the pivot of the matrix verb. This is what motivates the distinction between *external arguments* and *pivots* mentioned above.

As I showed in (24), the EA does not form a surface constituent with the clause out of which it extracts, since *ve* may intervene between them. Hence we must assume that the pivot position in which the embedded clause is licensed (resulting in AccP marking on the matrix verb) is distinct from the position in which the EA winds up at spell-out. Returning to example (23b), repeated below as (26a): While the matrix EA *ny vilia* “the dishes” occupies the specifier of TopP, I will assume that the embedded clause from which it extracts occupies the specifier of a lower A'-projection, referred to mnemonically as PivP (*pivot phrase*). As its name indicates, PivP is associated with the pivot function: specifically, SpecPivP is the position to which a constituent raises from its case position in TP, thereby triggering the appropriate voice morphology on the verb. The basic structure for (26a) is shown in (26b) (as before, I postpone until chapter 4 the question of how this structure gets translated into the correct linear order):

- (26) a. Kasain-dRakoto [hosasana] ny...vilia
 AccP.intend-Rakoto Irr-DatP.wash Det dish
 “The dishes, Rakoto intends to wash”

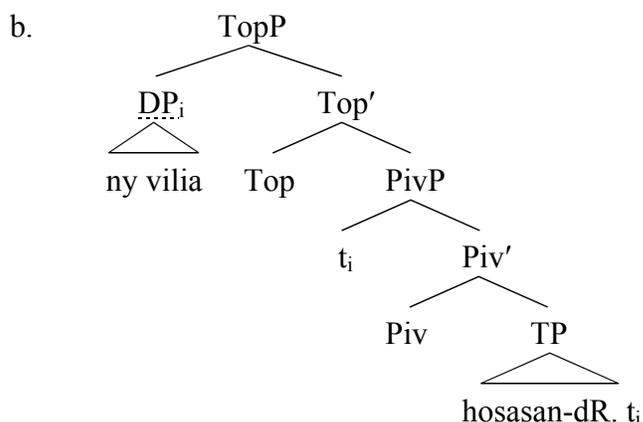


In 3.3, I will argue that this structure results from clausal pied-piping, followed by subextraction. Briefly, the derivation proceeds as follows: (a) *Ny vilia* is generated in the embedded clause, and

raises to the embedded SpecTopP position by way of SpecPivP, triggering DatP morphology on *hosasana* “wash”. (b) Once it has reached the embedded SpecTopP position, *ny vilia* pied-pipes the embedded clause to the specifier of the matrix PivP, causing the embedded clause to trigger AccP morphology on the matrix verb *kasaina* “intend”. (c) Finally, *ny vilia* subextracts from the embedded clause and raises into the specifier of TopP, resulting in the structure in (26b).

Since we are forced to distinguish the pivot position from the EA position in the case of long-distance extraction, we may assume for the sake of uniformity that these positions are distinct in cases of local extraction as well. Thus, for a monoclausal sentence such as (27a), I will assume that the EA *ny vilia* first raises to the specifier of PivP, triggering DatP morphology on the verb, and then raises on to its surface position in the specifier of TopP (27b):

- (27) a. Hosasan-dRakoto ny...vilia
 Irr-DatP.wash-Rakoto Det dish
 “Rakoto will wash the dishes”



With respect to its status as the lowest C-related projection in the clause, PivP corresponds to the Fin(iteness)P projection of Rizzi (1997), which he associates with the INFL-related properties of the C-domain, such as the interaction between finiteness and complementizer selection (e.g., *that* vs. *for* in English), as well as complementizer agreement in West Germanic (Haegeman 1992, Zwart 1993, Shlonsky 1994, Hallman 1997b, et al.). The specifier of PivP corresponds to the position in which Rizzi locates the null operator in English topicalization constructions (28a), as well as its (optionally) overt equivalent found in other Germanic languages such as Dutch (28b). Thus, the fact that the EA in Malagasy must form a chain with an element in this position makes sense from a cross-linguistic perspective.¹¹

¹¹ Note that resumptive *die* in Dutch, like the EA in Malagasy, is capable of pied-piping a larger constituent to SpecPivP. This is shown in (i) below, where the resumptive pronoun *die*, coindexed with the left-dislocated topic *Jan*, has pied-piped a DP into the specifier of PivP (Zwart 1993) (cf. (26)):

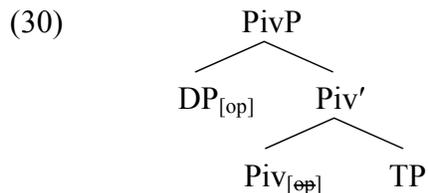
- (i) Jan_i [PivP [die_i z'n ouders] [Piv' ken ik t_i niet]]
 Jan that his parents know I not
 “Jan, I don’t know his parents”

- (28) a. [TopP John_i [PivP Op_i [Piv' I don't like t_i]]]
 b. [TopP Jan_i [PivP die_i [Piv' mag ik t_i niet]]]

Within the Minimalist framework, movement operations are triggered by feature attraction: In the case of A'-movement, an uninterpretable scope-related feature in one of the C-projections (say, [wh]) attracts its closest interpretable counterpart, causing a constituent associated with the counterpart to raise into its checking domain. There are a number of possible ways to formalize the movement of pivots to SpecPivP and EAs to SpecTopP under this system. Although the details of a feature-based analysis of externalization are not crucial for the point I am making, I will adopt the following analysis (to be modified slightly in 3.5) for the sake of concreteness:

- (29) a. An interpretable [op] feature, associated with the scope-taking property of topics, is assigned in the numeration to a [+specific] DP in the clause.¹²
 b. The head of PivP possesses an uninterpretable [op] feature which must be checked before spell-out.
 c. The head of TopP possesses an uninterpretable [D] feature and an uninterpretable [op] feature, which must both be checked before spell-out.¹³

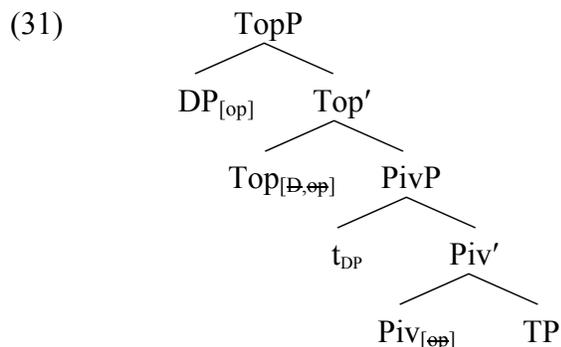
The assumptions in (29) suffice to derive the structure in (27b) above: The DP *ny vilia* “the dishes” is assigned an [op] feature in the numeration. Once the derivation reaches the point where Piv merges with TP to form PivP, the [op] feature of Piv attracts the DP into its specifier and is checked, as shown in (30) (features are notated with subscripts; an uninterpretable feature which has been checked is indicated by a strikethrough):



¹² I assume that the [op] feature is added to the DP in the numeration (rather than being inherited from the lexicon) because being the topic of a clause is not an intrinsic property of DPs or their constituents. Instead, a DP is interpreted as a topic by virtue of the scopal position it occupies (being a topic, under this view, consists in being [+specific] and scoping out of the domain of the predicate phrase). The [op] feature of the DP is thus comparable to its abstract case features, which are also added in the numeration. On the assignment of non-intrinsic features in the numeration, see Chomsky (1995, p. 231ff.).

¹³ If CPs are allowed to raise into the EA position as well as DPs (cf. the discussion at the end of section 2.1), then the attracting feature of Top is not [D] per se, but whatever feature is common to both determiners and complementizers in their shared function as ‘subordinators’, which ‘close off’ a predicate, allowing it to act as an argument of a higher predicate. On the categorial connection between DP and CP, see Abney (1987), Szabolcsi (1994), et al.

Top then merges with PivP to form TopP, and the [D] and [op] features of Top attract the closest compatible features—namely, the [D] and [op] features of the DP in SpecPivP—causing the DP to raise again into the specifier of TopP, as in (31):



To derive the structure in (26b), all that is needed is to assume that (a) the embedded clause is of category TopP (i.e., the FrcP projection is missing); and (b) this embedded TopP may inherit an [op] feature from the DP in its specifier via spec-head agreement. Given these assumptions, once the matrix Piv enters the derivation in (26b), its [op] feature will attract the entire embedded clause into its checking domain, rather than the DP.¹⁴ Once the embedded clause has raised to become the specifier of the matrix PivP, the DP in its specifier extracts and raises on to the specifier of the matrix TopP to check the [D] and [op] features of Top. (For a detailed discussion, with trees illustrating the steps in this derivation, see section 3.3.2.)

Summarizing the discussion in 3.1, I argued that the external argument in Malagasy occupies the specifier of a TopP projection within a split CP structure, and forms an A'-chain with a trace in the specifier of the next lower C-projection, PivP (the *pivot* position). This SpecTopP position is essentially identical to the position occupied by clause-initial topics in Germanic. Externalization involves a two-step process: The need to check an uninterpretable scope feature [op] causes a case-bearing constituent to extract from the predicate phrase and raise to the specifier of PivP (triggering the appropriate voice-marking on the verb), after which further movement to the specifier of TopP takes place to check uninterpretable [D] and [op] features of the Top head. In most cases, the EA, a [+specific] DP which receives an interpretable [op] feature in the numeration, extracts and raises through SpecPivP to SpecTopP. However, in cases where the EA starts out in an embedded clause, it first raises to the TopP of its own clause, and then pied-pipes that clause to the matrix SpecPivP before finally extracting and raising on to the matrix SpecTopP.

Having laid out the essential features of my analysis, I now turn to empirical support for treating externalization as movement to a scopal position in the C-domain. Notice that there is an important difference between my analysis and the conventional analysis of externalization, as exemplified by the theory of Guilfoyle, Hung, & Travis (1992) discussed in 3.1.1. According to GHT, promotion of the EA is driven by the need to check case features, and thus counts as *A-movement*, while under my approach, externalization involves a sequence of *A'-movement* opera-

¹⁴ Cf. Moritz & Valois (1994), who argue that scopal features such as [wh] and [neg] may be inherited under spec-head agreement, triggering pied-piping.

tions. Given the well-established differences between A-movement and A'-movement, the choice between GHT's approach and mine has clear empirical consequences.

The theoretical status of the traditional A/A'-movement distinction has been questioned in recent years, largely as a result of research on the properties of scrambling (cf. Weibelhuth 1992, as well as Corver & van Riemsdijk 1994 and papers therein). Nevertheless there is a consensus that typical A-movement operations such as raising-to-subject behave differently from typical A'-movement operations such as wh-movement when it comes to binding and reconstruction, locality, and the ability to feed subsequent A-movement (i.e., *improper movement* effects; see 3.5.2). By considering how these differences apply to externalization in Malagasy, it should be possible to decide between my analysis and the one suggested by GHT. This is the focus of sections 3.2 and 3.3 below: In 3.2 I present evidence from binding to show that external arguments undergo obligatory reconstruction. Then in 3.3 I show that movement to the pivot position behaves like wh-movement in other languages with respect to locality (specifically, it exhibits properties suggestive of clausal pied-piping of the kind found in Basque).

If we assume that externalization involves a type of A'-movement, then the binding and extraction facts discussed in 3.2–3.3 follow more-or-less straightforwardly from recognized principles. On the other hand, we would need to posit a number of extra stipulations in order to accommodate these facts under the conventional analysis of externalization as case-driven A-movement. For example, under the A-movement analysis we would be forced to conclude that, whereas in most languages subject clauses are islands for extraction while complement clauses are typically transparent (Ross 1967, Huang 1982, et al.), the exact opposite is true of Malagasy. Furthermore, we would need to assume that subjects obligatorily reconstruct in Malagasy, while being unable to do so in other languages. In short, by analyzing externalization as A-movement, we end up with a theory in which the grammar of Malagasy-type languages looks fundamentally different from that of other language types. By contrast, analyzing externalization as A'-movement allows us to integrate the binding and extraction facts in Malagasy with what we know about other languages. The A'-movement analysis is thus to be preferred on conceptual grounds.

3.2. Externalization, reconstruction, and binding

In this section I consider the interaction of externalization with binding. In 3.2.1 I present evidence from binding and coreference to show that constituents which occupy the EA position obligatorily reconstruct into the predicate phrase—that is, they are obligatorily interpreted in their predicate-internal positions with respect to the Binding Conditions.¹⁵ I take this as evidence that the EA occupies an A'-position. In order to accommodate the binding evidence under an analysis which treats EAs as structural subjects (as in Guilfoyle et al. 1992), we would need to introduce an interpretive parameter to ensure that subjects in Malagasy always reconstruct, while failing to reconstruct in other languages. I discuss this in 3.2.2.

¹⁵ The term *reconstruction* is used here as a matter of convenience. Although I speak of constituents as reconstructing into a lower position, I do not assume that there is an actual transformation which lowers constituents at LF. Instead, I lean towards the 'copy and delete' theory advocated by Chomsky (1995, chapter 3), who analyzes reconstruction effects in terms of the LF-deletion of copies in a movement chain. (See section 4.2.3 for a brief discussion of the copy theory of movement.) Other non-lowering approaches to reconstruction effects are also possible, such as Barss's (1984, 1986) theory of binding paths/chain binding.

Finally, in 3.2.3 I discuss an apparent paradox pertaining to binding in Malagasy, namely that externalization, while showing the usual reconstruction effects, does not trigger a weak crossover. I consider two possible solutions to this paradox: (a) Externalized quantifier phrases raise to a position other than SpecTopP, from which reconstruction is impossible. (b) The EA does not actually raise to the specifier of TopP, but is base-generated there and linked to a null operator in SpecPivP (here I follow Lasnik & Stowell (1991), who observe that operator movement does not exhibit weak crossover). Though ultimately I leave the problem of weak crossover unresolved, I observe that similar facts have been documented for topicalization in other languages, including German, Icelandic, and Hungarian.

3.2.1. The obligatory reconstruction of external arguments

The availability of reconstruction provides a more-or-less reliable test for distinguishing core cases of A-movement (such as raising-to-subject) from core cases of A'-movement (such as wh-movement). Generally speaking, constituents which have undergone A-movement are interpreted in their landing sites, while constituents which have undergone A'-movement are interpreted in their trace positions—that is, A'-movement reconstructs, while A-movement does not (but see the caveats in footnote 16).

The fact that A-movement need not reconstruct is illustrated by examples such as (32)–(33): In (32b), the QP *each of these girls* is able to bind the pronoun *her* from its raised position, resulting in a variable interpretation; while in (33b), A-movement of *Bette and Joan* over the anaphor *each other* rescues a potential Principle A violation (and voids a potential Principle C violation):

- (32) a. * It seems to her_i mother [that each of these girls_i is a genius]
 b. Each of these girls_i seems to her_i mother [t_i to be a genius]
- (33) a. * It seems to each other_i [that Bette and Joan_i are manipulative]
 b. Bette and Joan_i seem to each other_i [t_i to be manipulative]

Consider also the examples in (34) and (35) (from Belletti & Rizzi 1988), suggesting that A-reconstruction is not only unnecessary, but impossible: In (34a-b) we see that A-movement of a pronoun over an R-expression with which it is coindexed results in a Principle C violation. (35a-b) show the same results for Principle B:

- (34) a. It seems to Bill_i's sister [that he_i is the best]
 b. * He_i seems to Bill_i's sister [t_i to be the best]
- (35) a. It seems to him_i [that it is likely [that he_i will win]]
 b. * He_i seems to him_i [t_i to be likely [t_i to win]]

A'-movement, by contrast, obligatorily reconstructs—that is, A'-elements are interpreted in their trace positions for purposes of binding. That A'-reconstruction is possible is shown by examples such as (36), in which an anaphor or a constituent containing a bound pronoun has undergone contrastive topic-fronting over its antecedent:

- (36) a. [Herself]_i, Joan_i loves t_i more than anyone
 b. [Her_j children]_j, each woman_j loves t_i more than anyone

The obligatoriness of A'-reconstruction is demonstrated by examples such as (37a-b). In these sentences, where a topic or wh-phrase undergoes A'-movement over a pronoun, coreference with the pronoun is ruled out. If we assume that the topic/wh-phrase must reconstruct into the position of its A'-trace, which is c-commanded by the pronoun, then the ungrammaticality of these examples can be attributed straightforwardly to Principle C ((37a-b) are instances *strong crossover*; Wasow 1972, Chomsky 1981, et al.; cf. also Postal 1971).

- (37) a. * Joan_i, I know that she_i loves t_i more than anyone
 b. * Which girl_i do you think that she_i loves t_i the most?

In short, A-reconstruction is disallowed, while A'-reconstruction is obligatory.¹⁶ Thus, if reconstruction of EAs in Malagasy is both possible and obligatory, as I will try to show below, we may take this as evidence for treating externalization as A'-movement.

In 2.3.2, I provided evidence from binding to show that predicate-internal subjects (agent phrases) asymmetrically c-command predicate-internal objects. Consider the CrcP examples in (38)–(39), in which the subject and object remain within the predicate phrase, and an oblique constituent *ny zanany* ‘his children’ (interpreted as a benefactee) is promoted to the EA position: (38) shows that the subject may bind a reflexive anaphor in the object position, but not vice versa.¹⁷ (39) shows that while a possessive pronoun within the direct object (here the third per-

¹⁶ The binding facts become more complicated when a pronoun or anaphor is properly contained in the complement of a moved constituent. For example, while A-moved pronouns do not reconstruct, a pronoun within the PP complement of an A-moved constituent may be interpreted in the base position of that constituent, as shown in (i-a), where the pronoun *his* is bound by *everyone* (Sportiche 1999). Belletti & Rizzi (1988) (who cite Langendoen & Battistella 1982, Johnson 1985) point out similar cases involving anaphors (i-b):

- (i) a. [The pictures of his_j mother]_i seemed to each boy_j [t_i to be more flattering than the pictures of his_j father]
 b. [Replicants of themselves_j]_i seemed to the boys_j [t_i to be ugly]

Moreover, while a pronoun or anaphor contained in the complement of an A'-moved constituent is usually interpreted in the A'-trace position of that constituent (ii-a), it may also be interpreted in a higher position under certain circumstances (ii-b,c):

- (ii) a. [Which picture of herself_j]_i did Joan_j like t_i the best?
 b. Bette_k wondered [[which picture of herself_{j,k}]_i Joan_j liked t_i the best]
 c. [Which picture of herself_{j,k}]_i did Bette_k think [that Joan_j liked t_i the best] ?

It is not entirely clear how to analyze examples such as (i) and (ii), but see Barss (1984, 1986), Chomsky (1995), and Sportiche (1999) for specific proposals. I will try to avoid such complications here by sticking whenever possible to Malagasy examples involving non-complex DPs.

¹⁷ Reflexive anaphors in Malagasy are built from the noun *tena* (lit. ‘body’). In certain contexts, *tena* may be used by itself as a ‘bare’ NP with reflexive meaning (38a). In other cases, the reflexive takes the form *ny tenany* ‘his/herself’ (38b). The distributional properties of *tena* and *ny tenany* are poorly understood. Note, however, that because *tena* is a bare noun phrase, it is formally [-specific], while *ny tenany* (which includes a determiner) is [+specific]; hence, only *ny tenany* is capable of functioning as an EA, as in (40a) below.

son enclitic *-ny*) may be bound by a quantified subject, binding of a pronoun within the subject by a quantified direct object is judged marginal.¹⁸

- (38) a. Namonoan'ny lehilahy_i tena_i ny...zanany
 Pst-CrcP.kill-Det man self Det child-3
 "The man_i killed himself_i for his children"
- b. * Namonoan'ny tenany_i ny lehilahy_i ny...zanany
 Pst-CrcP.kill-Det self-3 Det man Det child-3
 "Himself_i killed the man_i for his children"
- (39) a. Nanasehoan'ny lehilahy tsirairay_i ny rahalahiny_i ny...zanako
 Pst-CrP.show-Det man each Det brother-3 Det child-1s
 "Each man_i showed his_i brother to my children"
- b. ?? Nanasehoan'ny rahalahiny_i ny lehilahy tsirairay_i ny...zanako
 Pst-CrP.show-Det brother-3 Det man each Det child-1s
 "His_i brother showed each man_i to my children"

As the examples in (40) below demonstrate, this binding asymmetry is unaffected by externalization of the object over the subject. (40a) shows that an anaphor may be promoted over its antecedent without violating Condition A or C of the Binding Theory (Travis 1997). Similarly, (40b) shows that a possessive pronoun embedded within an object EA may be bound by a quantified subject. Thus we see that, for purposes of binding, externalized direct objects may reconstruct from the EA position into the scopal domain of the predicate-internal subject.

- (40) a. Novonoin'ny lehilahy_i ny...tenany_i
 AccP.killed-Det man Det self-3
 "Himself_i, the man_i killed"
- b. Novangian'ny mpianatra tsirairay_i androany ny...rainy_i
 DatP.visited-Det student each today Det father
 "His_i father, each student_i visited today"

Consider also (41a-b), involving coreference between a pronoun and an R-expression. In the example in (41a) (courtesy of Ileana Paul, p.c.), an object containing a possessor DP *Ramatoa* is externalized over a third person pronominal subject *-ny*. This sentence is ungrammatical under a reading where *-ny* is coreferential with *Ramatoa*. By contrast, a coreference reading is possible in (41b), where the positions of the pronoun and the R-expression have been reversed:

¹⁸ To ensure that the pronoun *-ny* in (39a) is interpreted as a bound variable, rather than a true pronoun corefering with a group-denoting expression ("the group of men showed their brothers to my children"), the quantifier *tsirairay*, lit. "one-by-one" (< *iray* "one"), has been used. Unlike the more common universal quantifier in Malagasy, *rehetra* "all", *tsirairay* is strictly distributive (cf. footnote 20).

- (41) a. Norohany ny...vadin-dRamatoa
 Pst-DatP.kiss-3 Det spouse-Lnk-Ramatoa
 “Ramatoa_i’s husband, she_j kissed” [i ≠ j]
- b. Norohan-dRamatoa ny...vadiny
 Pst-DatP.kiss-Ramatoa Det spouse-3
 “Her_i husband, Ramatoa_i kissed”

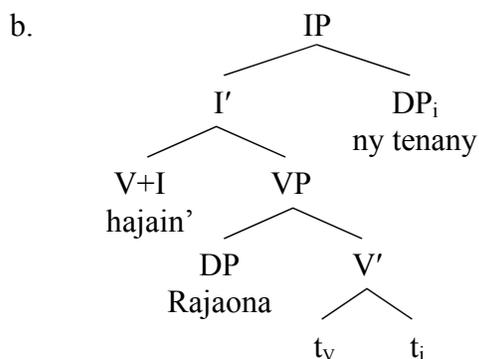
Examples such as (41a) suggest that reconstruction of externalized objects is not only possible, but obligatory. If we assume that the EA must be interpreted in the c-command domain of the predicate-internal subject, then we can attribute the absence of a coreference reading in (41a) to Condition C: The DP containing *Ramatoa* reconstructs into the c-command domain of the pronoun, causing the pronoun to A-bind *Ramatoa* (cf. the English equivalent *She kissed Ramatoa’s husband*, which is also ungrammatical under a reading where *she* = *Ramatoa*).

3.2.2. Against an A-movement account of binding phenomena

The evidence in 3.2.1 shows that external arguments are interpreted in their predicate-internal positions for purposes of binding. This is just what we would expect if the EA occupied an A’-position in the C-domain of the clause, as I argued in 3.1, given that A’-moved constituents in other languages obligatorily reconstruct. On the other hand, if we were to analyze externalization as case-driven movement to the specifier of IP, as Guilfoyle, Hung & Travis (1992) argue, we would need to posit language-specific principles of interpretation and/or reconstruction to account for the binding differences between subjects in Malagasy and subjects in other languages. Not only is the A’-movement analysis more parsimonious than the A-movement analysis, but it is the only analysis which is compatible with the goals of the Minimalist program, which seeks to eliminate all cross-linguistic parameters other than those based on lexical features (Chomsky 1995, cf. Borer 1984).

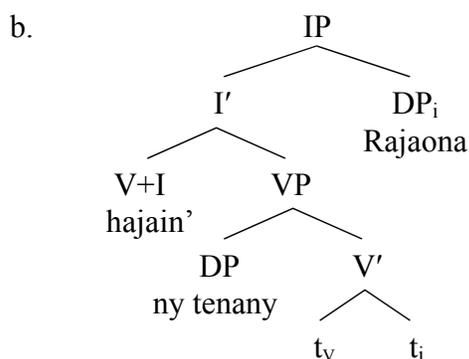
The binding facts discussed above have not gone unnoticed by advocates of the A-movement approach to externalization, who have proposed various theories to explain them. Guilfoyle, Hung, & Travis (1992) argue that binding relations in Malagasy are evaluated with respect to the θ -positions of arguments. That is, the ability of a potential antecedent to bind an anaphor or variable depends on their relative hierarchical positions within the VP domain. This is illustrated in (42)–(43): In (42a), *Rajaona* is able to bind the reflexive *ny tenany*, even though it fails to c-command it in the overt syntax, because it c-commands the base position of the reflexive (the tree which GHT would assume for (42a) is given in (42b)).

- (42) a. Hajain-dRajaona ny...tenany
 AccP.respect-Rajaona Det self-3
 “Himself_i is respected by Rajaona_i”



By the same token, *Rajaona* fails to bind the reflexive in (43a) even though it c-commands it, because its θ -position is below that of the reflexive (43b):

- (43) a. * Hajain'ny tenany Rajaona
 AccP.respect-Det self-3 Rajaona
 "Rajaona_i is respected by himself_i."



In derivational terms, what this means is that IP subjects in Malagasy obligatorily reconstruct into their VP-internal positions at LF. However, obligatory reconstruction from the specifier of IP is clearly not universal. As is well known for English, a pronominal specifier in the subject of a raising verb may not be bound by a lower QP, even if that QP c-commands the base position of the subject, as shown in (44). If reconstruction from the specifier of IP were allowed in English, (44b) should be grammatical under the intended reading.

- (44) a. It seems to every mother_i [that her_i child is a genius]
 b. * [Her_i child]_j seems to every mother_i [t_j to be a genius]

Furthermore, as I observed in 3.2.1, movement to SpecIP in English has the ability to create binding configurations which did not exist in the base. This is shown in (45), where the derived subject is capable of binding an anaphor which c-commands its θ -position.

- (45) Bette and Joan_i seem to each other_i [t_i to be manipulative]

If externalization in Malagasy involves movement to a case position such as SpecIP, it is not clear how we could reconcile the English judgements in (44)–(45) with the Malagasy judgements in (42)–(43), unless we assume that binding and/or reconstruction from case-positions is subject to cross-linguistic parameterization. Such a parameter might be formulated as in (46):

- (46) If α is a non-trivial A-chain $\langle \alpha_n, \dots, \alpha_1 \rangle$, where α_1 is in a θ -position and α_n is in a θ' -position (case-position):
- i. *Malagasy*: Interpret α_1 for purposes of Binding Principles A and B
 - ii. *English*: Interpret α_n for purposes of Binding Principles A and B

In traditional Government-Binding terms, this amounts to saying that binding relations are calculated at D-structure in Malagasy and at S-structure or LF in English. Such a parameter would be difficult to reformulate within the Minimalist framework, however, which seeks to eliminate principles that appeal to distinct derivational levels such as D-structure, S-structure, and LF (see Chomsky 1995, chapter 3 for discussion), as well as cross-linguistic parameters on interpretation (other than those based on lexical differences).

The facts presented here thus cast doubt on any account of Malagasy which treats externalization as movement from a θ -position to a case position. On the other hand, if we assume that externalization involves movement from a case position to an A'-position, then the need to stipulate language-specific binding principles disappears. The reconstruction of non-agent EAS into the domain of the agent phrase follows from the same principles which require non-subject wh-phrases to reconstruct into the domain of the subject (as in *Which of his_i pictures does each artist_i like the best?*).¹⁹

One potential problem for the A'-movement analysis of externalization involves the absence of weak crossover effects when a quantified expression is externalized. I discuss weak crossover in the next section.

3.2.3. The absence of weak crossover

Although externalization exhibits most of the reconstruction properties associated with A'-movement, it behaves differently from standard cases of A'-movement (wh-movement, focus movement) when it comes to *weak crossover*. Lasnik & Stowell (1991) characterize weak crossover in terms of the descriptive generalization in (47):

- (47) In a configuration where a category C A'-binds a pronoun P and a trace T, P may not be contained in an argument phrase XP that c-commands T.

In other words, when a constituent undergoes A'-movement, leaving a trace, it may not bind a pronoun contained within an argument which c-commands that trace. For example, consider the

¹⁹ Of course, I have said nothing here about the larger question of *why* A-movement and A'-movement behave differently with regard to reconstruction. The advantage of adopting an A'-movement approach of externalization is that, whatever analysis of reconstruction effects we adopt, this analysis will generalize to both English-type languages and Malagasy-type languages.

wh-movement examples in (48)–(49) below: In (48) a bound variable construal of the pronoun *her* is unavailable, in spite of the fact that the head of the wh-movement chain c-commands the pronoun, because the constituent containing the pronoun c-commands the wh-trace. In order for a bound construal to be licit, the pronoun must be c-commanded by the tail of the wh-movement chain (viz., the highest A-position of the wh-phrase), as in (49):

- (48) a. ?* Who_i did her_i mother say [t_i had grown an inch this month] ?
 b. ?* Which girl_i did you say [her_i mother loves t_i] ?
- (49) Which girl_i did you say [t_i loves her_i mother] ?

If we assume that the wh-phrase obligatorily reconstructs into its trace position, then the ungrammaticality of (48) follows from the c-command condition on pronoun binding (May 1985, et al.), what Sportiche (1999) refers to as *Condition D* of the binding theory:

- (50) A pronoun may be interpreted as a variable bound by a quantifier phrase QP iff (the case position of) the QP c-commands (the case position of) the pronoun.

As my statement of Condition D makes clear, weak crossover configurations are only created by A'-movement. Compare the examples in (48)–(49) with those in (51), involving DP-raising: Even though *every girl* does not c-command the pronoun *her* from its base position, it is sufficient that it c-command the pronoun from its landing site in order to license a bound variable reading of the pronoun. This follows if we assume that *every girl* does reconstruct into its trace position.

- (51) a. * It seemed to her_i mother [that every girl_i had grown an inch this month]
 b. Every girl_i seemed to her_i mother [t_i to have grown an inch this month]

Applying the weak crossover test to Malagasy, we find that externalization patterns with the DP-movement examples in (51) rather than the wh-movement example in (48)—an unexpected result, given the evidence in 3.2.1 to suggest that externalization involves A'-movement. Consider first the sentences in (52)–(53) below, in which a universally quantified agent (*ny mpianatra tsirairay* “each student”, *ny vehivavy rehetra* “all the women”) binds into a patient (*ny rainy* “his father”, *ny vadiny* “her spouse”).²⁰ The NomP sentences in (52a) and (53a) demonstrate that the

²⁰ For the sake of completeness, I present examples containing both of the universal quantifiers in Malagasy, *tsirairay* “each” and *rehetra* “all” (the examples with *rehetra* are taken from Travis 1997). In general, these two quantifiers work in the same way, although the strict bound variable reading is perhaps less salient with *rehetra* than with *tsirairay*, due to the fact that *tsirairay* is strongly distributive while *rehetra* favors a collective interpretation: Compare the sentences in (i), which show that subjects with *rehetra* are semantically compatible with inherently collective predicates (e.g., compound verbs formed with *miaraka* “be/go together”), while subjects with *tsirairay* are not:

- (i) a. Miara-milalao ny...zaza...rehetra
 NomP.be.together-NomP.play Det child all
 “All the children play together”

notional subject may bind into the notional object from the EA position, as one might expect. (52b) and (53b) show that this binding relation is preserved when the notional object is externalized over the notional subject, suggesting that the object EA may reconstruct into its base position below the subject, as discussed above for (40):

- (52) a. Namangy ny rainy_i ny...mpianatra tsirairay_i omaly
 Pst-NomP.visit Det father-3 Det student each yesterday
 “Each student_i visited his_i father yesterday”
- b. Novangian’ny mpianatra tsirairay_i ny...rainy_i omaly
 Pst-DatP.visit-Det student each Det father-3 yesterday
 “His_i father, each student_i visited yesterday”
- (53) a. Nanoroka ny vadiny_i ny...vehivavy rehetra_i
 Pst-NomP.kiss Det spouse-3 Det woman all
 “All the women_i kissed their_i spouse(s)”
- b. Norohan’ny vehivavy rehetra_i ny...vadiny_i
 Pst-DatP.kiss-Det woman all Det spouse-3
 “Their_i spouse(s), all the women_i kissed”

Now consider (54)–(55), in which the pronoun is contained in the notional subject and the notional object is a QP. The sentences in (54a) and (55a), in which the notional subject functions as the EA, are ungrammatical under the bound reading of the pronoun. This is what we expect on the basis of (51), since the QP c-commands neither the EA nor the gap in the postverbal agent phrase position with which it is coindexed. However, in (54b) and (55b) we see that the bound pronoun reading suddenly becomes available when the QP is promoted to the EA position. Thus externalization seems to induce an ‘anti-weak crossover’ effect by eliminating a potential Condition D violation.^{21,22}

-
- b. # Miara-milalao ny...zaza tsirairay
 NomP.be.together-NomP.play Det child each
 “Each child plays together”

²¹ There is some disagreement among speakers on the availability of a bound pronoun interpretation for (54b). Three of the speakers I have consulted have no problem accepting the bound reading, but there is a fourth speaker (my principal informant) who consistently rejects this reading. I nothing to say about these differences, except to repeat the complaint (voiced by many exasperated fieldworkers) that scope and binding judgements tend to be subtle and difficult to elicit.

To make matters worse, Ileana Paul (p.c) informs me that one of the speakers she consulted seems to allow pronoun binding in all cases. For this speaker, (54a) and (55a) are just as acceptable as the other sentences. Clearly, more work needs to be done to establish the basic facts, and to determine the source of this speaker variation. For purposes of the present discussion, I have tried to represent, on the basis of limited data, what I believe to be the majority opinion concerning binding possibilities.

²² Richards (2000) reports essentially the same contrast in Tagalog: Binding of a pronoun in the subject by a quantified direct object is improved if the direct object functions as the EA/pivot of the clause (recall that the EA/pivot in Tagalog does not occupy a fixed position in the clause, but is instead identified by the determiner *ang*):

- (54) a. * Namangy ny mpianatra tsirairay_i ny...rainy_i omaly
 Pst-NomP.visit Det student each Det father-3 yesterday
 “His_i father visited each student_i yesterday”
- b. (?) Novangian’ny rainy_i ny...mpianatra tsirairay_i omaly
 Pst-DatP.visit-Det father-3 Det student each yesterday
 “Each student_i, his_i father visited yesterday”
- (55) a. * Nanoroka ny vehivavy rehetra_i ny...vadiny_i
 Pst-NomP.kiss Det woman all Det spouse-3
 “Their_i spouse(s) kissed all the women_i”
- b. Norohan’ny vadiny_i ny...vehivavy rehetra_i
 Pst-DatP.kiss-Det spouse-3 Det woman all
 “All the women_i, their_i spouse(s) kissed”

Since the externalization of a notional object QP over an agent phrase containing a pronoun fails to trigger a weak crossover effect, we might conclude that externalization really involves A-movement, contra what I argued in 3.2.2. However, such a conclusion would be ill-founded. Crucially, although the presence of weak crossover effects is a reliable diagnostic for A'-movement, the absence of such effects cannot by itself be taken as evidence of A-movement.

It is unclear how to reconcile the absence of weak crossover with the presence of other reconstruction effects. One possible solution would be to assume that quantifier phrases such as *ny mpianatra tsirairay* “each student” do not raise to the specifier of TopP like referential expressions do, but to some other projection from which they may not reconstruct. Interestingly, Hungarian provides evidence for a left-peripheral A'-position associated specifically with (certain kinds of) quantifier phrases. As Kiss (1994) and others have shown, universal QPs typically occupy a position to the left of the predicate phrase, but to the right of topics and sentence adverbials. Consider (56a), for example, in which *minden kérdést* “every question” follows the topic *a tanár* “the teacher” and the temporal adverbial phrase *tegnap az órán* “yesterday in class”, but precedes the perfective particle *meg-*, which marks the left edge of the predicate phrase in this sentence. (Permuting the QP with either the adverbial or the topic, or both, renders the sentence ungrammatical, as shown in (56b-c).)

- (56) a. A tanár tegnap az órán minden kérdést megválaszolt
 Det teacher yesterday Det class-on every question-Acc Perf-answered
 “Yesterday in class the teacher answered every question”

- (i) a. * Nagmamahal ang kanyang_i ama ng bawat anak_i
 NomP.love Det his-Lnk father Det every child
 “His_i father loves every child_i”
- b. ? Minamahal ng kanyang_i ama ang bawat anak_i
 AccP.love Det his-Lnk father Det every child
 “Every child_i, his_i father loves”

- b. * A tanár *minden kérdést* tegnap az órán megválaszolt
 c. * Tegnap az órán *minden kérdést* a tanár megválaszolt

Szabolcsi (1997), adapting Beghelli & Stowell's (1994, 1997) theory of quantifier scope as feature-driven movement to functional specifiers, identifies the QP position in Hungarian as the specifier of DistP, a projection in which distributive QPs (*each* and *every* phrases) are licensed. This DistP projection is located outside the predicate phrase, but below the topic position:

(57) [TopP a tanár tegnap az órán [DistP *minden kérdést* [PredP megválaszolt]]]

Adapting the Hungarian structure to Malagasy, we might argue that externalized QPs do not target the specifier of TopP, but the specifier of DistP (presumably located in between TopP and PivP). If we can determine a principled reason to rule out reconstruction from SpecDistP, while allowing reconstruction from SpecTopP, then the absence of weak crossover in (54b)/(55b) can be explained straightforwardly. Turning to Hungarian for comparison, note that movement of an object QP to the specifier of DistP over a subject containing a pronoun fails to result in a weak crossover violation (Anna Szabolcsi, p.c.):

- (58) a. Minden fiút meglátogatott az apja
 every boy-Acc Perf-visited Det father-3s
 "Every boy_i, his_i father visited t_i"
- b. Semelyik férfit se akarom, hogy látogassa a felesége
 neither man-Acc Neg want-1s that visit-Subj-3s Det wife-3s
 "Neither man_i, I want his_i wife to visit t_i"

Unfortunately, A'-movement in Hungarian is notoriously immune to weak crossover, as shown by the acceptability of *wh*-questions such as (59) (Kiss 1994). It is thus unclear what significance the Hungarian facts might have for our analysis of Malagasy. Nevertheless, it is worth pursuing the possibility that quantified EAs in Malagasy occupy a different position from that of referential EAs, which may in turn hold the key to explaining their distinct behavior with respect to reconstruction.

- (59) Kit szeret az anyja?
 who-Acc loves Det mother-3s
 "Who_i does his_i mother love t_i?"

An alternative strategy for capturing the absence of weak crossover in (54b)/(55b) is to invoke null operator movement: Suppose that EAs do not raise to the specifier of TopP, but are base-generated there, and receive their θ -roles via coindexation with a null operator in the specifier of PivP. Under this analysis (54b), repeated here as (60a), would have the structure in (60b).²³

²³ This is essentially the same structure that Rizzi (1997) posits for topicalization in English and Dutch, although he refers to the PivP projection as Fin(iteness)P (cf. (28a-b) above).

- (60) a. (?) Novangian'ny rainy_i ny...mpianatra tsirairay_i omaly
 Pst-DatP.visit-Det father-3 Det student each yesterday
 "Each student_i, his_i father visited yesterday"
- b. [TopP each student_i [PivP Op_i [TP his_i father visited t_i]]]

Null operators generally behave like overt wh-phrases in terms of their movement properties (e.g., they obey the same island conditions as wh-phrases; Chomsky 1977). However, as Lasnik & Stowell (1991) have demonstrated, null operators differ from overt wh-phrases in that they fail to trigger weak crossover effects when they raise over a c-commanding argument constituent containing a pronoun—or, if they do trigger crossover effects, these effects are less pronounced than with overt wh-movement ("weakest crossover"). Compare the following examples: In wh-questions such as (61), the wh-phrase fails to bind the pronoun which it has raised over. However, a null operator may bind a pronoun in *tough*-movement constructions, as shown in (62a). This holds even if the null operator is coindexed with a non-referential QP, as in (62b). ((These examples are perhaps slightly marginal, but crucially they are much better than (61).))

- (61) * Which boy_i did his_i mother talk to t_i ?

- (62) a. (?) Dennis_i is easy [CP Op_i for his_i mother to talk to t_i]
 b. (?) Every boy_i is easy [CP Op_i for his_i mother to talk to t_i]

Weak crossover effects are similarly absent (or nearly absent) in parasitic gap constructions, which, according to the standard analysis, involve an operator-variable chain in the adverbial clause coindexed with the A'-chain in the matrix clause (63a) (Contreras 1984, Chomsky 1986). Finally, weak crossover effects are absent in English contrasting fronting constructions, as shown in (63b), which Chomsky (1977) and others have argued to contain a null operator coindexed with a base-generated topic.

- (63) a. (?) Which boy_i did you see t_i before [CP Op_i his_i mother had talked to t_i] ?
 b. Dennis_i, Op_i his_i mother loves t_i more than anyone

Why do null operators differ from overt wh-phrases in this respect? Lasnik & Stowell capture the contrast between (61) and (62)–(63) by arguing that weak crossover effects only arise when the A'-movement involves a 'true' quantifier—that is, an expression which ranges over a set of individuals. Null operators, unlike wh-phrases, are not true quantificational expressions: A null operator does not range over a set; instead, its reference is strictly determined by the antecedent with which it is coindexed. (Lasnik & Stowell suggest that null operators are the covert equivalent of *epithets*—elements which function like R-expressions for purposes of binding, but which are referentially dependent on a discourse antecedent, much like pronouns.) Since null operators are non-quantificational, no weak crossover effect results when an argument phrase containing a pronoun c-commands the trace of the operator, even if the antecedent of the operator is a quantificational expression, as in (62b) and (63a).

While adopting an operator-movement analysis of externalization would help us explain the absence of weak crossover effects, it would also force us to reconsider the data in 3.2.1: Recall that referential EAs are interpreted in their predicate-internal positions for purposes of

binding. I described this fact in terms of reconstruction (referential EAS reconstruct into their predicate-internal positions by LF). However, if the EA is actually base-generated outside the predicate and coindexed with a null operator, then it could not literally reconstruct into the predicate at LF. We would thus have to amend our theory of binding so as to allow a constituent to be interpreted in the trace position of a null operator with which it is coindexed (at least in certain structural contexts). Barss (1984, 1986) proposes just such an amendment to account for connectedness effects in a variety of constructions, such as clefts (64). (On the structure of clefts, cf. Chomsky 1977, 1981, Rochemont 1986, Heggie 1993, et al.)

- (64) a. It was herself_i [Op_i that Joan_i most wanted to blame t_i]
 b. (?) It is always her_i latest movie [Op_i that each actress_i wants to talk about t_i]

Barss argues that if the antecedent of a null operator occupies an A'-position (here understood to include both operator positions and predicate positions), it may form a composed A'-chain with that operator and its trace(s); thus in (64a), *herself* forms a single A'-chain with *Op* and its trace. The fact that *herself* may be bound by *Joan* is explained under Barss's reformulation of binding theory in terms of *binding paths*: Briefly, a DP may bind an anaphor if it is the closest potential c-commanding antecedent of a member of a chain containing the anaphor. *Joan* is the closest c-commanding antecedent of the trace of the operator, and may thus bind *herself*, since *herself* and the trace are part of the same composed A'-chain. (See Barss 1986 for a detailed discussion of binding paths and connectedness effects.)

However we choose to resolve the problems raised in this section, it is important to note that they are not specific to externalization in Malagasy. Other types of topicalization movements show reconstruction effects but fail to trigger weak crossover, including topic-fronting in German, which I showed in 3.1.2 to be very similar to externalization in many respects. Consider (65)–(68) below, where the Malagasy sentences in (52) and (54) are compared with their German equivalents.²⁴ As we see in (65)–(66), binding by a quantified subject of a possessive pronoun within the direct object is preserved when the object is topicalized/externalized over the subject, showing that the object reconstructs into the domain of the subject in both languages:

- (65) a. Namangy ny rainy_i ny...mpianatra tsirairay_i omaly
 Pst-NomP.visit Det father-3 Det student each yesterday
 "Each student_i visited his_i father yesterday"
 b. Jeder.....Student_i hat gestern seinen_i Vater besucht
 every.Nom student has yesterday his.Acc father visited
 "Every student_i visited his_i father yesterday"
- (66) a. Novangian'ny mpianatra tsirairay_i ny...rainy_i omaly
 Pst-DatP.visit-Det student each Det father-3 yesterday
 "His_i father, each student_i visited yesterday"

²⁴ Thanks to Hubert Haider, Roland Hinterhölzl, and Jörg Rhiemeier (p.c.) for providing the German judgements. On the absence of weak crossover effects with German topicalization, see Haider (1988), Frey (1990).

- b. Seinen_i Vater hat jeder Student_i gestern besucht
 his.Acc father has every.Nom student yesterday visited
 “His_i father, every student_i visited yesterday”

In (67)–(68) we see that in German, as in Malagasy, promotion of a quantified object over a subject containing a pronoun produces an ‘anti-weak crossover’ effect: In the sentences in (67), where a subject containing the pronoun is the topic/EA and the quantified object is within the predicate, the bound variable reading of the pronoun is disallowed. However, when the quantified object raises over the subject to the topic/EA position, the bound variable reading becomes available (68).

- (67) a. * Namangy ny mpianatra tsirairay_i ny rainy_i omaly
 Pst-NomP.visit Det student each Det father-3 yesterday
 “His_i father visited each student_i yesterday”
- b. * Sein_i Vater hat gestern jeden Studenten_i besucht
 his.Nom father has yesterday every.Acc student.Acc visited
 “His_i father visited every student_i yesterday”
- (68) a. (?) Novangian’ny rainy_i ny mpianatra tsirairay_i omaly
 Pst-DatP.visit-Det father-3 Det student each yesterday
 “Each student_i, his_i father visited yesterday”
- b. Jeden Studenten_i hat gestern sein_i Vater besucht
 every.Acc student.Acc has yesterday his.Nom father visited
 “Every student_i, his_i father visited yesterday”

This ‘anti-weak crossover’ effect is also attested in other Germanic languages, such as Icelandic. According to Richards (2000), who cites Rögnvaldsson & Thráinsson (p.c.), in a sentence with a quantified object and a subject containing a pronoun, the bound reading of the pronoun is improved if the object raises over the subject to the preverbal topic position, as in (69).²⁵

²⁵ Interestingly, as Lee & Santorini (1994) observe, and as my own consultations with native speakers confirm, topicalization in Dutch *does* exhibit weak crossover effects. This is shown by examples such as (i), which is ungrammatical under the intended reading (the absence of overt case-marking on non-pronominal DPs in Dutch makes the sentence potentially ambiguous). This inconsistency shows that topicalization in the Germanic languages is not a unified phenomenon. I leave the task of sorting out the interaction between topicalization and reconstruction in Germanic for future research.

- (i) Iedere student heeft gisteren zijn vader bezocht
 every student has yesterday his father visited
ok “Every student_i visited his_i father yesterday” (iedere student = subject)
 * “Every student_i, his_i father visited (him) yesterday” (iedere student = topicalized object)

- (69) a. * Foreldrar hans_i kenna sérhverjum stráki_i að keyra
 parents his teach every(Acc) boy(Acc) Comp drive.Inf
 “His_i parents teach every boy_i how to drive”
- b. ? Sérhverjum stráki_i kenna foreldrar hans_i að keyra
 every(Acc) boy(Acc) teach parents his Comp drive.Inf
 “Every boy_i, his_i parents teach how to drive”

The point of the preceding discussion is that, while the absence of weak crossover effects is a characteristic property of A-movement, there are also certain types of A'-movement (null operator movement in English, overt *wh*-movement in Hungarian, fronting in German and Icelandic V2 clauses, etc.) which fail to exhibit weak crossover effects. As a consequence, although some explanation must eventually be offered for the absence of weak crossover in Malagasy externalization, the mere fact that it is absent cannot be taken as counterevidence to my claim that EAs occupy an A' topic position. In fact, quite the contrary: That EAs exhibit the exact same binding paradox as German and Icelandic topics (reconstruction of anaphors and non-quantificational R-expressions, but no weak crossover) reinforces my claim that these elements occupy the same structural position.

For the sake of simplicity, I will continue to assume that the EA is base-generated inside the predicate phrase and raises to the specifier of TopP, as argued in 3.1, setting aside the absence of weak crossover effects as an unresolved problem. However, the refinements to this story which I propose in the remainder of chapter 3, and in chapter 4, are equally compatible with the alternative approaches discussed in this section.

3.3. Externalization out of embedded clauses

In addition to the binding facts discussed in 3.2, a second major piece of evidence for treating the external argument as an A'-element involves externalization out of embedded clauses. As I will show below, promoting an argument of an embedded clause to the matrix EA position imposes restrictions on the voice of both the embedded verb and the matrix verb: Specifically, the embedded verb agrees in voice with the extracted argument, while the matrix verb agrees in voice with the embedded clause out of which extraction takes place (cf. the discussion in 3.1.2). We may express this pattern by means of the following informal generalization:

- (70) An argument may be extracted from an embedded clause if and only if that clause has been made the pivot of the next higher verb.

Under an A-movement theory of externalization, in which the EA/pivot is analyzed as a subject occupying a nominative case position, (70) entails that subextraction from a clause is possible only if that clause is a subject. Given that subject clauses are strong islands for extraction in other languages, it is highly unexpected that Malagasy should have such a restriction. On the other hand, if we treat externalization as a type of A'-movement, then the voicing restriction in (70) can be satisfactorily explained in terms of *clausal pied-piping*, of a type found in long-distance *wh*-movement and partial *wh*-movement constructions in a variety of languages.

In 3.3.1, I present the relevant data on long-distance extraction, deriving a more refined version of the generalization in (70). Then in 3.3.2, I discuss how (70) bears on the choice be-

tween the A-movement and A'-movement analyses of externalization, and develop an analysis of long-distance externalization which appeals to clausal pied-piping.

3.3.1. Long-distance externalization and voicing restrictions

Consider sentences such as (71a-b), in which the verb *hever* “think” selects an experiencer DP subject *Rakoto* (bearing abstract nominative case) and a CP complement headed by *fa* “that”.²⁶

- (71) a. Mihevitra Rakoto [*fa* namangy ny dadany ny...mpianatra]
 NomP.think Rakoto that Pst-NomP.visit Det father-3 Det student
 “Rakoto thinks that the student visited his father”
- b. Mihevitra Rakoto [*fa* novangian’ny mpianatra ny...dadany]
 NomP.think Rakoto that Pst-DatP.visit-Det student Det father-3
 “Rakoto thinks that the student visited his father”

In (71), the subject functions as the EA as a whole, as indicated by the NomP morphology on the matrix verb, while the CP complement is extraposed. Notice that the CP contains an EA position of its own, which is filled by either the subject (71a) or the object (71b) of the embedded verb, depending on the voice morphology.

As shown in (72), it is also possible for the CP to function as the EA, in which case the verb will appear in the AccP form. This is presumably because the CP is assigned abstract accusative case by the verb, and hence promotion of the CP to the SpecPivP position (and thence to SpecTopP) triggers the insertion of AccP morphology in the specifier of AspP.²⁷

- (72) a. Heverin-dRakoto [*fa* namangy ny dadany ny...mpianatra]
 AccP.think-Rakoto that Pst-NomP.visit Det father-3 Det student
 “Rakoto thinks that the student visited his father”
- b. Heverin-dRakoto [*fa* novangian’ny mpianatra ny...dadany]
 AccP.think-Rakoto that Pst-DatP.visit-Det student Det father-3
 “Rakoto thinks that the student visited his father”

In addition to the externalization patterns in (71) and (72), there exists a third possibility, which is that one of the arguments of the embedded verb will raise to become the matrix EA, as in (73).

²⁶ Throughout this section I use *CP* as a cover term for clausal constituents headed by a C-related category (Frc or Top). Since the bracketed constituents in (71) are introduced by an overt complementizer, they are of category FrcP. For the sake of simplicity, I stipulate below that clauses which lack an overt complementizer are of category TopP, however this is not a crucial assumption (cf. the discussion at the end of 4.4.2, where I posit the existence of null complementizers for certain kinds of embedded clauses, and suggest a mechanism for licensing them).

²⁷ Another possibility is that the verb assigns accusative case to a null expletive which is coindexed with the CP, and that it is the expletive which raises to the EA position in (72) (the CP being extraposed as it is in (71); cf. the discussion of example (12) in 2.1). In the interest of simplicity, I will disregard this possibility here.

(73a) shows externalization of the embedded subject *ny mpianatra* “the student”, while in (73b) the embedded object *ny dadany* “his father” is externalized:²⁸

- (73) a. Heverin-dRakoto [namangy ny dadany] ny...mpianatra
 AccP.think-Rakoto Pst-NomP.visit Det father-3 Det student
 “The student, Rakoto thinks (he) visited his father”
- b. Heverin-dRakoto [novangian’ny mpianatra] ny...dadany
 AccP.think-Rakoto Pst-DatP.visit-Det student Det father-3
 “His father, Rakoto thinks that the student visited”

The difference in constituency between (72), where the entire CP is outside the matrix predicate phrase, and (73), where only the extracted DP is outside the predicate phrase, is shown by the placement of the yes/no particle *ve* in these examples (74)–(75) (the rather artificial glosses in (74)–(75) are intended to bring out the structural difference between (72) and (73)):

- (74) a. Heverin-dRakoto *ve* fa namangy ny dadany ny mpianatra?
 AccP.think-Rakoto Qu that Pst-NomP.visit Det father-3 Det student
 “That the student visited his father, does Rakoto think (that)?”
- b. Heverin-dRakoto namangy ny dadany *ve* ny mpianatra?
 AccP.think-Rakoto Pst-NomP.visit Det father-3 Qu Det student
 “The student, does Rakoto think (he) visited his father?”
- (75) a. Heverin-dRakoto *ve* fa novangian’ny mpianatra ny dadany?
 AccP.think-Rakoto Qu that Pst-DatP.visit-Det student Det father-3
 “That the student visited his father, does Rakoto think (that)?”
- b. Heverin-dRakoto novangian’ny mpianatra *ve* ny dadany?
 AccP.think-Rakoto Pst-DatP.visit-Det student Qu Det father-3
 “His father, does Rakoto think that the student visited (him)?”

Notice the pattern of voice marking in (73a) and (73b). In both cases, the matrix verb occurs in the AccP form (I return to the reasons for this below), while the voice of the embedded verb varies with the abstract case of the extracted argument: In (73a) the embedded subject is extracted, and the embedded verb appears in the NomP voice, while in (73b) the embedded object is extracted, and the embedded verb appears in the DatP voice. This pattern of voice marking is

²⁸ Notice that in these examples, the complementizer *fa* is absent, and the embedded clause is not extraposed, but occurs inside the predicate phrase, to the left of the EA. Curiously, this restriction does not hold when an embedded argument is questioned or clefted, as shown in (i). I have nothing useful to say about this difference, and so I set the matter aside.

- (i) Iza no heverin-dRakoto fa namangy ny dadany?
 who Foc AccP.think-Rakoto that Pst-NomP.visit Det father-3
 “Who does Rakoto think that visited his father?”

not restricted to externalization out of embedded clauses, but is also encountered with other cases of extraction, such as *wh*-questions (76). (Cf. 2.2.4. I return to the structure of *wh*-questions in 3.4.2, where I follow Paul (1999) in analyzing them as clefts containing a null operator):

- (76) a. Iza [Op_i no heverin-dRakoto (fa) namangy t_i ny dadany] ?
 who Foc AccP.think-Rakoto that Pst-NomP.visit Det father-3
 “Who does Rakoto think visited his father?”
- b. Iza [Op_i no heverin-dRakoto (fa) novangian’ny mpianatra t_i] ?
 who Foc AccP.think-Rakoto that Pst-DatP.visit-Det student
 “Who does Rakoto think the student visited?”

In addition to extracting DPs from regular complement clauses, it is also possible to extract a DP from a control complement containing a null subject (presumably PRO). Examples are given in (77b), where the direct object of the embedded verb has raised to become the matrix EA, and (77c), where the matrix EA is interpreted as an instrumental adjunct to the embedded verb. As with (73), the matrix verb shows up in the AccP form, while the voice of the embedded verb varies depending on the case of the extracted DP, DatP in (77b) and CrcP in (77c):

- (77) a. Mikasa [hanasa ny zaza amin’ny savony] Rasoā
 NomP.intend Irr-NomP.wash Det child with-Det soap Rasoā
 “Rasoā intends [PRO to wash the child with the soap]”
- b. Kasain-dRasoā [hosasana amin’ny savony] ny...zaza
 AccP.intend-Rasoā Irr-DatP.wash with-Det soap Det child
 “The child, Rasoā intends [PRO to wash (her) with the soap]”
- c. Kasain-dRasoā [hanasana ny zaza] ny...savony
 AccP.intend-Rasoā Irr-CrcP.wash Det child Det soap
 “The soap, Rasoā intends [PRO to wash the child (with it)]”

As expected, these voice marking patterns are replicated in *wh*-questions:

- (78) a. Iza [Op_i no kasain-dRasoā hosasana t_i amin’ny savony] ?
 who Foc AccP.intend-Rasoā Irr-DatP.wash with-Det soap
 “Who does Rasoā intend to wash with the soap?”
- b. Inona [Op_i no kasain-dRasoā hanasana ny zaza t_i] ?
 what Foc AccP.intend-Rasoā Irr-CrcP.wash Det child
 “What does Rasoā intend to wash the child with?”

On the basis of the examples considered so far, we can posit the following generalization concerning voice in embedded clauses from which extraction has taken place:

- (79) In order for a DP (or null operator) to extract from an embedded clause, it must first become the pivot of the embedded verb.

In terms of the theory presented in 3.1, this means that, before moving into a higher clause, the DP must first raise from its case position to the SpecPivP position of its own clause, triggering insertion of the correct voice morphology on the verb. (It may then raise on to the SpecTopP position of its clause; see 3.3.2 for a full analysis.) SpecPivP thus acts as an escape hatch for extraction of EAs and null operators from the clause.

What is the source of the AccP marking on the matrix verb in these examples? Recall that the matrix verb also appears in the AccP form when the embedded clause as a whole is externalized, as shown in (72). I suggested that this was because the verb assigns abstract accusative case to the embedded clause. Thus, we can add the following generalization:

- (80) In order for a DP (or null operator) to extract from an embedded clause, the embedded clause must become the pivot of the matrix verb.

As evidence for (80), consider a slightly more complicated set of examples, involving externalization of an argument embedded in an object-control clause: In the (a) sentences below, the matrix subject functions as the EA, while in the (b) sentences the EA is the matrix direct object, and in the (c) sentences it is the direct object of the embedded verb:

- (81) a. Maniraka an'ilay vehivavy [mividy mofo] Rasoa
 NomP.send Obj-that woman NomP.buy bread Rasoa
 "Rasoa is sending that woman [PRO to buy bread]"
- b. Irahin-dRasoa [mividy mofo] ilay...vehivavy
 AccP.send-Rasoa NomP.buy bread that woman
 "That woman, Rasoa is sending (her) [PRO to buy bread]"
- c. Anirahan-dRasoa an'ilay vehivavy [vidina] ny...mofo
 CrcP.send-Rasoa Obj-that woman AccP.buy Det bread
 "The bread, Rasoa is sending that woman [PRO to buy (it)]"
- (82) a. Manosika anay [hividy mofo] ianareo
 NomP.push 1ex Irr-NomP.buy bread 2p
 "You are urging us [PRO to buy bread]"
- b. Atosikareo [hividy mofo] izahay
 TrnP.push-2p Irr-NomP.buy bread 1ex
 "Us, you are urging [PRO to buy bread]"
- c. Anosehanareo anay [hovidina] ny...mofo
 CrcP.push-2p 1ex Irr-AccP.buy Det bread
 "The bread, you are urging us [PRO to buy]"

First, consider the voice of the embedded verb: In the (a) and (b) sentences, where no extraction has taken place, the embedded verb is in the NomP form; while in the (c) sentences, the direct object is extracted, and the embedded verb is in the AccP form. This is what we would expect on the basis of (79), which states that an extracted DP necessarily functions as the pivot of the

clause it extracts from. Next, consider the voice of the matrix verb: In the (a) sentences, where the matrix subject is externalized, the verb is in the NomP form, as we would predict. Similarly, in the (b) sentences, where the matrix object is externalized, the verb is in one of the object-pivot forms (AccP in the case of *irak* “send” and TrnP in the case of *tosek* “push/urge”). However, notice that in the (c) sentences, where the embedded object is extracted, the verb appears in the CrcP form.

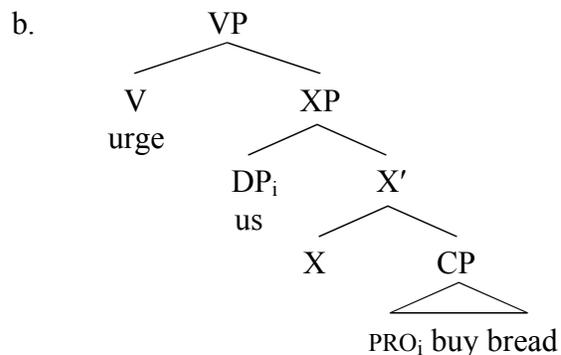
Recall from section 2.4.4 that the CrcP form is used when the EA is not a ‘core’ argument of the verb, but an underlyingly oblique element (e.g., an instrument, location, or benefactee) which maps to a derived argument position (the ‘applied object’ position) in an applicative construction. Why, then, should the extraction of a direct object from an object-control clause trigger CrcP marking on the matrix verb in (81c) and (82c)?

In the case of subject control constructions like (83a) below, the matrix verb *kasa* “intend” selects the embedded CP as the complement, and thus may be expected to assign it abstract accusative case, as I have suggested. In accordance with (80), then, the embedded clause will trigger AccP morphology on *kasa* when one of the embedded arguments is extracted, as shown in (83b).

- (83) a. Mikasa [hanasa ny zaza amin’ny savony] Rasoa
 NomP.intend Irr-NomP.wash Det child with-Det soap Rasoa
 “Rasoa intends [PRO to wash the child with the soap]”
- b. Kasain-dRasoa [hosasana amin’ny savony] ny...zaza
 AccP.intend-Rasoa Irr-DatP.wash with-Det soap Det child
 “The child, Rasoa intends [PRO to wash (her) with the soap]”

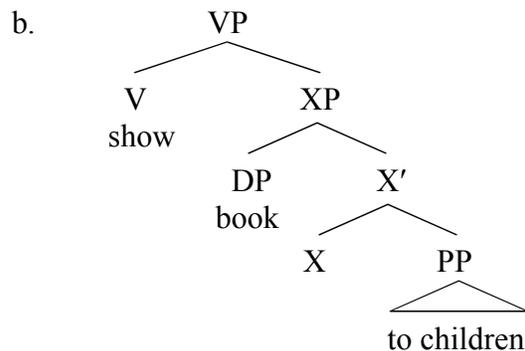
However, in the object-control construction in (84a), there is arguably no direct selectional relation between the matrix verb and the embedded clause: Traditionally, object-control verbs like *tosek* “urge” were analyzed as subcategorizing for two complements, a nominal direct object and a CP. However, this analysis is no longer available under the Minimalist framework, which assumes strict binary branching (cf. Kayne 1984). Mulder (1992) argues that in object control predicates the embedded CP is the complement of a small clause head X^0 , which takes the controlling object as its specifier, as in (84b).

- (84) a. Manosika any hividy mofo ianareo
 NomP.urge 1ex Irr-NomP.buy bread 2p
 “You are urging us to buy bread”



(84b) is essentially identical to the structure which Mulder posits for ditransitive predicates, with the object control clause occupying the same structural position as the goal PP:

- (85) a. Manaseho ny boky amin'ny ankizy ny vehivavy
 NomP.show Det book to-Det children Det woman
 “The woman is showing the book to the children”

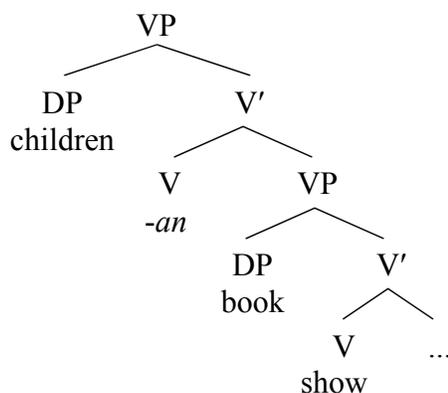


Interestingly, the promotion of a goal PP to the EA position triggers CrcP morphology on the verb, as discussed in 2.2.3. Compare the example in (86) with (85a):

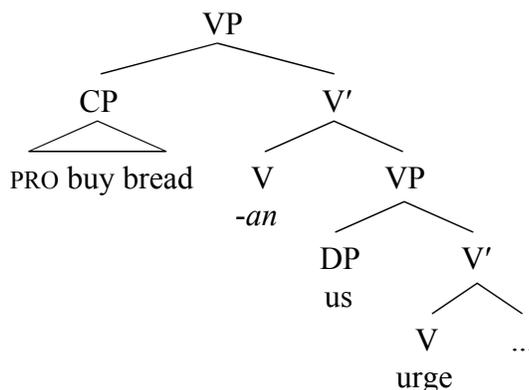
- (86) Anasehoan'ny vehivavy ny boky ny...ankizy
 CrcP.show-Det woman Det book Det children
 “The children, the woman is showing the book (to them)”

In 2.4.4, I argued that the CrcP suffix *-an* is an applicative morpheme, which projects a VP shell structure. This VP contains a DP in its specifier (the *applied object*), which denotes a recipient, instrument, benefactee, etc. of the event denoted by the lower VP shell (cf. Marantz 1993, Nkonyani 1996). Thus, in (86), the EA *ny ankizy* “the children” is mapped to the applied object position, from which it is able to raise into the C-domain, as shown in (87a). Suppose we assume, in the spirit of Mulder’s (1992) analysis, that the structure of ditransitive predicates and object-control predicates is essentially the same. It follows that object-control clauses, like recipients, may map to the applied object position (87b), from which they can raise out to become the pivot of a higher verb.

(87) a.



b.



Thus, on analogy with ditransitive constructions, we can conclude that the CrcP morphology on the matrix verb “push, urge” in (82c), repeated below as (88), is triggered by the object-control clause. This clause is generated in the applied object position, and then raises to become the pivot of the matrix verb in order to be transparent for extraction of *ny mofo* “the bread” (as required by the condition in (80)), triggering the insertion of the CrcP suffix *-an* on the matrix verb.

- (88) Anosehanareo any hovidina ny...mofo
 CrcP.urge-2p 1ex Irr-AccP.buy Det bread
 “The bread, you are urging us to buy”

As evidence that this conclusion is on the right track, consider the examples in (89): Paul & Ranaivoson (1998) observe that it is possible to nominalize object control clauses by adding the determiner *ny*, as in (89a). Like any other DP headed by an overt determiner, this nominalized form may function as the EA of the clause containing it. Crucially, externalization of the clause triggers CrcP marking on the verb (89b):

- (89) a. Manosika any ny hiditra ianareo
 NomP.push 1ex Det Irr-NomP.enter 2p
 “You are urging us to go in”
- b. Anosehanareo any ny...hiditra
 CrcP.push-2p 1ex Det Irr-NomP.enter
 “Going in, you urge us (to do it)”

Summarizing this section, we saw that when a DP or null operator raises out of an embedded clause, certain constraints are imposed on the voice of the matrix and embedded verbs. I will refer to these constraints collectively as the *pivot restriction on extraction*, or PRE:

(90) *Pivot restriction on extraction*

Given a configuration in which a clause γ contains an embedded clause β , which in turn contains a subconstituent α ($\alpha = \text{DP}$ or null operator):

[γ V ... [β V ... α ...] ...]

If α extracts from β , conditions (i) and (ii) must be met:

- i. The abstract case of α determines the voice of the verb in β .
- ii. The abstract case of β determines the voice of the verb in γ .

In section 3.3.2, I consider the consequences of the PRE with regard to the choice between the A-movement and A'-movement analyses of externalization.

3.3.2. Long-distance externalization as clausal pied-piping

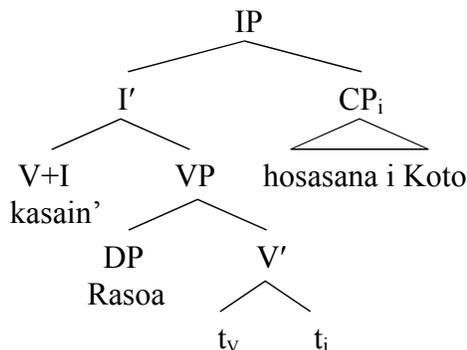
In the previous section we saw that when a DP is extracted from an embedded clause, the abstract case of that clause is identified by the appropriate voice morphology on the higher verb: If the embedded clause receives abstract accusative case from the higher verb, then the higher verb will take AccP morphology (91a). On the other hand, if the embedded clause functions as an ‘oblique’ dependent of the higher verb (comparable to the goal PP in a ditransitive predicate), as I argued in the case of object-control complements, then the higher verb will take CrcP morphology (91b):

- (91) a. Kasain-dRasoa hosasana i...Koto
 AccP.intend-Rasoa Irr-DatP.wash Det Koto
 “Koto, Rasoa intends to wash”
- b. Anirahan-dRasoa anay vidina ilay...boky
 CrcP.send-Rasoa lex AccP.buy that book
 “That book, Rasoa is sending us to buy”

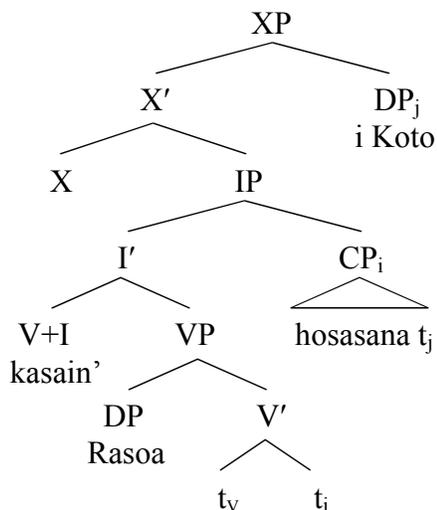
As I discussed above, Guilfoyle, Hung & Travis (1992) and other researchers treat the voice morphemes as case assigners, which license all but one of the verb’s dependents within VP, forcing the remaining dependent to raise to the specifier of IP in order to receive structural nominative case—hence, externalization is essentially the same operation as raising-to-subject in passive/unaccusative clauses in English. If this analysis is correct, then the fact that the matrix verbs in (91a-b) carry AccP and CrcP morphology, respectively, must mean that the embedded clause has been promoted to the subject position of the matrix clause. A sentence like (91a) would have the derivation in (92) below (adapting GHT’s tree structure; see 3.1.1): The DP *i Koto* first raises to become the subject of the embedded clause, triggering DatP marking on the embedded verb. Next, the embedded clause raises to become the subject of the matrix clause (92a), trig-

gering AccP morphology on the matrix verb. Finally, *i Koto* extracts from the embedded clause and raises to the specifier of some higher category XP (92b):

(92) a.



b.



Since the voice of the matrix verb is always strictly determined by the structural role of the embedded clause, we would have to assume under this theory that movement of the embedded clause to SpecIP is a necessary precondition for extraction. Thus, we are led to posit the restriction in (93) as an explanation for the PRE:

- (93) Sentential complements in Malagasy are islands for extraction, while sentential subjects are not. Thus, a CP must raise into the specifier of the closest dominating IP before any of its constituents can raise out.

Given what we know about extraction domains and island constraints in other languages, (93) seems suspicious. Sentential subjects (and complex subjects generally) almost always behave as strong islands for extraction, especially when compared with sentential complements, which tend to be transparent (Ross 1967, Huang 1982, Chomsky 1986, and many others). This is illustrated in (94a-b) for *wh*-extraction in English. The desire to explain contrasts such as these is central to Huang's *Condition on Extraction Domains*, as well as Chomsky's barriers-based account of locality and island effects. According to the CED, (94b) is bad because the subject clause is not

properly governed. According to the barriers account, (94b) is bad because the subject clause is not L-marked, and thus functions as a barrier to government of the trace by the wh-phrase.

- (94) a. Who_i is it obvious [that Daniel loves t_i]?
 b. * Who_i is [that Daniel loves t_i] obvious?

In short, by analyzing externalization as movement to a subject position, we are forced to assume that the structural conditions on islandhood are completely different in Malagasy in English. On the other hand, if we assume that externalization involves movement to an A'-position, then the PRE takes on a very different character. Instead of adopting the restriction in (93), we can explain the PRE in terms of the constraint in (95):

- (95) In order for a DP in an embedded clause to raise to the matrix EA position, it must first undergo A'-movement to the pivot position of its own clause, after which the embedded clause undergoes A'-movement to the matrix pivot position.

This recalls the phenomenon of *clausal pied-piping* in wh-questions, discussed below. Taking this observation as a starting point, I will argue for an analysis of the PRE in terms of A'-pied-piping: The predicate-external DP in (91a-b) starts out by raising from its case position through SpecPivP to the SpecTopP of the lower clause, triggering the appropriate voice marking on the embedded verb. It then pied-pipes the embedded clause, which raises from its case position to the SpecPivP of the higher clause, triggering voice marking on the matrix verb. Finally, the DP extracts from the embedded clause and undergoes short A'-movement to SpecTopP.

Clausal pied-piping in wh-questions is attested in a variety of languages, including Basque, Imbabura Quechua, and (with non-finite clauses only) German (Ortiz de Urbina 1989, 1993, Cole 1982, van Riemsdijk 1985, Fanselow & Mahajan 1996). Take Basque, for example: In this language, an embedded wh-phrase may establish matrix scope in one of two ways: (a) by raising into the matrix SpecCP, using the embedded SpecCP as an escape hatch (as in successive-cyclic movement in English), or (b) by raising into the embedded SpecCP and then pied-piping the embedded clause as a whole into the matrix SpecCP. In sentences with multiple embedding, this latter strategy may apply cyclically.

As an example of this construction, consider the sample derivation in (96) below, from Ortiz de Urbina (1993), in which the wh-phrase *nor* “who” is embedded in the lowest clause: Starting with the base structure in (96a), the wh-phrase first undergoes (vacuous) movement to the SpecCP of its own clause. There, according to Ortiz de Urbina, it discharges its [wh] feature onto the CP as a whole, transforming the latter into a wh-operator. That CP then raises into the specifier of the next higher CP, producing the intermediate structure in (96b). (Note that Basque has verb-second order in wh/focus-fronting constructions, possibly the result of T-to-C movement; hence the verb-auxiliary cluster *uste duela* “thinks” inverts with the subject of the intermediate clause, *Jonek* “John”.) At this point, the [wh] feature is discharged onto the intermediate CP, which then raises into the matrix SpecCP to check the [wh] feature on C (again triggering inversion of the verb-auxiliary cluster with the subject). This yields the surface structure in (96c):

- (96) a. Mirenek esan du [Jonek uste du-ela [nor etorri d-ela]]?
 Mary-Erg said Aux John-Erg think Aux-that who come Aux-that
 lit. “Mary said that John thinks that who has come?”

- b. Mirenek esan du [[nor etorri d-ela] uste du-ela Jonek] ?
 Mary-Erg said Aux who come Aux-that think Aux-that John-Erg
 lit. “Mary said who has come does John think?”
- c. [[Nor etorri d-ela] uste du-ela Jonek] esan du Mirenek?
 who come Aux-that think Aux-that John-Erg said Aux Mary-Erg
 lit. “[_{CP} [_{CP} [_{CP} Who has come] does John think] did Mary say]?”
 (i.e., “Who did Mary say that John thinks has come?”)

Clausal pied-piping in the covert syntax is also attested in *partial wh-movement* constructions in German, Hindi and Hungarian, according to the analyses proposed by Mahajan (1990, 1996), Fanselow & Mahajan (1996), and Horvath (1997). In such constructions, a *wh*-phrase within an embedded clause is construed as taking matrix scope. The matrix clause contains a semantically empty *wh*-expletive, glossed “Wh” in (97):

- (97) a. Was glaubst Du [wen sie gesehen hat] ?
 Wh believe you who she seen has
 “Who do you think she saw?”
- b. Siita-ne kyaa socaa [ki Ravii-ne kis-ko dekhaa] ?
 Sita-Erg Wh thought that Ravi-Erg who-Dat saw
 “Who did Sita think that Ravi saw?”
- c. Mit gondolsz [hogy kit látott János] ?
 Wh-Acc think-2s that who-Acc saw-3s Janos-Nom
 “Who do you think that Janos saw?”

According to the traditional analysis of partial *wh*-movement, based primarily on data from German, the *wh*-expletive is base-generated in the matrix SpecCP position, where it checks the [wh] feature on C. At LF, the expletive is replaced by the embedded *wh*-phrase, ensuring that the latter is interpreted with matrix scope. However, Fanselow & Mahajan and Horvath argue convincingly that the *wh*-expletive is base-generated in a case-position, and takes the embedded clause as a whole, rather than the *wh*-phrase, as its associate (cf. also Dayal 1994).²⁹ Under this theory, *was* in (97a) constitutes the [wh] equivalent of the expletive *es* in (98):

²⁹ As evidence that the expletive is generated in a case-position, Horvath notes that the morphological case form of the *wh*-expletive in Hungarian is lexically determined by the matrix verb—and may be different from the case form of the embedded *wh*-phrase, which is determined by the embedded verb. Compare the following examples, containing the verb “say” (which assigns accusative case to its object) and “expect, count on” (which assigns allative case to its object):

- (i) a. Mit mondtál, hogy mire számítanak a gyerekek?
 Wh-Acc say-2s that what-All count-3s the kids-Nom
 “What did you say the kids expected?”

- (98) Ich konnte es_i nicht glauben, [dass Maria ihn liebt]_i
 I could it not believe-Inf that Maria him loves
 “I couldn’t believe that Maria loves him”

Deriving a matrix interpretation for the embedded wh-phrases in (97) involves a two-step process: Starting from the base structure in (99a), the wh-expletive and the embedded wh-phrase each raise to the SpecCP position of their respective clauses (99b) (this step happens overtly in German and Hungarian, and covertly in Hindi). The embedded clause then raises to replace the expletive, producing the LF structure in (99c). Notice that (99c) closely parallels the surface structure configuration in the Basque example (96c).

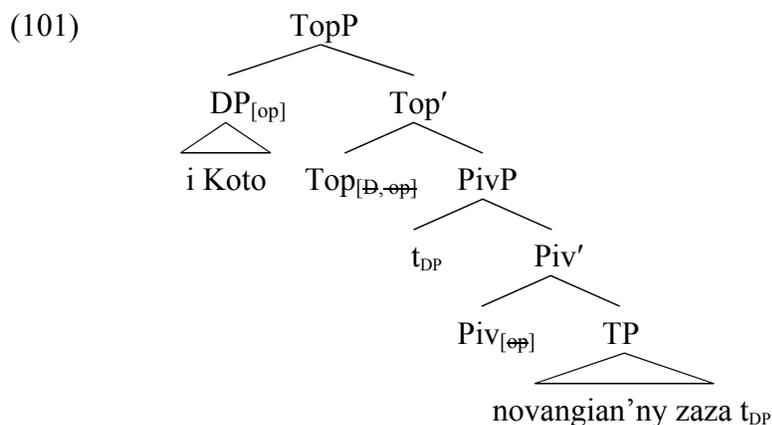
- (99) a. [CP you thought Wh_i [CP she has seen who]_i]
 b. [CP Wh_i did you think t_i [CP who_j has she seen t_j]_i]
 c. [CP [CP who_j has she seen t_j]_i did you think t_i]

Here I will assume that long-distance externalization in Malagasy also involves clausal pied-piping: When a DP in an embedded clause raises to become the matrix external argument, it first undergoes A'-movement to the pivot position of its own clause, after which the clause as a whole undergoes A'-movement to the pivot position of the matrix clause. To see how this analysis derives the effects of the PRE in (90) above, consider the examples in (100a-b), in which a DP raises to the matrix EA position from inside a complement clause:

- (100) a. Heveriko novangian'ny zaza iKoto
 AccP.think-1s Pst-DatP.visit-Det child Det Koto
 “Koto, I think the child visited (him)”
- b. Kasain-dRasoahosasana iKoto
 AccP.intend-Rasoahosasana Irr-DatP.wash Det Koto
 “Koto, Rasoahosana intends to wash (him)”

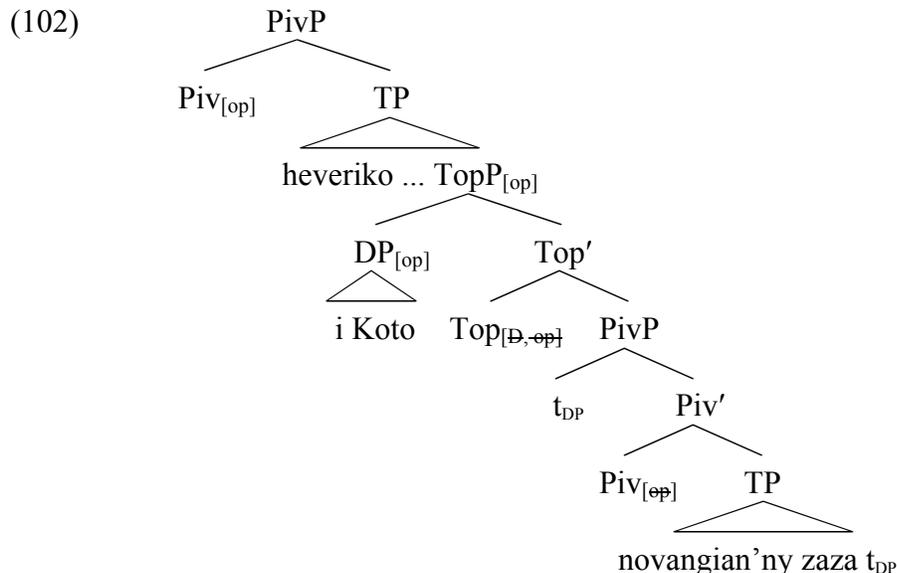
The derivation of these sentences proceeds as follows (here I abstract away from surface word order; cf. footnote 30): Starting from the embedded object position, the DP i Koto, which was assigned an interpretable scope feature [op] in the numeration, raises to the SpecPivP of the embedded clause to check the uninterpretable [op] feature on Piv. This move triggers DatP marking on the embedded verb. The DP then raises on to the embedded SpecTopP position to check the [D] and [op] features of Top, resulting in the structure in (101):

-
- b. *Mire* számítasz, hogy *mit* fognak mondani a gyerekek?
 Wh-All count-2s that what-Acc will-3s say-Inf the kids-Nom
 “What do you expect the kids will say?”



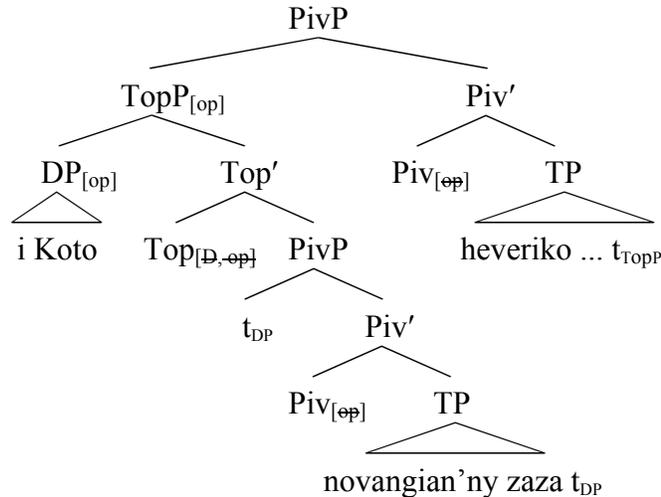
Suppose that once the DP has raised to the specifier of TopP, TopP inherits its [op] feature by means of spec-head agreement (cf. Moritz & Valois 1994, who propose that other scope-related features such as [wh] and [neg] may be inherited in this way). Suppose also that the structure in (101) may be selected by the matrix verb directly, without the need for a FrcP layer. These assumptions are sufficient to ensure that the voice of the matrix verb will be determined by the embedded clause.

We may skip ahead to the point in the derivation shown in (102) below: After the structure in (101) has combined with the verb *hever* “think” to form the matrix VP, and the matrix TP structure has been built on top of this, Piv (containing an uninterpretable [op] feature) merges with TP to form PivP.



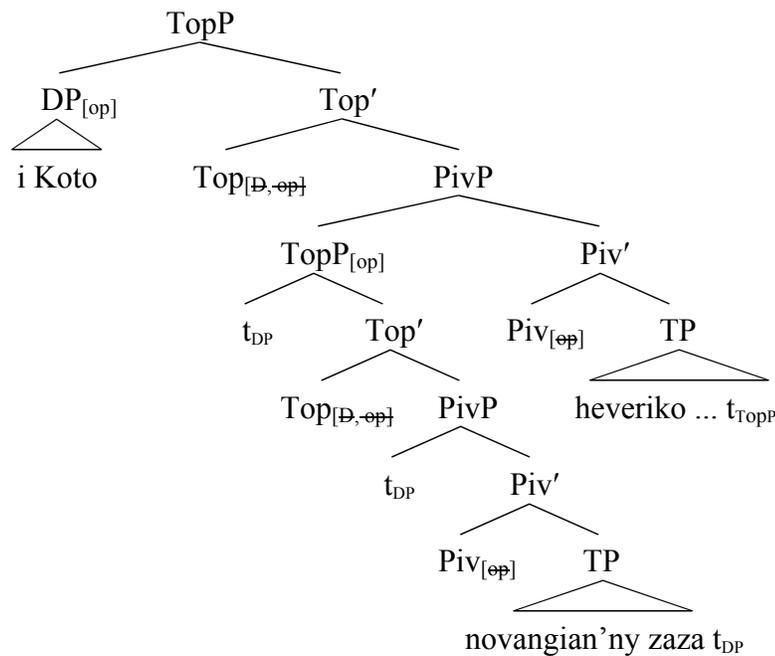
In order to check its [op] feature, Piv attracts the closest constituent containing a compatible feature. This constituent is the embedded TopP, which inherited an [op] feature from the DP in its specifier. The embedded TopP thus raises to become the specifier of the matrix PivP, as shown in (103). Since the TopP is assigned abstract accusative case, the raising of this constituent to SpecPivP triggers AccP marking on the matrix verb.

(103)



Finally, the structure in (103) merges with Top to form TopP. Top has [D] and [op] features which need to be checked, and so it attracts the closest constituent containing compatible features, namely the DP in the specifier of the embedded TopP, which then raises to become the specifier of the matrix TopP (and hence the EA of the matrix clause). The resulting structure is shown in (104).³⁰

(104)



³⁰ I revisit this derivation in 4.2.1, where I show how the correct surface word order is achieved by means of XP-movement. Briefly, I argue that TP raises to become the outer specifier of PivP (ensuring that *heveriko* will end up to the left of *novangian'ny zaza*), after which PivP raises to become the outer specifier of TopP (ensuring that *heveriko novangian'ny zaza* will end up to the left of *i Koto*).

How do we know that the DP extracts from the embedded TopP, rather than pied-piping the TopP to the matrix EA position? Recall that the external argument is separated from the embedded predicate phrase by the particle *ve* in yes/no questions, showing that it does not form a constituent with the embedded clause:

- (105) Heverinao novangian'ny zaza ve i.....Koto?
 AccP.think-2s Pst-DatP.visit-Det child Qu Det Koto
 “Koto, do you think the child visited (him)?”

I take this as evidence that it extracts from the embedded clause after the latter has pied-piped to the specifier of PivP. Thus, in order to derive both the correct surface constituency and the effects of the PRE, we must assume that long-distance externalization involves a combination of pied-piping and successive-cyclic movement: The EA pied-pipes the complement clause to the matrix SpecPivP, and undergoes spec-to-spec raising from the embedded SpecTopP to the matrix SpecTopP.

The fact that movement to SpecPivP triggers pied-piping while movement to SpecTopP does not is predicted by the theory in 3.1, according to which movement to SpecPivP is required to check a scope-related feature [op], while movement to SpecTopP is required to check both an [op] feature and a [D] feature: While there is considerable cross-linguistic evidence that scope-related features may be transmitted under spec-head agreement, the same is not true of categorial features such as [D]. Consequently, when the EA raises to the specifier of the embedded TopP, TopP inherits its [op] feature, but not its [D] feature. Thus, when the matrix Top attracts a constituent to satisfy its [D] and [op] features, it will attract the EA rather than the embedded TopP, since only the EA is capable of checking both features of the matrix Top in a single step.

To summarize: In 3.3.1 I observed that when a DP is extracted from an embedded clause, the DP determines the voice of the embedded verb, while the clause from which it is extracted determines the voice morphology of the next higher verb (the PRE). In this section I argued that the PRE is most easily accommodated under a theory which treats externalization as A'-movement. If externalization were A-movement to SpecIP, as in Guilfoyle et al. (1992), then we would need to stipulate that sentential complements in Malagasy are strong islands for extraction while sentential subjects are transparent—the opposite of what standard accounts of extraction would lead us to expect. On the other hand, if we regard externalization as a form of A'-movement, then the PRE can be understood in terms of *CP pied-piping*. Since CP pied-piping in wh-movement constructions is well attested in other languages, I conclude that this second analysis is the more conceptually appealing. Thus the data presented in this section may be taken as further evidence, together with the binding evidence in 3.2, for treating the external argument as an A'-element rather than a subject.

3.4. Voicing restrictions reconsidered

An important consequence of the analysis developed in 3.1, according to which externalization targets a position in the C-domain, is that it offers a simple way to account for the voicing restrictions discussed in section 2.2.4. Recall that, although normally any semantically appropriate noun phrase may function as the pivot of a given verb, there are certain constructions involving A'-extraction in which the choice of pivot is syntactically determined. In this section, I discuss

several such constructions, and show that they all exemplify the descriptive generalization in (106):

- (106) In clauses containing a *wh*-operator bearing abstract case, the case of the chain necessarily determines the voice morphology on the verb.

In other words, if a clause contains a *wh*-operator of category DP, that operator invariably functions as the pivot of the clause. As I will argue in 3.4.1, the fact that case-bearing *wh*-operators must be pivots is consistent with the A'-movement theory of externalization argued for in this chapter. By contrast, if we were to adopt an A-movement theory of externalization, we would need to posit language-specific constraints on A'-extraction in order to explain the voicing restrictions described here, constraints which are difficult to reconcile with what we know about A'-extraction in other languages.

3.4.1. Operator movement blocks externalization: Relative clauses

A straightforward example of the constraint in (106) involves relative clause constructions. As Keenan (1972, 1985) establishes, the voice of the verb in the relative clause is in strict correlation with the grammatical role of the participant being relativized. I give examples of this below.

Relative clauses follow the head noun, and are optionally introduced by the element *izay*, which I analyze as an all-purpose *wh*-operator (glossed “Wh”).³¹ As (107) shows, if the participant being relativized corresponds to the subject of the verb in the relative clause, then the verb appears in the NomP form. Using any other voice form renders the construction ungrammatical.

³¹ My analysis of *izay* as an operator (rather than, say, a complementizer) reflects the fact that it may also be used to introduce embedded *wh*-questions:

- (i) a. Fantatro [*izay* namono ny akoho]
 known-Lnk-1s Wh Pst-NomP.kill Det chicken
 “I know who killed the chicken”
- b. Fantatro [*izay* novonoin’ny mpamboly]
 known-Lnk-1s Wh Pst-AccP.kill-Det farmer
 “I know what the farmer killed”

Although *izay* as a relative clause marker is normally characterized as optional, its distribution does appear to be influenced by the semantics of the relative clause. Consider the examples in (ii), in which the embedded verb is in the non-past tense. Here the presence of *izay* forces a generic/habitual construal of the relative clause, while the absence of *izay* favors a present tense construal. This suggests that relative clauses headed by *izay* denote general properties, while relative clauses which do not contain *izay* denote specific, situationally-conditioned attributes.

- (ii) a. ny vehivavy [manasa lamba]
 Det woman NomP.wash clothes
 “the women who are washing clothes (now)”
- b. ny vehivavy [*izay* manasa lamba]
 Det woman Wh NomP.wash clothes
 “the women who wash clothes”

- (107) a. ny mpamboly [(izay) *namono* ny akoho tamin'ny antsy]
 Det farmer Wh Pst-NomP.kill Det chicken Pst-with-Det knife
 “the farmer who killed the chicken with the knife”
- b. * ny mpamboly [(izay) *novonoina* tamin'ny antsy ny...akoho]
 Det farmer Wh Pst-AccP.kill Pst-with-Det knife Det chicken
 “the farmer who killed the chicken with the knife”
- c. * ny mpamboly [(izay) *namonoana* ny akoho ny...antsy]
 Det farmer Wh Pst-CrcP.kill Det chicken Det knife
 “the farmer who killed the chicken with the knife”

Similarly, if the relativized noun corresponds to the object of the verb in the relative clause, then one of the object-pivot forms will be used (here the AccP form) (108); and if the relativized noun corresponds to a peripheral participant in the relative clause, such as the instrument of the action, then the embedded verb must be in the CrcP form (109):

- (108) a. * ny akoho [(izay) *namono* tamin'ny antsy ny...mpamboly]
 Det chicken Wh Pst-NomP.kill Pst-with-Det knife Det farmer
 “the chicken which the farmer killed with the knife”
- b. ny akoho [(izay) *novonoin'ny* mpamboly tamin'ny antsy]
 Det chicken Wh Pst-AccP.kill-Det farmer Pst-with-Det knife
 “the chicken which the farmer killed with the knife”
- c. * ny akoho [(izay) *namonoan'ny* mpamboly ny...antsy]
 Det chicken Wh Pst-CrcP.kill-Det farmer Det knife
 “the chicken which the farmer killed with the knife”
- (109) a. * ny antsy [(izay) *namono* ny akoho (tamin') ny...mpamboly]
 Det knife Wh Pst-NomP.kill Det chicken with Det farmer
 “the knife that the farmer killed the chicken with”
- b. * ny antsy [(izay) *novonoin'ny* mpamboly (tamin') ny...akoho]
 Det knife Wh Pst-AccP.kill-Det farmer with Det chicken
 “the knife that the farmer killed the chicken with”
- c. ny antsy [(izay) *namonoan'ny* mpamboly ny akoho]
 Det knife Wh Pst-CrcP.kill-Det farmer Det chicken
 “the knife that the farmer killed the chicken with”

Following standard analyses of relative clauses in other languages, I will assume here that the gap in the relative clause is an A'-trace of *izay*—or, in clauses where *izay* is absent, the trace of a phonetically null wh-operator. I will also assume that *izay*/Op is located in the specifier of a high C-projection, from which position it is coindexed with the relativized noun phrase, as shown schematically in (110):

(110) [DP_i [CP izay/Op_i ... [TP ... t_i ...]]]]

Presumably, then, the voicing restrictions on the embedded verb in (107)–(109) are due to the presence of an operator-variable chain in the clause: The operator necessarily functions as the pivot of the relative clause, triggering the appropriate voice marking on the verb. Because the operator is coindexed with the relativized noun phrase, this produces the impression that the relativized noun phrase is acting as the pivot.

Why is the operator required to be the pivot of the clause it extracts from? Presumably this is because operators possess some property which forces them to move to (or through) the structural position in which pivots are licensed, thereby blocking the other DPs in the clause from raising into this position. I will refer to this informally as the *blocking effect*:

(111) *The blocking effect*

Movement of a [+specific] DP to the pivot position of its clause is blocked by the presence of a wh-operator

The most straightforward way to understand this is to assume that operators must move to (or through) the pivot position. Recall that Keenan (1976), Guilfoyle, Hung, & Travis (1992), et al., equate the pivot with the subject of the clause (voice morphology indicates the grammatical function of the subject). Hence, in order to explain the blocking effect, these authors must assume that operators are required to pass through the subject position (which GHT identify as SpecIP) in order to reach their licensing position in the C-domain. This assumption is typically expressed in the form of a language-specific constraint on extraction:

(112) In Malagasy, only subjects may undergo A'-extraction

(112) allows configurations like (113a), in which the operator raises through SpecIP to SpecCP, but rules out configurations like (113b), in which the operator raises over an overt EA in SpecIP:

(113) a. [CP Op_i C⁰ [IP t_i [I' ... t_i ...]]]
 b. * [CP Op_i C⁰ [IP EA [I' ... t_i ...]]]

If only subjects can undergo A'-extraction, then relativization of a logical direct object will be possible only if the verb is first 'passivized'—i.e., only if the object is promoted to SpecIP using object-pivot morphology. According to this approach, then, a central function of the voicing system within the grammar of Malagasy is to promote underlying direct objects and other arguments to the subject role, allowing them to undergo relativization, etc., without violating the constraint in (112).

However, this approach to the blocking effect is problematic from the perspective of a general theory of movement and islandhood. If we accept the stipulation in (112), then we are forced to conclude that the conditions which constrain A'-extraction in Malagasy are essentially the opposite of what one finds in more familiar cases such as English and Romance, in which extraction from complement positions tends to be much freer than extraction from subject posi-

tions—an observation captured by Huang’s (1982) Condition on Extraction Domains, and later by the ECP.³²

On the other hand, we can avoid the stipulation in (112) and the conceptual problems it entails if we suppose that externalization is a form of A'-movement similar to topicalization, as I argued in 3.1. The ability of wh-movement to block topicalization is well known from Germanic languages such as English and Icelandic (114)–(115):

- (114) a. This book, I borrowed from Dennis.
 b. Who did you borrow this book from?
 c. * Who did, this book, you borrow from?
 * Who, this book, did you borrow from?
 ?* This book, who did you borrow from?
- (115) a. Bókina hefur Steingrímur gefið Mariu
 book-the.Acc has Steingrimur.Nom given Maria.Dat
 “The book, Steingrimur has given to Maria”
 b. Hverjum hefur Steingrímur gefið bókina?
 who.Dat has Steingrimur.Nom given book-the.Acc
 “To whom has Steingrimur given the book?”
 c. * Hverjum bókina hefur Steingrímur gefið?
 who.Dat book-the.Acc has Steingrimur.Nom given
 “To whom, the book, has Steingrimur given?”

Here I will argue that the blocking effect in (111) results from the fact that wh-operators compete with potential EAs to occupy the specifier of PivP. Recall my two-step feature-checking analysis of externalization, presented in 3.1.2: One of the [+specific] DPs in the clause is assigned an interpretable scope feature, [op]. This feature is attracted by an uninterpretable [op] feature in

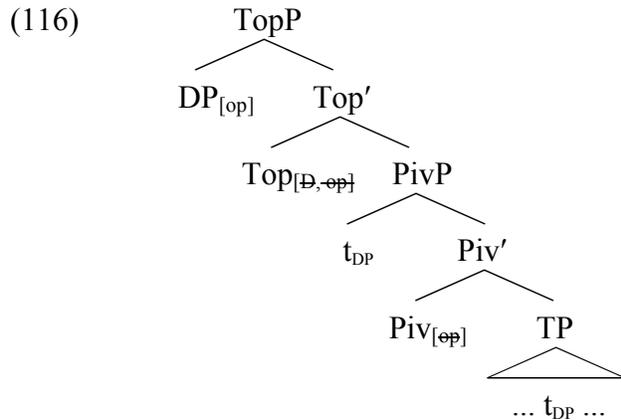
³² Nakamura (1996) attempts to derive (112) from economy principles—in particular, Shortest Move (Chomsky 1995, chapter 3). He suggests that, in choosing between the derivation in (i-a), where the operator first raises into the EA position before raising on to SpecCP, and (i-b), where the operator raises to SpecCP in a single step, crossing a filled EA position, (i-a) will be preferred on economy grounds because it involves shorter movements.

- (i) a. $[_{CP} Op_i C^0 [_{IP} t_i [_I' \dots DP t_i \dots]]]$
 b. * $[_{CP} Op_i C^0 [_{IP} DP [_I' \dots t_{DP} t_i \dots]]]$

However, this analysis is problematic, since it relies on a ‘global’ version of economy in which complete derivations are compared, rather than a ‘local’ version in which single steps in a derivation are compared.

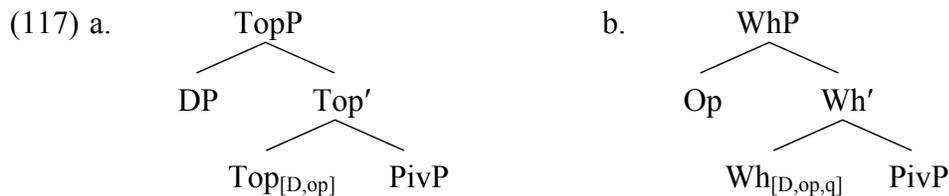
Reformulating Nakamura’s Shortest Move account in terms of the Minimal Link Condition (which states that an attracting uninterpretable feature will attract the closest compatible interpretable feature into its checking domain) does not solve this problem, since the feature which attracts EAs into SpecIP is presumably different from the feature which attracts operators into SpecCP.

the head of PivP, causing the DP to raise to SpecPivP. From this position, the DP is attracted into the specifier of TopP to check the [op] and [D] features on Top. This is illustrated in (116):



To ensure the mutual exclusivity between overt EAs and *wh*-operators, I will modify this analysis by making two additional assumptions. The first assumption pertains to the trigger for *wh*-movement. Within the Minimalist framework, it is assumed that *wh*-phrases move into the C-domain to fulfill the morphological *wh*-requirement of a C-head. Usually this requirement is depicted as a (strong) uninterpretable feature [wh] which needs to be checked against a constituent containing an interpretable [wh] feature. However, let us suppose that the *wh*-requirement actually involves two separate features, each of which needs to be checked: the question feature [q], which is checked by a quantified phrase with interrogative force, and the scopal feature [op], which is checked by an operator.

I will further assume that the projection dominating PivP comes in two ‘flavors’, depending on whether or not its head possesses a [q] feature in addition to its [op] feature: If the head contains just a [D] feature and an [op] feature, it will attract a DP into its specifier (117a). If in addition it contains a [q] feature, then it will attract a *wh*-operator of category DP into its specifier (117b). When the [q] feature is absent, I will refer to the projection in question as TopP; when the [q] feature is present, I will use the label WhP instead.



I remain neutral on the purely technical question of whether Top and Wh are one and the same category, but with different lexical requirements, or whether they are separate categories which compete to select PivP, and are thus mutually exclusive (cf. Müller & Sternefeld 1993 for a theory which assumes the latter option).³³

³³ A third alternative is that WhP and TopP may both be projected in the same clause, but that there is an independent constraint preventing the specifiers of the two projections from being filled overtly in the same clause, as Zwart

The uninterpretable [op] feature in the head of PivP may be checked either by an [op] feature on a DP, or by the [op] feature of a wh-operator. Thus, if operator movement prevents movement of any other constituent to SpecPivP, it follows that the operator will control the voice morphology on the verb. In this way we derive the blocking effect in (110) without having to resort to the conceptually unappealing stipulation that only subjects can undergo A'-extraction.

How do we ensure that wh-operators block DPs from checking the [op] feature of PivP, rather than vice versa? The solution which I will propose takes advantage of the difference in how operators and EAs receive their scope-related features: Recall that the [op] feature associated with an externalized DP is inserted in the numeration (just like the case features of the DP). By contrast, operators, which are inherently scope-bearing elements, are specified for their [op] feature in the lexicon. Given this difference, we can derive the fact that wh-operators block the movement of DPs to SpecPivP if we stipulate that the addition of an [op] feature in the numeration is subject to a Last Resort condition—that is, an [op] feature will be assigned to one of the DPs in the clause only if failure to do so would cause the derivation to crash. If there is a wh-operator present in the clause, then that operator will be able to check and eliminate the uninterpretable [op] feature of Piv, allowing the derivation to converge. If there is no wh-operator in the clause, then an [op] feature will be assigned to a DP, which will then raise to SpecPivP; failure to assign such a feature would prevent the [op] feature of Piv from being checked, and the derivation would crash. (I modify this proposal slightly in 3.4.3.)

To summarize this discussion, I have argued that the voicing restrictions discussed in 2.2.4 and illustrated in (107)–(109) receive a much simpler explanation under the A'-movement theory of externalization than under the A-movement theory. If we adopt the A-movement theory, we must stipulate that A'-extraction of subjects is allowed, while extraction of non-subjects is barred. This stipulation is problematic, given that subject/non-subject extraction asymmetries generally work in the opposite fashion in other languages. On the other hand, if we adopt the A'-movement theory, then the existence of voicing restrictions in operator-movement contexts falls out naturally: All that we need to assume is that operators compete with topic DPs for the same scope-related position in the C-domain. This kind of blocking effect is found in a number of other languages, including English and Icelandic, in which topicalization and wh-movement are mutually exclusive in the same clause (see 4.3 for additional discussion).

Having laid out the basic story, I discuss two other operations which impose voicing restrictions of the kind found in relative clauses, namely wh/focus-fronting (3.4.2) and *dia*-topicalization (3.4.3). I show that in both cases, a null wh-operator raises into the SpecPivP position, thereby controlling the voice of the verb and blocking overt DPs from undergoing externalization. Finally in 3.4.4 I discuss a complication involving the absence of blocking effects when a non-DP (typically a PP or adverbial) is being focused or *dia*-topicalized.

3.4.2. Constituent focus as clefting

Recall from 2.2.4 that in focus-fronting constructions, the focused constituent appears to function as the pivot of the verb: If the focused constituent is interpreted as the subject of the verb, then

(1993) proposes for Dutch. Although I do not reject this possibility, for the sake of simplicity I will not adopt it here. See 4.3.1, footnote 8 for discussion.

the verb must appear in the NomP form (118). Similarly, if the focused constituent is the the direct object, the appropriate object-pivot form is used (119):

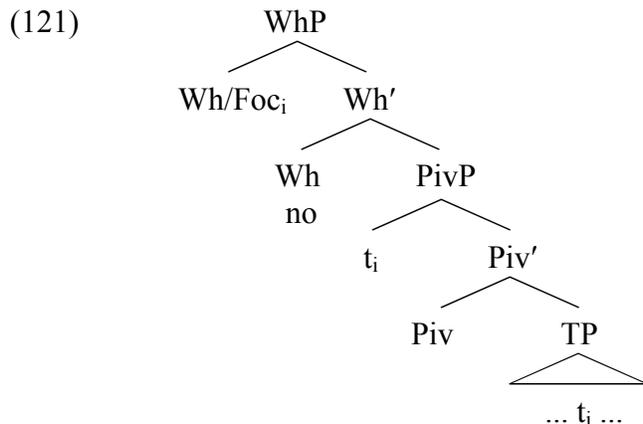
- (118) a. Ny mpamboly no *namono* ny akoho tamin'ny antsy
 Det farmer Foc Pst-NomP.kill Det chicken Pst-with-Det knife
 "It's the farmer who killed the chicken with the knife"
- b. * Ny mpamboly no *novonoina* tamin'ny antsy ny akoho
 Det farmer Foc Pst-AccP.kill Pst-with-Det knife Det chicken
 "It's the farmer who killed the chicken with the knife"
- c. * Ny mpamboly no *namonoana* ny akoho ny antsy
 Det farmer Foc Pst-CrcP.kill Det chicken Det knife
 "It's the farmer who killed the chicken with the knife"
- (119) a. * Ny akoho no *namono* tamin'ny antsy ny mpamboly
 Det chicken Foc Pst-NomP.kill Pst-with-Det knife Det farmer
 "It's the chicken that the farmer killed with the knife"
- b. Ny akoho no *novonoin'ny* mpamboly tamin'ny antsy
 Det chicken Foc Pst-AccP.kill-Det farmer Pst-with-Det knife
 "It's the chicken that the farmer killed with the knife"
- c. * Ny akoho no *namonoan'ny* mpamboly ny antsy
 Det chicken Foc Pst-CrcP.kill-Det farmer Det knife
 "It's the farmer who killed the chicken with the knife"

Finally, when the focused constituent is an oblique element (such as an instrument), the verb must appear in the CrcP form, as shown in (120) (actually this is an oversimplification; see 3.4.4 for the full story on obliques). The pattern in (118)–(120) is highly reminiscent of the relative clause pattern discussed in the previous section. As I will show below, this resemblance is non-accidental.

- (120) a. * Ny antsy no *namono* ny akoho ny mpamboly
 Det knife Foc Pst-CrcP.kill Det chicken Det farmer
 "It's the knife that the farmer killed the chicken (with)"
- b. * Ny antsy no *novonoin'ny* mpamboly ny akoho
 Det knife Foc Pst-AccP.kill-Det farmer Det chicken
 "It's the knife that the farmer killed the chicken (with)"
- c. Ny antsy no *namonoan'ny* mpamboly ny akoho
 Det knife Foc Pst-CrcP.kill-Det farmer Det chicken
 "It's the knife that the farmer killed the chicken (with)"

What is the structure of focus-fronting clauses? On analogy with *wh*-questions in English, we might assume that *wh*-operators and focused constituents start out inside the predicate phrase and

raise leftward over the verb to the specifier of WhP, with the focus particle *no* generated in Wh⁰ (cf. MacLaughlin 1995 for an analysis along these lines):



However, Paul (1999, to appear) presents evidence, discussed below, to show that the wh/focus-fronted constituent does not occupy a specifier position in the C-domain. Instead, it functions as the predicate in a cleft construction, of which the constituent consisting of *no* plus the verb and its dependents is the external argument. The latter constituent has the structure of a free relative or headless relative clause: It contains an operator-variable chain which shares its index with the constituent as a whole, and is interpreted as an expression ranging over the set of entities that bear the property named by the predicate it contains (e.g., *no novonoin'ny mpamboly tamin'ny antsy* in (119b) means something like “what the farmer killed with the knife”).³⁴

The basic structure for wh/focus-fronting sentences is thus not (122a), but (122b): The SpecWhP of the clause containing the verb is occupied not by the wh/focus phrase itself, but by a null operator which is coindexed with the wh/focus phrase.³⁵

³⁴ More precisely, Paul analyzes wh/focus sentences as a *pseudoclefts*—presumably because the EA position is occupied by the free/headless relative itself, rather than an expletive. However, the Malagasy wh/focus construction more closely resembles the English cleft construction with respect to the range of elements which can be focused (DPs, CPs, PPs, adverbials). Pseudoclefts in English allow a broader range of constituents to be focused, including VPs (*What Daniel did was read the book*) and, for some speakers at least, full clauses (*What Daniel did was he read the book*). I will therefore treat Malagasy wh/focus sentences as clefts rather than pseudoclefts.

In Pearson (1996b, footnote 17), I also suggested that wh/focus constructions be analyzed as pseudoclefts, but this suggestion was not developed in detail. The use of clefting to form wh-questions and constituent focus constructions appears to be a common strategy in Western Austronesian. For similar analyses in other languages, see Georgopoulos (1991) on Palauan, Kroeger (1993) and Richards (1998) on Tagalog, Bauer (1991) on Maori, Davies (2000a) on Madurese, and Cole, Hermon, & Aman (to appear) on Malay.

³⁵ As evidence that the string consisting of *no* and the following predicate is a constituent, Paul (to appear) observes that two such strings may be coordinated, as shown in (i). Furthermore, the fact that the conjunction *sy* is used shows that the conjuncts are not independent clauses (cf. chapter 2, footnote 2):

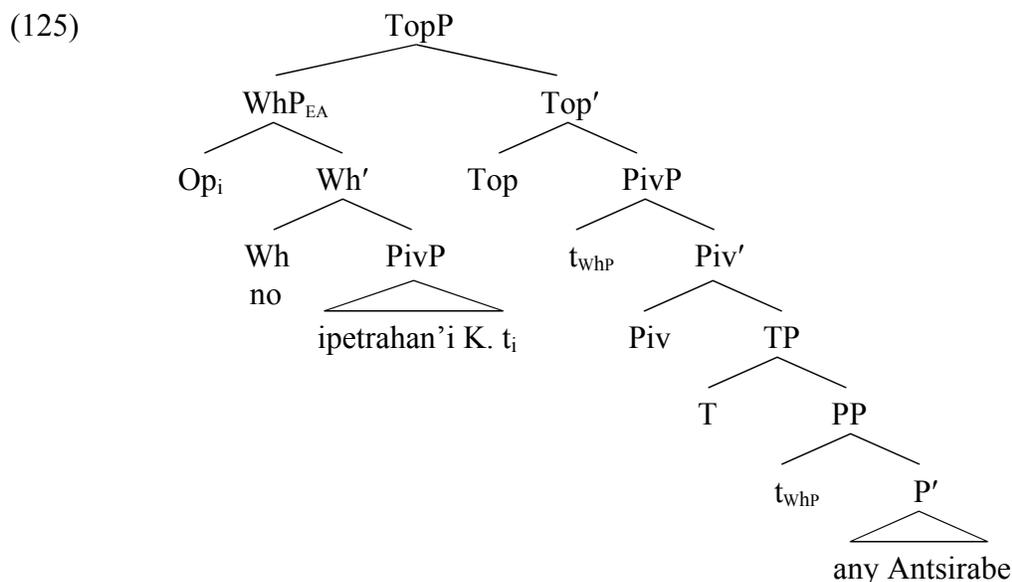
- (i) Rasoa [no nijinja vary] sy [no nanapaka bozaka]
 Rasoa Foc Pst-NomP.harvest rice and Foc Pst-NomP.cut grass
 “It was Rasoa who harvested rice and cut grass”
 lit. “(The one who) harvested rice and (the one who) cut grass (is) Rasoa”

- (122) a. [WhP Wh/Foc_i *no* [PivP t_i [TP V ... t_i ...]]]
 b. [PredP Wh/Foc_i] [WhP Op_i *no* [PivP t_i [TP V ... t_i ...]]]_i

According to this analysis, the sentences in (123b) and (124b) below have essentially the same structure as the null copular sentences in (123a) and (124a), respectively; the only real difference is that PredP is predicated of a free relative rather than an ordinary definite description:

- (123) a. [PredP Mpianatra] [DP ny rahalahiko]
 student Det brother-1s
 “My brother (is) a student”
 b. [PredP Mpianatra] [WhP Op_i *no* namaky t_i ny boky]
 student Foc Pst-read Det book
 “It’s a student who was reading the book”
 lit. “(The one who) was reading the book (is) a student”
- (124) a. [PredP Any Antsirabe] [DP i Ketaka]
 there Antsirabe Det Ketaka
 “Ketaka (is) in Antsirabe”
 b. [PredP Any Antsirabe] [WhP Op_i *no* ipetrahan’i Ketaka t_i]
 there Antsirabe Foc CrcP.live-Det Ketaka
 “It is in Antsirabe that Ketaka lives”
 lit. “(The place where) Ketaka lives (is) in Antsirabe”

The full structure for a sentence like (124b) is given in (125)—abstracting away from the relative order of the EA and predicate phrase, which is derived via leftward movement of the PivP constituent to adjoin to TopP, as discussed in chapter 4. Here I assume without argument that the clefted constituent *any Antsirabe* is of category PP, and that the predicate phrase includes a tense head, but does not include a null copular verb (see Paul 1999 for a somewhat different structure):



Paul (1999) cites distributional evidence to support the claim that the focused constituent functions as the matrix predicate of the sentence. Note for example that focused constituents pattern with regular predicate nominals and PPs, as well as verbal predicates, in that they may be negated with *tsy* (126)–(127). By contrast, EAs and PredP-internal dependents may not be negated, as shown in (128).³⁶

- (126) a. *Tsy mpianatra ny rahalahiko*
 Neg student Det brother-1s
 “My brother is not a student”
- b. *Tsy mpianatra no namaky boky tany an-tokotany*
 Neg student Foc Pst-NomP.read book Pst-there Obl-garden
 “It’s not a student who was reading a book in the garden”
- (127) a. *Tsy tany an-tokotany ny rahalahiko*
 Neg Pst-there Obl-garden Det brother-1s
 “My brother was not in the garden”
- b. *Tsy tany an-tokotany no namaky boky ny mpianatra*
 Neg Pst-there Obl-garden Foc Pst-NomP.read book Det student
 “It was not in the garden that the student was reading a book”
- (128) a. * *Namaky boky tany an-tokotany tsy ny mpianatra*
 Pst-NomP.read book Pst-there Obl-garden Neg Det student
 “Not the student read a book in the garden”

³⁶ Here and below, I underline the constituent introduced by *no* to reflect the fact that it is functioning as the EA of the clause.

- b. * Namaky *tsy* boky tany an-tokotany ny...mpianatra
 Pst-NomP.read Neg book Pst-there Obl-garden Det student
 “The student read not a book in the garden”
- c. * Namaky boky *tsy* tany an-tokotany ny...mpianatra
 Pst-NomP.read book Neg Pst-there Obl-garden Det student
 “The student read a book not in the garden”

Also, like verbal predicates (but unlike arguments), focused constituents may be embedded under raising predicates such as *toa* “seem”:

- (129) a. *Toa* nanoraka an-dRakoto Rasoa
 seem Pst-NomP.kiss Obj-Rakoto Rasoa
 “Rasoa seems to have kissed Rakoto”
- b. *Toa* Rasoa no...nanoraka..... an-dRakoto
 seem Rasoa Foc Pst-NomP.kiss Obj-Rakoto
 “It seems to be Rasoa who kissed Rakoto”
 lit. “(The one who) kissed Rakoto seems (to be) Rasoa”

Finally, notice that in yes/no questions, the particle *ve* appears to the right of the focused constituent, immediately preceding *no*, as shown in (130):

- (130) Tany an-tokotany *ve* no namaky..... boky ny mpianatra?
 Pst-there Obl-garden Qu Foc Pst-NomP.read book Det student
 “Was it in the garden that the student was reading a book?”

This receives a straightforward explanation if we assume that the focused constituent is the main predicate of the clause, given that *ve*-placement targets the right edge of the predicate phrase in non-focus/wh sentences, as discussed in 2.1. Compare the following:

- (131) a. Namono akoho *ve* ny...mpamboly?
 Pst-NomP.kill chicken Qu Det farmer
 “Was the farmer killing chickens?”
- b. Akoho *ve* ireto?
 chicken Qu these
 “Are these chickens?”
- c. Akoho *ve* no novonoin'ny..... mpamboly?
 chicken Qu Foc Pst-AccP.kill-Det farmer
 “Was it chickens that the farmer was killing?”
 lit. “Are (the ones that) the farmer was killing chickens?”

If the cleft analysis is correct, then the structure of wh/focus-fronting constructions is not very different from that of relative clauses. In both cases, there is a clause containing an operator

which raises to SpecPivP (and thence to SpecWhP), thereby preventing an overt DP from raising to the external argument position. Raising to SpecPivP is required in order to check an uninterpretable [op] feature on Piv, and thus the operator (which possesses an inherent interpretable [op] feature) will necessarily determine the voice of the verb it raises over. Since the operator shares its index with the free relative as a whole, which is in turn linked via predication to the focused constituent, this gives the impression that the focused constituent is controlling the voice of the verb.

3.4.3. Topic-fronting

The voicing restrictions found in clefts are replicated in the *dia*-topic construction. Recall from 2.2.4 that the *dia*-topic appears at the left edge of the clause, separated from the predicate by the particle *dia*.³⁷ As with the left-dislocation and “as for” constructions in English, topicalization with *dia* is typically used to introduce a new referent into the discourse, or to contrast one previously-mentioned referent with another.

- (132) a. Nihinana ny voankazo ny...gidro
 Pst-NomP.eat Det fruit Det lemur
 “The lemur ate the fruit”

³⁷ The particle *dia* is also used as a conjunction to mark the consequence in an *if-then* construction, as shown in (i) (where *dia* is glossed “then”):

- (i) Raha vonoinareo aho, dia inona no...soa...ho azonareo?
 if AccP.kill-2p 1s then what Foc good Irr got-2p
 “If you kill me, then what good will you get from it?”

Although this use of *dia* is usually treated as entirely separate from its use as a topic marker, it is possible that one of these functions can be reduced to the other. Perhaps the presence of *dia* in (i) indicates that the fronted conditional clause has been topicalized. Alternatively, the use of *dia* as a conjunction may be primary, in which case the *dia*-topic construction can be treated as a ‘hidden’ *if-then* construction. As evidence for the second analysis, note that *dia*-topics are sometimes introduced by *raha* “if” (Keenan 1976 calls this the *strong topicalization* construction):

- (ii) Raha io lamba io aloha, dia mbola manasa azy Raşoa
 if that clothes that before then still NomP.wash 3 Rasoa
 “If (it’s a question of) those clothes from before, then Rasoa is still washing them”

It is easy to understand why conditional clauses and topics should pattern together, since both serve to establish pre-suppositions. Thompson & Longacre (1985) cite a number of languages in which topic constructions share morpho-syntactic properties with *if-then* constructions. In Turkish, for example, both conditional clauses and topics are marked with the suffix *-se*:

- (iii) a. Istanbul-a gid-er-se-n, Topkapi müze-sin-i muhakkak gez
 Istanbul-Dat go-Aor-se-2s Topkapi museum-Poss-Acc for.sure visit
 “If you go to Istanbul, be sure to visit the Topkapi museum”
 b. Ahmed-i-se cok mesgul
 Ahmed-be-se very busy
 “(As for) Ahmed, he’s very busy”

- b. Ny gidro dia nihinana ny voankazo
 Det lemur Top Pst-NomP.eat Det fruit
 “(As for) the lemur, (it) ate the fruit”
- c. Ny voankazo dia nohanin’ny gidro
 Det fruit Top Pst-AccP.eat-Det lemur
 “(As for) the fruit, the lemur ate (it)”

I assume that the topicalized constituent is base-generated in its surface position, since it may be linked to a resumptive pronoun, as in the examples in (133). The resumptive pronoun strategy is the only strategy available when the *dia*-topic is linked to a position which is inaccessible for A'-extraction, e.g., a position inside an island. An example is given in (133b), where the *dia*-topic corefers with the pronoun *azy*, located inside the free relative constituent in a cleft (this example taken from Keenan 1976, cf. also Paul 1999 for discussion of such examples). In cases where A'-extraction is allowed, a gap is strongly preferred in place of an overt resumptive pronoun, hence the somewhat marginal nature of (133a):

- (133) a. ? Ny lamba dia manasa azy Rasoa
 Det clothes Top NomP.wash 3 Rasoa
 “The clothes, Rasoa is washing them”
- b. Itỳ radara itỳ dia ny Rosiana no nanao azy
 this radar this Top Det Russian Foc Pst-NomP.make 3
 “As for this radar, it’s the Russians who built it”

In the absence of a resumptive pronoun, the voice of the verb is generally constrained by the grammatical function of the topicalized constituent, in the same manner as with the focus-fronting construction: If the *dia*-topic is interpreted as the subject of the clause, the NomP form is used (134a); if the *dia*-topic is the object, the appropriate object-pivot form is used (134b); and if the topic is an oblique DP, such as an instrument, the CrcP form is used (134c):

- (134) a. Ny mpamboly dia namono akoho tamin’ny antsy
 Det farmer Top Pst-NomP.kill chicken Pst-with-Det knife
 “As for the farmer, (he) killed chickens with the knife”
- b. Ny akoho dia novonoin’ny mpamboly tamin’ny antsy
 Det chicken Top Pst-AccP.kill-Det farmer Pst-with-Det knife
 “As for the chickens, the farmer killed (them) with the knife”
- c. Ny antsy dia namonoan’ny mpamboly akoho
 Det knife Top Pst-CrcP.kill-Det farmer chicken
 “As for the knife, the farmer killed chickens (with it)”

I will assume that the *dia*-topic is generated in the specifier of a functional projection headed by *dia*, which I will call simply DiaP. The complement of *dia* is either a TopP containing a resumptive pronoun, or a WhP with a null operator in SpecWhP which is coindexed with the topic in

SpecDiaP. The latter structure—reminiscent of the structure proposed by Chomsky (1977, 1981) for left-dislocation in English—is illustrated in (135) (cf. (134a-b)):

- (135) a. [DiaP ny mpamboly_i dia [WhP Op_i *namono* t_i ny akoho tamin'ny antsy]]
 b. [DiaP ny akoho_i dia [WhP Op_i *novonoin'*ny mpamboly t_i tamin'ny antsy]]

The basic analysis here is the same as in the preceding cases: As with modifying relative clauses and clefts, the clause that contains the verb also contains a null operator. This null operator must raise to SpecWhP in order to be interpreted under coindexation with a DP outside the clause.³⁸ Since this chain includes a link in SpecPivP, the case features of the null operator will correlate with the voice marking on the verb—deriving the generalization that a topicalized DP functions as if it were the pivot of the verb.

3.4.4. Topicalization/clefting of non-DPs and the absence of blocking

In the case of clefts and *dia*-topic constructions, the analysis presented here is complicated by the fact that the blocking effect is suspended when the clefted/topicalized constituent belongs to a lexical category other than DP. Consider clefts: As I mentioned briefly in 2.2.3, the range of categories which can be clefted includes not only DPs (136a), but also PPs (136b), temporal adverbs (136c), and adverbial clauses (136d):

- (136) a. Ny antsy no namonoan'ny mpamboly ny akoho
 Det knife Foc Pst-CrcP.kill-Det farmer Det chicken
 “It’s the knife that the farmer killed the chicken (with)”
- b. Tamin'ny tsenda no nahitan'ny zazalahy ny zazavavy
 Pst-in-Det market Foc Pst-CrcP.see-Det boy Det girl
 “It was in the market where the boy saw the girl”
- c. Omaly hariva no namangy ny reniny Rabe
 yesterday evening Foc Pst-NomP.visit Det mother-3 Rabe
 “It was yesterday evening that Rabe visited his mother”
- d. Mba ho hendry no nanasaziako ny zaza
 so.that Irr well-behaved Foc Pst-CrcP.punish-1s Det child
 “It was so that (he) would behave that I punished the child”

When the clefted constituent is an oblique (i.e., a constituent which receives a ‘non-core’ θ -role such as instrument, benefactee, location, etc.), the presence or absence of a voicing restriction

³⁸ Assuming that topicalized DPs are arguments rather than predicates, coindexation is also necessary in this case to avoid violations of the Case Filter and the Theta Criterion: The topicalized DP is generated in an A'-position, but may receive a θ -role and check its case feature indirectly by forming a composed A'-chain with the operator-variable chain in WhP (cf. Barss 1984).

depends on its lexical category: When the oblique takes the form of a DP, the verb must appear in the CrcP form, as shown in (136) for the instrument *ny antsy*:

- (137) a. * Ny antsy no *namono* ny akoho ny...mpamboly
 Det knife Foc Pst-NomP.kill Det chicken Det farmer
 “It’s the knife that the farmer killed the chicken (with)”
- b. * Ny antsy no *novonoin’ny* mpamboly ny...akoho
 Det knife Foc Pst-AccP.kill-Det farmer Det chicken
 “It’s the knife that the farmer killed the chicken (with)”
- c. Ny antsy no *namonoan’ny* mpamboly ny akoho
 Det knife Foc Pst-CrcP.kill-Det farmer Det chicken
 “It’s the knife that the farmer killed the chicken (with)”

However, when the oblique takes the form of a PP or adverbial, any of the voice forms may be used (Paul 1998b, to appear): Compare (137) with (138), in which the DP *ny antsy* “the knife” is replaced with the PP *tamin’ny antsy* “with the knife”. Here the NomP and AccP forms are licit as well as the CrcP form. (139) shows the same range of possibilities when the adverbial *omaly* “yesterday” is clefted:

- (138) a. Tamin’ny antsy no *namono* ny akoho ny...mpamboly
 Pst-with-Det knife Foc Pst-NomP.kill Det chicken Det farmer
 “It’s with the knife that the farmer killed the chicken”
- b. Tamin’ny antsy no *novonoin’ny* mpamboly ny...akoho
 Pst-with-Det knife Foc Pst-AccP.kill-Det farmer Det chicken
 “It’s with the knife that the farmer killed the chicken”
- c. Tamin’ny antsy no *namonoan’ny* mpamboly ny akoho
 Pst-with-Det knife Foc Pst-CrcP.kill-Det farmer Det chicken
 “It’s with the knife that the farmer killed the chicken”
- (139) a. Omaly no *namonoan’ny* mpamboly ny akoho
 yesterday Foc Pst-CrcP.kill-Det farmer Det chicken
 “It’s yesterday that the farmer killed the chicken”
- b. Omaly no *namono* ny akoho ny...mpamboly
- c. Omaly no *novonoin’ny* mpamboly ny...akoho

From a purely functional perspective, it is understandable that the CrcP form would be required in (137), but not in (138)–(139). In (137) the preposition *tamin’* “with” is suppressed, and hence there is no way to identify the fronted constituent as an oblique other than by the fact that it triggers CrcP-marking on the verb. In (138)–(139), however, the fronted constituent is unambiguously an oblique, and so there is no need for the voice morphology to identify it as such.

The exact same pattern is found in the case of *dia*-topicalization. When the *dia*-topic is a DP, it controls the voice of the verb, as shown in (134) above. However, when the *dia*-topic is a non-DP, the voice of the verb is unrestricted. This is illustrated in (140), where *tamin'ny antsy* ‘‘with the knife’’ has been topicalized; here, the verb may appear in any voice form:

- (140) a. Tamin'ny antsy dia *namonoan'ny* mpamboly ny akoho
 Pst-with-Det knife Top Pst-CrcP.kill-Det farmer Det chicken
 ‘‘With the knife, the farmer killed the chickens’’
- b. Tamin'ny antsy dia *namono* ny akoho ny mpamboly
 Pst-with-Det knife Top Pst-NomP.kill Det chicken Det farmer
 ‘‘With the knife, the farmer killed the chickens’’
- c. Tamin'ny antsy dia *novonoin'ny* mpamboly ny akoho
 Pst-with-Det knife Top Pst-AccP.kill-Det farmer Det chicken
 ‘‘With the knife, the chickens, the farmer killed (them)’’

Given that clefts and *dia*-topic constructions involve the coindexation between an overt constituent and a null operator, we can summarize the data by means of the generalization in (140):³⁹

- (141) a. When a DP is coindexed with a null operator, the null operator obligatorily functions as the pivot of the verb in its clause.
- b. When a non-DP is coindexed with a null operator, the null operator may or may not function as the pivot of the verb in its clause.

What can we attribute the pattern in (141) to? Here I will present an analysis which exploits the presence of an uninterpretable [D] feature on the head of WhP.

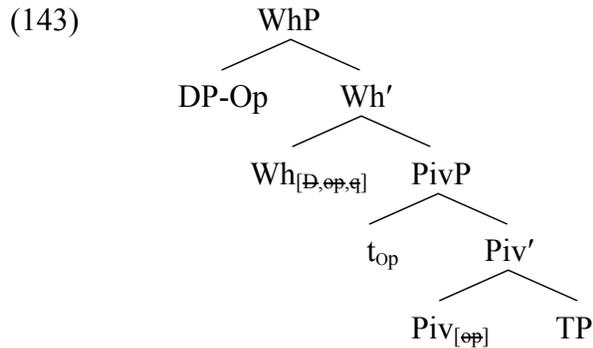
To begin with, I will assume that null wh-operators, like overt wh-phrases, can belong to different lexical categories. Following Paul (1999), who cites Williams's (1980) discussion of clefts, I will assume that the category of the null operator in Malagasy clefts and *dia*-topic constructions must match the category of its antecedent (i.e., the clefted/topicalized constituent with which it is coindexed). Thus, in (142a), where the antecedent is a DP, the null operator is of category DP, while in (142b), where the antecedent is a PP, the null operator is also of category PP. (I will refer to the former as a DP-operator, abbreviated *DP-Op*, and the latter as a PP-operator, abbreviated *PP-Op*.)

- (142) a. Ny akoho_i dia [DP-Op_i novonoiko tamin'ny antsy]
 Det chicken Top Pst-AccP.kill-1s Pst-with-Det knife
 ‘‘The chickens, I killed with the knife’’

³⁹ Stating the generalization in this way correctly captures the fact that relative clause constructions invariably exhibit the blocking effect in (111). In relative clause constructions, the null operator is linked to a DP, and thus obligatorily functions as the pivot of the relative clause, in accordance with (141a). It is only in cleft and *dia*-topic constructions that the option exists of coindexing the operator with a non-DP.

- b. Tamin'ny antsy_i dia [PP-Op_i namono ny akoho aho]
 Pst-with-Det knife Top Pst-NomP.kill Det chicken 1s
 “With the knife, I killed the chickens”

In 3.4.1 I stipulated that the head of WhP has an uninterpretable [D] feature which needs to be checked, in addition to its [q] and [op] features. If the null operator attracted to SpecWhP is a DP-operator, as in (142a), then it will be able to check all three of these features in a single step: The operator first raises from its case position to SpecPivP, checking the [op] feature of Piv and triggering the insertion of the appropriate voice morphology on the verb. It then raises on to SpecWhP, checking the [D], [op] and [q] features of Wh. The resulting structure is shown in (143).



However, if the operator belongs to a different category—say, PP—it will be unable to check the [D] feature of Wh when it raises to SpecWhP. Thus, to prevent the derivation from crashing, Wh will need to attract a second constituent possessing a [D] feature into its checking domain, creating a multiple-specifier construction.

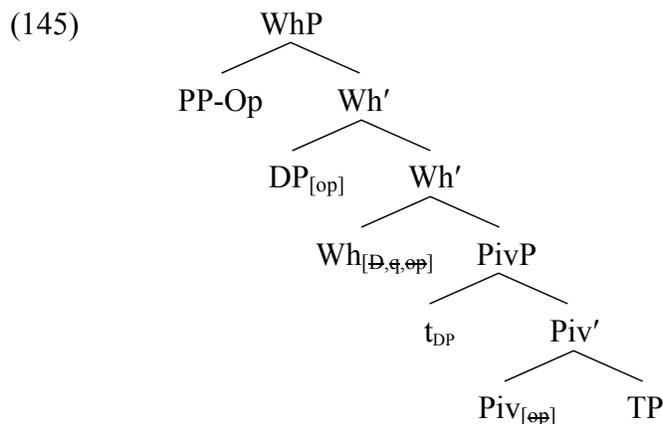
How does this take place? Recall my assumption from 3.4.1 that the assignment of the scope-related feature [op] to a [+specific] DP in the numeration is constrained by a general Last Resort condition on operations ([op] is added only if failure to do so would cause the derivation to crash). If there is a wh-operator in the clause, normally [op] will not be inserted on any of the DPs, since it is not needed to check the uninterpretable [op] features on Piv and Wh/Top. However, in cases where the operator is a non-DP, and is thus unable to check the [D] feature of Wh, the derivation will crash unless Wh can also attract a DP. An [op] feature will thus be added to one of the DPs in this case, allowing the DP to raise to SpecPivP, from which it can undergo short A'-movement to SpecWhP.

Consider the sentence in (144), in which the bracketed constituent contains both an overt EA (*ny mpamboly* “the farmer”, which acts as the pivot of the verb “kill”), and a PP-operator linked to the topicalized constituent *tamin'ny antsy* “with the knife”:

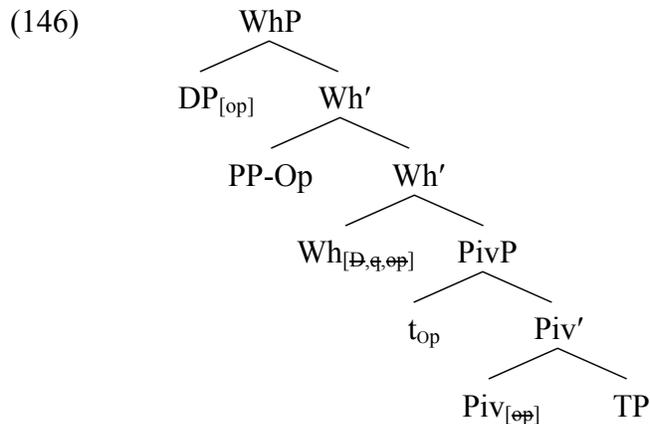
- (144) Tamin'ny antsy dia [_{WhP} namono akoho ny...mpamboly]
 Pst-with-Det knife Top Pst-NomP.kill chicken Det farmer
 “With the knife, the farmer killed (some) chickens”

In this sentence, the operator raises to check the [q] and [op] features of Wh, while *ny mpamboly* (assigned an [op] feature in the numeration) checks the [D] feature of Wh. Two derivations are

possible, depending on whether the DP or the operator is closer to PivP: If the DP is closer, it raises to the specifier of PivP, checking the [op] feature of Piv and triggering NomP morphology on the verb *namono* “killed”, after which it raises again to become the inner specifier of WhP, checking the [D] and [op] features of Wh. The operator then raises from its base position to check the [q] feature of Wh, becoming the outer specifier of WhP. The resulting structure is shown in (145):



On the other hand, if the PP-operator is closer to PivP, it will raise first, checking the [op] feature of Piv and the [q] and [op] features of Wh, after which the DP raises to check the [D] feature of Wh, becoming the outer specifier of WhP, as in (146):



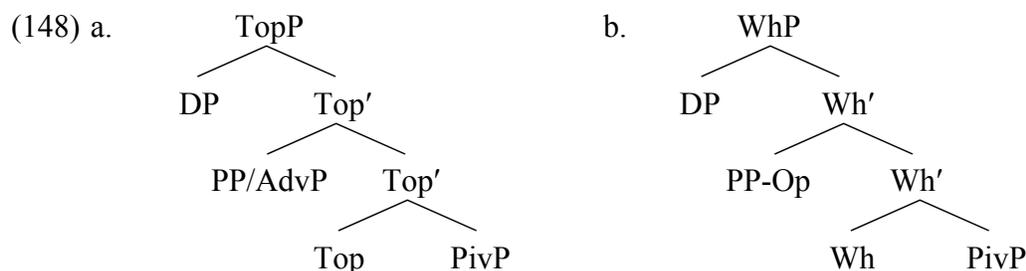
Either way, the result is the same as far as the voice marking on the verb is concerned: In 2.4.3 I argued that the voice morphemes *m-* and *-in* are case-assigning heads, which are spelled out overtly just in case they contain an A'-trace in their specifier. Let us assume that this property of being spelled out in the presence of an A'-trace is a general morphological characteristic of case-assigning heads in Malagasy, which is not shared with non-case-assigning heads (i.e., when an element undergoes A'-movement from the specifier of a head H, H will be spelled out only if it is a case-assigning head). In cases such as (145)–(146), in which a DP subject and a PP-operator both undergo A'-movement to SpecWhP, there is no conflict as far as which element will determine the voice of the verb: The DP raises from the nominative case position, SpecAsp_eP, and thus causes Asp_e⁰ to be spelled out as *m-*; while the PP-operator raises from a non-case-position,

and thus has no effect on the voice of the verb. (Speaking generally, when a case-bearing element and a non-case-bearing element both raise into the C-domain, it is the case-bearing element which will act as the pivot of the verb.) We thus correctly predict that the verb “kill” in (144) will exhibit NomP morphology.

Configurations such as (145)–(146), in which a C-projection hosts two specifiers, one containing a DP and the other containing a PP or adverbial element, are not restricted to null operator constructions, but are also found in other clause types. Recall from my discussion of word order in 2.1 that spatio-temporal adverbials and PPs sometimes follow the EA, as illustrated in (147):

- (147) a. Nanoratra taratasy ny...zazavavy tany am-pianarana
 Pst-NomP.write letter Det girl Pst-there Obl-school
 “The girl wrote a letter in school”
- b. Niasa tany tamin’ny angady izahay omaly hariva
 Pst-NomP.work field Pst-with-Det spade lex yesterday evening
 “Yesterday evening we worked (in the) fields with a spade”

I have so far said nothing about the position of elements such as “in school” and “yesterday evening” in such sentences. Suppose that they occupy the inner specifier of TopP, as in (148a) (cf. the discussion in 4.3.1). If so, then their position is closely analogous to that of the PP-operator in (146) (abbreviated below as (148b)): TopP and WhP share the property that they may host multiple specifiers, as long as one (and only one) specifier contains a DP.⁴⁰

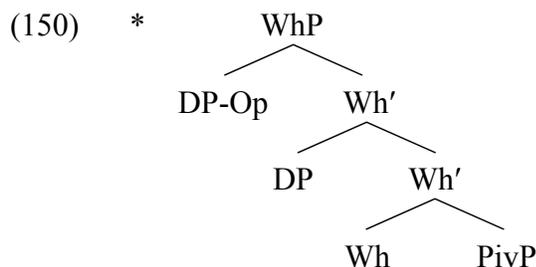


There are a number of questions raised by this analysis. Here, I will attempt to answer two of them. The first question concerns the checking of the [D] and [q]/[op] features on WhP: Recall that the blocking effect in (111) is suspended *only* if the clefted/topicalized constituent is coindexed with an operator which is not of category DP (i.e., a DP-operator must act as the pivot of its clause). Thus, sentences such as (149), in which a DP-operator co-occurs with an overt DP controlling the voice of the verb, are ill-formed:

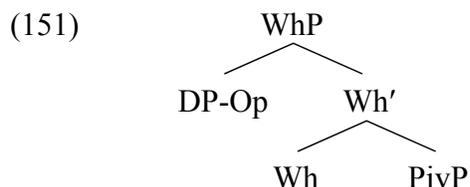
⁴⁰ It is probably no coincidence that spatio-temporal expressions such as “at school” and “yesterday evening” (which serve to establish the setting of the event denoted by the predicate phrase) are frequently topicalized in verb-second languages like German.

- (149) a. * Ny antsy no [DP-Op *namono* ny akoho ny...mpamboly]
 Det knife Foc Pst-NomP.kill Det chicken Det farmer
 “It’s the knife that the farmer killed the chicken (with)”
- b. * Ny antsy no [DP-Op *novonoin’ny* mpamboly ny...akoho]
 Det knife Foc Pst-AccP.kill-Det farmer Det chicken
 “It’s the knife that the farmer killed the chicken (with)”

Given my analysis, according to which WhP has three uninterpretable features to check, each of which may attract a different constituent, it is reasonable to ask what rules out sentences such as (149). For example, we might imagine a derivation of (149a) in which an [op] feature is assigned in the numeration to *ny mpamboly*, causing it to raise to the inner specifier of WhP (via Spec-PivP) to check the [D] and [op] features on Wh, triggering NomP morphology on “kill”. The DP-operator would then raise over it to the outer specifier of WhP to check the [q] feature on Wh, producing the structure in (150):



Why is it that (150) is blocked by the derivation in (151) (cf. (143)), in which no [op] feature is assigned to *ny mpamboly* and the DP-operator raises to become the single specifier of WhP?



In order to rule out (150), I will assume that feature attraction and feature checking are governed by economy considerations. Specifically, I adopt the principle in (152), due to Pesetsky & Torrego (2000):

- (152) A head H triggers the minimum number of operations necessary to satisfy the properties of its uninterpretable features.

A DP-operator possesses interpretable [D], [q], and [op] features. Thus, if Wh attracts the DP-operator into its specifier first, as in (151), all three uninterpretable features of Wh can be satisfied in a single step. On the other hand, if it attracts an overt DP first to check its [D] and [op] features, as in (150), then it will need to attract another constituent to check its [q] feature. (151),

which involves one operation of Attract-F, is thus more economical than (150), which involves two operations.

A second issue raised by my analysis involves sentences in which a PP is clefted and the verb appears in the CrcP form. As Paul (1999) observes, CrcP morphology is compatible with clefted and topic-fronted constituents of various categories, including both DPs (153a) and PPs (153b). The source of CrcP marking in (153a) is clear: *Ny antsy* “the knife” is coindexed with a DP-operator which starts out as the applied object of the verb “kill”, and thus triggers insertion of the applicative suffix *-an* when it undergoes A'-movement to SpecPivP (cf. my discussion of CrcP morphology in 2.4.4). But what is the source of CrcP morphology in the PP cleft in (153b)?

- (153) a. *Ny antsy no namonoan'ny mpamboly ny akoho*
 Det knife Foc Pst-CrcP.kill-Det farmer Det chicken
 “It’s the knife that the farmer killed the chicken (with)”
- b. *Tamin'ny antsy no namonoan'ny mpamboly ny akoho*
 Pst-with-Det knife Foc Pst-CrcP.kill-Det farmer Det chicken
 “It’s with the knife that the farmer killed the chicken”

To capture sentences such as (153b), I will have to relax slightly the categorial matching requirement which holds between a null operator and its antecedent. Suppose that applied objects—which function syntactically as case-bearing arguments of the verb but nevertheless share semantic properties with obliques—may be coindexed with both DPs and PPs, allowing for the optionality in (153a-b). Note that a similar kind of flexibility is found with operators such as *where* in English, which may be coindexed with both DPs and PPs in clefts and pseudoclefts:

- (154) a. It was *Madagascar* [where I first met them]
 b. It was *in Madagascar* [where I first met them]
- (155) a. [Where I really want to go] is *Madagascar*
 b. [Where I really want to go] is *to Madagascar*

To summarize: In 3.4.1–3.4.3 I showed that when a DP is relativized, clefted, or *dia*-topicalized, the abstract case of the null operator with which the DP is coindexed obligatorily determines the voice of the verb in its clause (e.g., when the null operator bears nominative case, the NomP form of the verb is used). I characterized this in terms of a blocking effect on A'-movement: When there is a *wh*-operator in the clause, it raises to the specifier of PivP to check the [op] feature of Piv, preventing any of the overt DPs in the clause from raising out of TP.

In this section I showed that when the clefted or *dia*-topicalized constituent belongs to a category other than DP (e.g., when it is a PP or adverbial), the blocking effect is suspended. I argued that in such cases, the operator with which the clefted/topicalized constituent is coindexed is a non-DP, and is thus incapable of checking the [D] feature of *Wh*. To ensure that this feature is checked, *Wh* attracts an overt DP, triggering the corresponding voice morphology on the verb.

Keenan (1976), Voskuil (1993), and others identify *izy*, *azy*, and *-ny* with nominative, accusative, and genitive case, respectively. If we assume that the *izy* form in (156) represents the morphological realization of structural nominative case on the pronoun, it would follow that movement to the EA position is motivated by the need to check case.

However, as I showed in 2.3.1, the *izy* form is best analyzed not as a nominative form, but as a default form, which appears in syntactic contexts where the *azy* and *-ny* forms are disallowed. In addition to being used when the pronoun is an external argument, the *izy* form also occurs when the pronoun functions as a predicate (or otherwise occupies a non-case position), as in the cleft construction in (158):

- (158) *Izy no...novangian'ny.....ankizy*
 3 Foc Pst-DatP.visit-Det children
 “It was s/he who the children visited”

Furthermore, the *izy* form is used in place of *-ny* in contexts where cliticization is disallowed, such as when the pronoun is coordinated with another noun phrase. Compare:

- (159) a. *Hitany tany an-tokotany i.....Koto*
 saw-Lnk-3 Pst-there Obl-garden Det Koto
 “S/he saw Koto in the garden”
- b. *Hitan'izy sy ny zaza tany an-tokotany i.....Koto*
 saw-Lnk-3 and Det child Pst-there Obl-garden Det Koto
 “S/he and the child saw Koto in the garden”

The distribution of *izy*-type pronouns is actually quite similar to that of strong pronouns in languages like French (*moi, toi, vous*, etc.): Strong pronouns are unmarked for case, and are used in place of—or in combination with—case-inflected clitic pronouns in coordinate structures, left-dislocation constructions, clefts, and the like.

In light of this, there is no compelling reason to associate the *izy* form with the EA position in particular. Consequently, the pronoun facts may not be construed as providing evidence for structural nominative case assignment in the EA position—in fact, quite the contrary: Given that the default form alternates with the clitic form, as in (159), it would be reasonable to assume that structural nominative case is actually assigned in the position occupied by postverbal subjects, as I argued in 2.3.3.

3.5.2. Raising-to-object

A second piece of evidence for regarding externalization as A-movement (which I have not discussed before now) is that, like raising to SpecIP in other languages, this operation appears to feed subsequent A-movement operations such as *raising-to-object*. In this section, I discuss the properties of the raising-to-object construction and explain why it is problematic for the A'-movement analysis of externalization presented here. I then suggest an alternative structure for raising-to-object complements which is consistent with the A'-movement analysis. According to this alternate structure, the ‘raised’ object is actually base-generated outside of the embedded

clause, and coindexed with a null operator in the embedded SpecCP, much as in *tough*-movement constructions.

In the raising-to-object (RTO) construction, an argument which is thematically associated with an embedded verb is ‘promoted’ to the direct object function of a higher verb (Paul & Rabaovololona 1998). An example of this construction is given in (160a). Here the promoted argument (which I will designate informally as the *derived object*, to distinguish it from objects which are θ -marked by the matrix verb) is separated from the embedded verb by the particle *ho* (I return to this particle below). The RTO construction alternates with a construction in which the argument in question surfaces in the embedded clause, which is headed by the complementizer *fa* (159b). (Notice that embedded clauses introduced by *ho* are inside the predicate phrase, while those introduced by *fa* extrapose to the right of the matrix EA.)

- (160) a. Mihevitra *ny mpianatra* [*ho mamaky ny boky*] Rabe
 NomP.think Det student NomP.read Det book Rabe
 “Rabe thinks of the student that (he) is reading the book”
 or “Rabe believes the student to be reading the book”
- b. Mihevitra Rabe [*fa mamaky ny boky ny...mpianatra*]
 NomP.think Rabe that NomP.read Det book Det student
 “Rabe thinks that the student is reading the book”

As the gloss of (159a) suggests, RTO complements are in many respects analogous to *exceptional case-marking* (ECM) complements in English. The two constructions differ primarily in that ECM complements in English are non-finite, whereas RTO complements in Malagasy are finite. Consider the following examples from Paul & Rabaovololona (1998), which show that the tense of the embedded verb may vary independently of the tense of the matrix verb:

- (161) a. Mihevitra an-dRabe [*ho mamono ilay biby*] aho
 NomP.think Obj-Rabe NomP.kill that animal 1s
 “I believe of Rabe that he is killing that animal”
- b. Mihevitra an-dRabe [*ho namono ilay biby*] aho
 NomP.think Obj-Rabe Pst-NomP.kill that animal 1s
 “I believe of Rabe that he killed that animal”
- c. Mihevitra an-dRabe [*ho hamono ilay biby*] aho
 NomP.think Obj-Rabe Irr-NomP.kill that animal 1s
 “I believe of Rabe that he will kill that animal”

There is evidence to suggest that although it bears a thematic relation to the embedded verb, the derived object is properly part of the matrix clause, and does not form a constituent with the em-

bedded clause. For example, (162) shows that the derived object may be separated from the embedded clause by an adverb which modifies the matrix verb.⁴²

- (162) ? Nilaza an-dRabe tamin-katezerana [ho mpangalatra] Rasoa
 Pst-NomP.say Obj-Rabe Pst-with-anger thief Rasoa
 “Rasoa said angrily of Rabe that (he was) a thief”

As can be seen by comparing the examples in (163) and (164) below, the derived object controls the voice of the embedded verb:

- (163) a. Namono an’ily akoho Ranaivo
 Pst-NomP.kill Obj-that chicken Ranaivo
 “Ranaivo killed that chicken”
- b. Novonoin-dRanaivo ily akoho
 Pst-AccP.kill-Ranaivo that chicken
 “That chicken, Ranaivo killed (it)”
- (164) a. Mihevitra an-dRanaivo [ho namono an’ily akoho] Rakoto
 NomP.think Obj-Ranaivo Pst-NomP.kill Obj-that chicken Rakoto
 “Rakoto thinks of Ranaivo that (he) killed that chicken”
- a’. * Mihevitra an-dRanaivo [ho novonoina ily akoho] Rakoto
 NomP.thinks Obj-Ranaivo Pst-AccP.kill that chicken Rakoto
 “Rakoto thinks of Ranaivo that that chicken was killed (by him)”
- b. Mihevitra an’ily akoho [ho novonoin-dRanaivo] Rakoto
 NomP.think Obj-that chicken Pst-AccP.kill-Ranaivo Rakoto
 “Rakoto thinks of that chicken that (it) was killed by Ranaivo”

⁴² Paul & Rabaovololona (1998) report a judgment of ?? for this sentence. However, my principal consultant judges similar sentences to be only slightly worse than their counterparts in which the adverb precedes the derived object, hence the upgrade to just a single question mark.

One might ask, of course, why (162) should be marginal at all. Although the relative order of postverbal adverbs and [+specific] direct objects is in principle free, there appears to be a preference among some speakers for ordering manner adverbs before the object rather than after it. For example, Polinsky (1994) reports the following contrast (cf. (i-b) with (162)):

- (i) a. Nitifitra tamin-kasosorana ny vorona ny...mpihaza
 Pst-NomP.kill Pst-with-anger Det bird Det hunter
 “The hunter angrily killed the birds”
- b. ? Nitifitra ny vorona tamin-kasosorana ny...mpihaza
 Pst-NomP.kill Det bird Pst-with-anger Det hunter
 “The hunter angrily killed the birds”

The point to keep in mind here is that although (162) is not entirely acceptable, it is not nearly as bad as one would expect if the derived object formed a constituent with the embedded clause.

- b'. * Mihevitra an'ilay akoho [ho namono Ranaivo] Rakoto
 NomP.think Obj-that chicken Pst-NomP.kill Ranaivo Rakoto
 "Rakoto said of that chicken that Ranaivo killed (it)"

This suggests that raising-to-object is fed by pivot-formation. That is, before the embedded argument can raise to become the derived object of the matrix verb, it must first be promoted to the pivot role within the lower clause, thereby determining the voice-marking on the lower verb. In terms of the analysis in 3.1, this would mean that an embedded DP must first raise into the SpecPivP position of its own clause before extracting from the clause and raising on to the derived object position.⁴³ However, such a requirement would pose a problem for the A'-movement account of externalization, since, as I show below, there is ample evidence to suggest that the derived object occupies a case position. Movement from an A'-position to an A-position is generally ruled out on the basis of *improper movement* cases like (165), in which a wh-phrase raises from the embedded SpecCP position (*t'*) to satisfy the EPP feature of the matrix T:

- (165) * Who_i *t_i'* seems [*t_i'* that Dennis visited *t_i*] ?

Thus, if SpecPivP is an A'-position, as I have argued, it should not be possible for case-driven movement to proceed from this position. In order to allow pivot-formation to feed subsequent A-movement, we would have to assume that the pivot occupies an A-position. Thus, the existence of raising-to-object seems to support Guilfoyle, et al.'s (1992) account of externalization as movement to SpecIP, rather than the analysis presented in 3.1.

As evidence that the derived object occupies an A-position, Paul & Rabaovololona (1998) note that it is marked with morphological objective case: When the derived object is a proper name, the oblique prefix *an-* is required (cf. (164) above), and when it is a pronoun, the objective form is used, as shown in (166). Furthermore, this constituent may raise to become the EA of the matrix clause, triggering AccP morphology on the matrix verb (167), showing that it bears abstract accusative case.⁴⁴

⁴³ This would be consistent with the descriptive generalization (mentioned in 3.3.1) that the pivot position is an escape hatch for extraction from embedded clauses.

⁴⁴ Sentences such as (167), in which the logical argument of an embedded verb is mapped to the matrix EA position, bear a striking resemblance to the long-distance externalization examples discussed in 3.3:

- (i) a. Kasain-dRasoā hosasana ny...zaza
 AccP.intend-Rasoā Irr-DatP.wash Det child
 "The child, Rasoā intends to wash (her)"
 b. Heverin-dRasoā novangian'ny lehilahy ny...zaza
 AccP.think-Rasoā Pst-DatP.visit-Det man Det child
 "The child, Rasoā thinks that the man visited (her)"

However, I believe that the two constructions are actually quite different syntactically. Notice that the sentences in (i) lack the particle *ho*. As the sentences in (ii)–(iii) show, there is a strong correlation between the presence of *ho* and the ability of the externalized argument to appear in the matrix object position:

- (166) a. Mamangy *anay* Rakoto
 NomP.visit 1ex Rakoto
 “Rakoto is visiting us”
- b. Mihevitra *anay* [ho namono an’ily akoho] Rakoto
 NomP.think 1ex Pst-NomP.kill Obj-that chicken Rakoto
 “Rakoto thinks of us that (we) killed that chicken”
- (167) a. Heverin-dRakoto [ho namono an’ily akoho] Ranaivo
 AccP.think-Rakoto Pst-NomP.kill Obj-that chicken Ranaivo
 “Ranaivo, Rakoto thinks (of him) that (he) killed that chicken”
- b. Heverin-dRakoto [ho novonoin-dRanaivo] ily akoho
 AccP.think-Rakoto Pst-AccP.kill-Ranaivo that chicken
 “That chicken, Rakoto thinks (of it) that Ranaivo killed (it)”

That RTO involves movement to an A-position is further suggested by the fact that derived objects may not reconstruct into the embedded clause: As shown in (168a-b), an anaphor in the matrix derived object position may be bound by the matrix subject, but not by an embedded subject (Travis 1997). (Compare (168b) with the grammatical sentence in (168c), illustrating the reconstruction effects discussed in 3.2.1. This contrast shows that the ill-formedness of (168b) is not merely the result of the anaphor having raised over its antecedent):

- (168) a. Mihevitra ny tenany_i [ho hajain’ny ankizy] Rabe_i
 NomP.think Det self-3 AccP.respect-Det children Rabe
 “Rabe_i believes himself_i to be respected by the children”

- (ii) a. Heverin-dRakoto ho novonoin-dRanaivo ily akoho
 AccP.think-Rakoto Pst-AccP.kill-Ranaivo that chicken
 “That chicken, Rakoto believes (of it) that Ranaivo killed (it)”
- b. Mihevitra *an’ily akoho* ho novonoin-dRanaivo Rakoto
 NomP.think Obj-that chicken Pst-AccP.kill-Ranaivo Rakoto
 “Rakoto believes of the chicken that Ranaivo killed (it)”
- (iii) a. Heverin-dRasoa novangian’ny lehilahy ny zaza
 AccP.think-Rasoa Pst-DatP.visit-Det man Det child
 “The child, Rasoa thinks that the man visited (her)”
- b. * Mihevitra *ny zaza* novangian’ny lehilahy Rasoa
 NomP.think Det child Pst-DatP.visit-Det man Rasoa
 “Rasoa thinks the child that the man visited (her)”

To explain this difference, I suggest that in the RTO construction, the verb assigns abstract accusative case to the derived object, whereas in the sentences in (i), accusative case is assigned to the clause as a whole. Thus, *ily akoho* in (ii-a) starts out in the matrix object position and moves from there to the EA position, triggering AccP marking on the matrix verb. In (iii-a), by contrast, *ny zaza* starts out in the embedded object position, and externalization involves clausal pied-piping (which triggers AccP marking on the matrix verb) followed by subextraction, as detailed in 3.3.2.

- b. * Mihevitra ny tenany_i [ho hajain'ny ankizy_i] izahay
 NomP.think Det self-3 AccP.respect-Det children lex
 “We believe themselves_i to be respected by the children_i”
- c. Hajain'ny ankizy_i ny.....tenany_i
 AccP.respect-Det children Det self-3
 “Themselves_i the children_i respect”

Notice, however, that the RTO construction poses a problem for the A'-movement analysis of externalization *only* if we assume that the derived object actually raises out of the embedded clause. An alternative approach would be to assume that the derived object is base-generated in the matrix clause, and coindexed with an operator-variable chain inside the embedded clause, as in (169) (cf. Davies 2000b, who argues for a similar analysis of RTO constructions in Madurese, Javanese, Indonesian, and the Philippine languages). If the derived object does not actually raise from the embedded clause, then we are free to treat the EA position as an A'-position without worrying about the problem of improper movement.

- (169) Mihevitra an'ilay akoho_i [Op_i ho novonoin-dRanaivo t_i] Rakoto
 NomP.think Obj-that chicken Pst-AccP.kill-Ranaivo Rakoto
 lit. “Rakoto thinks (of) that chicken_i [Op_i Ranaivo killed t_i]”

Configurations of this sort, in which an operator-variable chain in a lower clause is identified through coindexation with a higher noun phrase, are familiar from relative clause constructions. Note also Chomsky's (1981, 1982) analysis of tough-movement in English, where the subject of the *tough* predicate is base-generated in the higher clause, and receives its θ -role through transmission from a null operator in the lower clause:

- (170) That chicken_i was easy [Op_i for Ranaivo to kill t_i]

For the sake of concreteness, I will adopt the following analysis of RTO predicates: Verbs such as *hever* “think, believe” may select either a FrcP complement headed by *fa* (as in (160b)), or a small clause complement, labeled XP in the following tree:

- (171)
-
- ```

graph TD
 XP --> DPi[DPi
an'ilay akoho]
 XP --> X_prime[X']
 X_prime --> X[X]
 X_prime --> WhPi[WhPi]
 WhPi --> Op_i[Opi]
 WhPi --> Wh_prime[Wh']
 Wh_prime --> novonoin[novonoin-dRanaivo ti]

```

The derived object (*an'ilay akoho* “that chicken” in (169)/(171)) is the subject of this small clause, generated in the specifier of XP, from which it raises into the SpecAsp,P position of the

matrix verb to check its abstract accusative case feature (cf. 2.3.3 on accusative case assignment). The complement of  $X^0$  is a WhP constituent containing a null operator in its specifier. This WhP is interpreted somewhat like an (indefinite) headless relative clause or free relative construction, which ranges over a set of individuals that bear the property denoted by the embedded predicate. Thus the literal meaning of (168) is something like “Rakoto believes that chicken [to be] what Ranaivo killed”.

Note that, as in small clauses generally, the DP subject and WhP complement of  $X^0$  stand in a predication relation. Since the WhP complement gets its reference from the null operator in its specifier, this ensures that the DP subject of  $X^0$  will be coindexed with the trace in the embedded clause, and interpreted as a thematic argument of the embedded verb.

This analysis captures all of the relevant properties of the RTO construction. The derived object extracts from its base position in SpecXP to check case, and hence fails to form a constituent with the embedded clause. Meanwhile, the null operator raises through the specifier of PivP on its way to the embedded SpecWhP position, thereby triggering the appropriate voice morphology on the embedded verb (cf. 3.4.1). The derived object is coindexed with the null operator via predication, hence the impression that the derived object is acting as the pivot of the embedded verb.

Notice also that this account allows for a different explanation of the binding issue mentioned above, namely that an anaphor in the derived object position may not reconstruct into the binding domain of an embedded subject, as shown by the ungrammaticality of (172). If the derived object starts out in the matrix clause, then clearly there is no position in the embedded clause into which it could reconstruct. (172) thus violates both Condition A (there is no local c-commanding antecedent for *ny tenany*) and Condition C (*ny tenany* c-commands the R-expression *ny ankizy*, with which it is coindexed, and thus A-binds it).<sup>45</sup>

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<sup>45</sup> At first glance, this argument would appear to be incompatible with the alternative account of externalization which I suggested at the end of 3.2.3 (to account for the absence of weak crossover effects), namely that the EA is base-generated in SpecTopP and linked to a null operator in SpecPivP (i).

- (i)  $[_{TopP} EA_i [_{PivP} Op_i [_{TP} \dots t_i \dots ] ] ]$

If we were to accept the story in (i), we would need to allow EAs to be interpreted in the trace position of a null operator with which they are coindexed, as in Barss (1984, 1986), in order to explain the grammaticality of sentences such as (ii). If *ny tenany* is linked to a null operator with its trace in the scope of *ny ankizy* in both (ii) and (172), then why can *ny tenany* be bound by *ny ankizy* in the former case, but not the latter case?

- (ii) Hajain’ny ankizy ny...tenany  
 AccP.respect-Det children Det self-3  
 “Themselves, the children respect”

However, there is a crucial difference between the example in (172) and the one in (ii): In (ii), the reflexive is sitting in an A'-position (SpecTopP), while in (172) it is sitting in an A-position (the derived object position). Barss (1984) argues that the antecedent of a null operator may form an A'-chain with that operator and its trace only if the antecedent is in an A'-position (given the natural assumption that an A'-chain can contain only one set of case- and  $\theta$ -features). Thus, even if we assume that EAs in Malagasy do not extract from the predicate phrase, but are base-generated in SpecTopP and linked to a null operator, we would still predict that reconstruction of the anaphor is possible in (ii) but not in (172).

- (172) \* Mihevitra ny tenany<sub>i</sub> [ ho hajain'ny ankizy<sub>i</sub> ] izahay  
 NomP.think Det self-3 AccP.respect-Det children lex  
 “We believe themselves<sub>i</sub> to be respected by the children<sub>i</sub>”

Finally, this analysis overcomes a conceptual problem with the traditional account of RTO, whereby the derived object extracts from the embedded EA position (identified as a subject position, SpecIP): If the derived object raises into the matrix clause in order to check its case feature, then it must be unable to check this feature in the embedded clause. Yet it is unclear why this should be, since the embedded clause is tensed (cf. (161) above), and should thus have a T head capable of checking a case feature. Under the small clause analysis in (171), the derived object is generated outside the embedded clause, and must raise into the matrix SpecAsp<sub>r</sub>P to check its case feature; it is coindexed with a null operator, which checks its case feature inside the embedded clause.

As a counterobjection to this, one might observe that case-driven movement out of tensed clauses, while impossible in English, has been argued to exist in other languages, as discussed by Ura (1996). Consider the example in (173b) below from Standard Arabic (Salih 1985, Ouhalla 1994a), in which the direct object of the matrix verb, *l-taalib-a* “the student”, bears a thematic relation to the embedded verb “know” (cf. (173a), in which *l-taalib-a* is in the embedded clause):<sup>46</sup>

- (173) a. Dhanan-tu [ 'anna Zaynab-a ta-'rifi l-taalib-a ]  
 believed-1s that Zaynab-Acc 3sF-know the-student-Acc  
 “I believed that Zaynab knew the student”
- b. Dhanan-tu l-taalib-a [ 'anna Zaynab-a ta-'rifi-hu ]  
 believed-1s the-student-Acc that Zaynab-Acc 3sF-know-3sM  
 “I believed that Zaynab knew the student”  
 lit. “I believed the student<sub>i</sub> that Zaynab knew him<sub>i</sub>”

Ura (1996) argues that (173b) involves a kind of successive-cyclic A-movement. Specifically, he argues that *l-taalib-a* “the student” raises to become the matrix object by using the embedded subject position (specifically, the outer specifier of the embedded TP) as an escape hatch. His derivation proceeds more or less as in (174): We begin with the structure in (174a), in which the embedded subject *Zaynab-a* has raised from its  $\theta$ -position (the SpecvP of the lower clause) to become the specifier of TP, thereby checking the EPP- and  $\phi$ -features of T. Ura argues that in Standard Arabic the EPP- and case-features of T may enter into multiple checking relations, which in turn means that TP may host multiple specifiers (see below). Thus, T may optionally attract the embedded direct object, causing the latter to raise and become the outer specifier of TP, as in (174b).<sup>47</sup> TP then merges with the complementizer *'anna* to form CP, which merges

<sup>46</sup> Notice that the embedded subject *Zaynab* receives morphological accusative case in these examples. Following Watanabe (1993), Ura assumes that the embedded subject receives case from T<sup>0</sup>, which raises and adjoins to the complementizer at LF.

<sup>47</sup> Importantly, Ura must assume that although the object checks the EPP-feature of T in (174b), T does *not* check the case feature of the object. To allow for this, he proposes a Last Resort condition on feature-checking, which per-

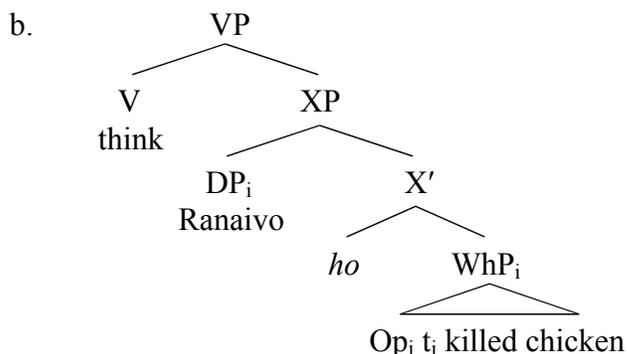


- (176) \* Marary ve ny zaza ny vehivavy?  
 NomP.sick Qu Det child Det woman  
 “The woman, is (her) child sick?”

Thus, even within the context of Ura’s theory, the traditional analysis of the Malagasy RTO construction remains problematic. No such problems exist under the small clause analysis of RTO, according to which the derived object is generated outside the embedded clause.

A final remark on the small clause analysis concerns the placement of the particle *ho*, which intervenes between the derived object and the embedded verb. There are a number of possibilities: *Ho* may be the head of the embedded WhP, or possibly the head of some functional projection above the small clause, which attracts the small clause subject into its specifier to check a formal feature. For the sake of concreteness, I will assume that *ho* is the head of the small clause itself, as in (177):

- (177) a. Mihevitra an-dRanaivo [ *ho* namono an’ily akoho ] Rakoto  
 NomP.think Obj-Ranaivo Pst-NomP.kill Obj-that chicken Rakoto  
 “Rakoto thinks of Ranaivo that (he) killed that chicken”



As possible evidence for analyzing RTO complements as small clauses headed by *ho*, note that this particle is also used to introduce nominal and adjectival secondary predicates in resultative constructions:

- (178) a. Namono [ *ho* faty ] ny lehilahy izy.  
 Pst-NomP.kill death Det man 3  
 “They killed the man dead”
- b. Mikapoka [ *ho* fisaka ] ny fantsika amin’ny maritona aho.  
 NomP.hit flat Det nail with-Det hammer 1s  
 “I am hitting the nail flat with the hammer”

Suppose that resultative constructions involve the selection of an NP or AP small clause complement by the verb, as Hoekstra (1988) and others have argued:

- (179) [VP hammer [AP the nail [A' flat ] ] ]

If this analysis is correct, then it is possible to reconcile this use of *ho* with its use in raising-to-object complements: In both cases, *ho* heads a small clause containing a non-verbal predicate—a nominal or adjectival root in the case of resultative constructions, and a free relative CP in the case of RTO.<sup>49,50</sup>

There are other questions about the RTO construction which remain to be answered. The point of this discussion is that plausible analyses of the RTO construction can be formulated without having to assume that movement of the derived object is fed by movement to the pivot position. Thus, the existence of RTO cannot be taken as evidence against treating externalization as an A'-movement operation analogous to topicalization.

### 3.6. Summary of chapter 3

In this chapter I presented evidence to show that externalization (the mapping of a [+specific] DP onto the predicate-external argument position) patterns syntactically with familiar cases of A'-movement such as topicalization, rather than with A-movement operations such as raising-to-subject. On the basis of this evidence, I concluded that the EA is spelled out in an A'-position, the specifier of a left-peripheral C-projection dubbed TopP.

In 3.2 I showed that, like topics and *wh*-phrases in other languages, EAs obligatorily reconstruct for purposes of binding—an expected fact if EAs occupy an A'-position. If externalization were A-movement, we would need to assume that reconstruction from a nominative case-position to a  $\theta$ -position is obligatory in Malagasy, while being non-obligatory or unavailable in other languages.

In 3.3 I showed that externalization may form long-distance dependencies of the type found in *wh*-movement constructions in other languages. The pattern of voice marking in such cases is compatible with a process CP pied-piping of the kind found in Basque *wh*-questions, again suggesting that externalization is A'-movement. In order to reconcile the voice marking facts with an A-movement analysis of externalization, we would need to stipulate that CP complements in Malagasy are islands for extraction while CP subjects are not—a situation at odds with what we find in other languages, and what standard theories of extraction and islandhood would lead us to expect.

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<sup>49</sup> Notice that the direct object precedes *ho* in the raising-to-object construction (177), but follows the resultative predicate in (178). This may or may not be related to the fact that the direct object bears a thematic relation to the matrix verb in (178), but not in (177). I return to this issue in Pearson (in preparation).

<sup>50</sup> Historically, *ho* appears to be cognate with the Bantu infinitival/dative marker *ku-*. This particle is also used as an irrealis/future tense marker for non-verbal predicates (i), and combines with the oblique prefix *an-* (2.3.1) to form benefactive phrases (ii). I believe that these uses are related to the use of *ho* in raising-to-object and resultative constructions (historically, if not synchronically), but for reasons of space I will not pursue the issue here.

- (i) *Ho dokotera ny...rahalahiko*  
 Irr doctor Det brother-1s  
 “My brother is going to be a doctor”
- (ii) *Miasa ho an'ny mpamboly ny...rahalahiko*  
 NomP.work Obl-Det farmer Det brother-1s  
 “My brother works for the farmer”

In 3.4, I showed that the voicing restrictions found in relative clauses, clefts, and *dia-*topic constructions are expected if we analyze the EA as a topic-like A'-element which competes with *wh*-operators for the SpecPivP position, given that *wh*-movement blocks topicalization in a number of languages (including English and Icelandic). On the other hand, if we analyze the EA as a subject, then we must stipulate that only subjects may undergo A'-extraction in Malagasy. This is an unexpected result, given that subjects are less extractable than non-subjects in other languages.

In short, with regard to binding and reconstruction, extractability, and island effects, Malagasy looks 'well behaved' under an A'-movement analysis of externalization, but anomalous under an A-movement analysis.

Moreover, in those respects in which external arguments appear to pattern with subjects, plausible alternative explanations are available which are consistent with an A'-movement analysis, as I showed in 3.5. Concerning the evidence from pronoun morphology suggesting that the EA position is the locus of nominative case assignment, I showed that the so-called nominative case pronouns are actually default forms. As for the claim that pivot-formation feeds raising-to-object (yielding an improper movement configuration if the EA were in an A'-position), I proposed that the derived object in RTO constructions does not extract from the embedded clause, but is instead base-generated in the matrix clause and linked to a null operator in the embedded clause, much as in *tough*-constructions in English.

In the next chapter, I return to an issue which was set aside in this chapter, namely the right-peripheral position of the external argument. I develop a movement-based analysis according to which the derivation of predicate-initial order in Malagasy differs minimally from the derivation of verb-second order in Germanic, thereby reinforcing the parallels between Malagasy EAs and Germanic preverbal topics noted in this chapter.