

MALAGASY BACKWARD OBJECT CONTROL

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Backward control is an obligatory interpretational dependency between an overt controller and a nonovert controllee in which the controllee is structurally superior to the controller: *Meg persuaded Δ_i [Ron_i to give up]*. It contrasts with ordinary forward control, in which the controller is structurally higher: *Meg persuaded Ron_i [Δ_i to give up]*. Although backward control has been previously documented (Polinsky & Potsdam 2002a), clear cases are rare. This article presents an alternation between forward and backward object control in the Austronesian language Malagasy and argues for the backward-control structure. Backward control is thus a reality and needs to be incorporated into any comprehensive theory of control. The article argues against an analysis of backward control that identifies the controllee as the null pronominal *pro*.*

Keywords: Malagasy, control, backward control, object control, *pro*

1. INTRODUCTION. I take as a starting point Bresnan's (1982) description that control is an obligatory interpretational dependency between two thematic argument positions in which the referential properties of an overt one, the CONTROLLER, determine the referential properties of a nonovert one, the CONTROLLEE. Pretheoretically, there at least two possible realizations of this relationship. In the canonical FORWARD CONTROL case, the controller is structurally superior to the controllee (represented atheoretically as Δ).

(1) I persuaded Kim_i [Δ_i to smile].

↑ ↑

CONTROLLER CONTROLLEE

In what has become known as BACKWARD CONTROL, the controllee is structurally superior to the controller, as in the hypothetical English example in 2. 'Backward' here simply means that the controller/controllee relationship is opposite that of the usual, forward-control situation.

(2) I persuaded Δ_i [Kim_i to smile].

↑ ↑

CONTROLLEE CONTROLLER

Before continuing, a word about terminology is in order. The terms controller and controllee were developed early on with only the English forward-control case in mind. The controller was structurally superior and overt, and linearly preceded the position of the controllee. The controllee was structurally inferior and unpronounced, and linearly followed the controller. Because structural position, linear order, and overtiness are conflated, it is not immediately obvious how these terms should be applied to the backward-control case. I use them in the following way: controller and controllee are descriptive terms based on an understanding of control as an anaphoric or cataphoric coindexation relationship. The relevant property distinguishing controller and controllee

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is phonological, not structural or linear: controller refers to the overt noun phrase in a control relationship. Thus, controller refers to the overt element and controllee refers to the nonovert element. The terms are independent of the structural or linear relationship between the two elements.

Recent work suggests that backward control is an empirical reality. Both subject and object backward-control variants have been claimed for a variety of typologically diverse languages. Backward subject control has been claimed for Malagasy (Polinsky & Potsdam 2002b), Tsez (Nakh-Daghestanian) (Polinsky & Potsdam 2002a), Mizo (Sino-Tibetan) (Subbarao 2003), Telugu (Dravidian) (Haddad 2007, 2009), Romanian (Alboiu 2007, Alexiadou et al. 2009), Omani Arabic (Al-Balushi 2008), Greek (Alexiadou et al. 2009), and Spanish (Alexiadou et al. 2009). Backward object control may exist in Japanese (Kuroda 1965, 1978, 1999, Harada 1973, Fujii 2004, 2006, Narita 2007), Brazilian Portuguese (Farrell 1995), and Korean (Monahan 2003), although these cases are less clear.

Forward-control phenomena have been at the forefront of generative linguistic theorizing for the last forty years, starting with Rosenbaum's (1967) seminal work on English. Since then, research has flourished in a diverse literature that is too large to cite here (see Engh & Kristoffersen 1997). There are numerous reasons for the centrality of control (see Davies & Dubinsky 2004, 2006, 2007a for some discussion). On the empirical front, it is a robust and easily identifiable phenomenon, found widely in the languages of the world. Furthermore, control has been defined and understood in such a way that it can be and has been extended to potentially similar, but at the same time disparate, phenomena. The goal has been to have the widest empirical coverage with existing theoretical machinery. On the theoretical front, the phenomenon is at the intersection of the lexicon, syntax, and semantics. The details of an analysis of control will therefore likely have consequences for a wide range of important topics within syntactic theory: the representation of argument structure, crosslinguistic patterns of complementation, the existence and identity of empty categories, binding, the role of tense and finiteness in syntax, case and agreement, the mapping between the lexicon and syntactic structure, and others. Consequently, control serves as an optimal test case for a grammatical theory as a whole since its analysis typically relies on a large set of central assumptions. It is unsurprising, then, that control persists as a test case for new grammatical theories and paradigm shifts within a theory. As Davies & Dubinsky 2007a:3 states, 'control continues to provide an excellent window into generative models of syntax, and a useful tool for measuring the validity of their claims'. Backward control is important within this context since it broadens the scope of languages, phenomena, and data that a theory of control must account for.

This article has two goals. The primary one is to provide evidence for an alternation between forward and backward object control in the Austronesian language Malagasy. An example is given in 3, in which the boldfaced object controller alternates between the matrix object position in 3a (forward control) and the embedded subject position in 3b (backward control). The left edge of the embedded clause is indicated to help show clause membership.

- (3) a. *nampahatsiahivan' i Soa **ahy**_i [hohidiana Δ_i ny varavaran-dakozy*
 remind Soa me lock the door-kitchen
 b. *nampahatsiahivan' i Soa Δ_i [hohidia- **ko**_i ny varavaran-dakozy*
 remind Soa lock I the door-kitchen
 'Soa reminded me to lock the kitchen door.'

The second goal is to argue against a particular analysis of the backward-control pattern in which the controllee Δ in 3b is taken to be the empty category *pro*, a null pronominal. Such an analysis has had some success for a similar construction in Korean (Cormack & Smith 2004, Choe 2006, Polinsky et al. 2007); I argue, however, that it is not appropriate for Malagasy.

I do not present a formal analysis of backward control here. The basic analysis within the generative framework of the MOVEMENT THEORY OF CONTROL (Hornstein 1999, 2003) is developed in Polinsky & Potsdam 2002a. Refinements to that analysis can be found in Monahan 2003, Potsdam 2006a, Haddad 2007, and Haddad & Potsdam 2010. Polinsky & Potsdam 2002a discusses why the phenomenon is problematic for more traditional principles-and-parameters approaches to control that use the empty category PRO. Sells 2006 provides an analysis within lexical-functional grammar.

The article is organized as follows. I first discuss some basics of Malagasy morphosyntax that are important for the article, and also introduce the relevant control structures, both forward and backward object control. Next, empirical evidence for the backward-control option is provided, with special emphasis on syntactic evidence for the unpronounced controllee in 3b. I then develop an analysis of backward control, taking the empty category in 3b to be the null pronominal *pro*, and provide argumentation against this analysis for Malagasy, before concluding.

2. MALAGASY MORPHOSYNTAX. Section 2.1 lays out my assumptions about Malagasy morphosyntax and §§2.2 and 2.3 introduce the relevant patterns of object control that are central to the rest of the article.

2.1. MORPHOSYNTAX. Malagasy is an Austronesian language spoken by approximately fourteen million people on the island of Madagascar. Malagasy is widely known for its symmetric, Philippine-style voicing system. One way to understand such a voice system is as follows: the core of a Malagasy clause is what I call a **CLAUSELET**, borrowing terminology from Chung 2004. Within the clauselet, there is a relatively rigid ordering of constituents: V + SUBJECT + OBJECT + OBLIQUE + ADJUNCT. To form a complete clause, one constituent from within the clauselet must be externalized to a clause-final position. The grammatical role of this externalized element in the clauselet determines voice morphology on the verb. For this reason, the clause-final element is often called the **TRIGGER**, because it ‘triggers’ specific verbal morphology (Pearson 2005, following Schachter 1987). There are three voices, named after the element that is the trigger, and they are illustrated in 4.¹ When the trigger corresponds to the subject of the clauselet, the verb bears **ACTOR TOPIC (AT)** morphology, 4a; when the trigger corresponds to the object of the clauselet, the verb bears **THEME TOPIC (TT)** morphology, 4b; and when the trigger corresponds to an oblique or nonargument of the verb within the clauselet, the verb bears **CIRCUMSTANTIAL TOPIC (CT)** morphology, 4c. In the examples below, the trigger is italicized in the Malagasy example and its English translation. The verbal morphology gloss is boldfaced. Observe that in non-AT clauses the subject remains inside the clauselet and appears immediately following the verb, in accordance with the ordering above. In fact, the subject is phonologically ‘bonded’ to the verb (Paul

¹ I use the following abbreviations in glossing: 1/2/3: person, ACC: accusative, AT: actor topic, COMP: complementizer, CT: circumstantial topic, DECL: declarative, DFLT: default, FOC: focus, FUT: future, IMP: imperative, LNK: linker, LOC: locative, NEG: negative, NOM: nominative, PREP: preposition, Q: question, RECIP: reciprocal, REL: relativizer, SG/PL: number, TT: theme topic.

1996, Keenan & Polinsky 1998), which is indicated in the orthography using either an apostrophe (') or a hyphen (-) according to the initial sound of the subject noun phrase.

- (4) a. AT verb, subject trigger
 n-i-antso mpiasa *i* Mery²
 PAST-AT-call worker Mary
 'Mary called a/the worker.'³
- b. TT verb, object trigger
 n-antso-in' i Mery ny mpiasa
 PAST-call-TT Mary the worker
 'Mary called the worker.'
- c. CT verb, nonargument/oblique trigger
 n-i-antso-an' i Mery mpiasa ny kiririoka
 PAST-AT-call-CT Mary worker the whistle
 'Mary called the worker with the whistle.'

The generalizations that determine the voice morphology in simple clauses are given in 5a–c and summarized by 5d.

- (5) Malagasy voice morphology generalizations in simple clauses
- The verb bears AT morphology if and only if the trigger corresponds to the subject of the clause.
 - The verb bears TT morphology if and only if the trigger corresponds to the object of the clause.
 - The verb bears CT morphology if and only if the trigger corresponds to an oblique or nonargument of the clause.
 - Voice morphology indicates the grammatical role of the trigger in the local clause.

The Malagasy pronominal system (Rahazarizafy 1960, Rajemisa-Raolison 1969, Keenan & Polinsky 1998, Zribi-Hertz & Mbolatianavalona 1999, Pearson 2005, and references therein) is particularly helpful in distinguishing triggers from nontriggers. Pronouns have three forms, which I label accusative, nominative, and default, following Pearson 2005. The singular paradigm is given in 6.

(6) Malagasy singular pronouns

	ACCUSATIVE	NOMINATIVE	DEFAULT
1st-person singular	ahy	-ko	(iz)aho
2nd-person singular	anao	-nao	ianao
3rd-person singular	azy	-ny	izy

The accusative forms are used in object position. The nominative forms are bound to the verb and indicate the subject in non-AT sentences; they are also suffixed to nouns to mark pronominal possessors. The default forms are used in trigger position and a number of other places, including coordinated noun phrases, modified pronouns, and predicate position (Pearson 2005). The pronouns can be used to identify the various elements in a clause.

The above examples also show that Malagasy verbs contain the tense morphology indicated in 7.

² The morpheme *i* is a determiner used with names that do not begin with *Ra*-.

³ It is preferred that objects not be marked with the determiner *ny*, which I loosely translate as 'the'. Such objects may still be interpreted as definite or indefinite according to context.

(7) Malagasy tense prefixes⁴

past	present	future/irrealis
n(o)-	Ø-	h(o)-

There are no morphologically nonfinite verb forms. Future/irrealis verb forms often substitute for English infinitives, a fact that we return to in the discussion of control below.

There has been much theorizing about Malagasy clause structure in the generative literature of the last fifteen years (Keenan 1976, 1995, Randriamasimanana 1986, Guilfoyle et al. 1992, MacLaughlin 1995, Pensalfini 1995, Paul 2000, Pearson 2001, 2005, and others). The debates center largely on the syntactic status of the clause-final trigger. The traditional approach to Malagasy clause structure, including descriptive grammars (Rahajarizafy 1960, Rajemisa-Raolison 1969, Rajaonarimanana 1995) and the early generative literature built on Keenan 1976, takes the trigger to be the/a true subject of the clause, contrary to my description above. Under this view, theme-topic and circumstantial-topic clauses are like English passives in advancing an object, oblique, or nonargument to subject position.⁵ The trigger is thus in an A(rgument)-position. More recent work argues that the trigger is actually a topic-like element in an A'- (nonargument) position (MacLaughlin 1995, Pearson 2005, Hyams et al. 2006). Under this view, Malagasy is like verb-second languages in which some constituent in a clause must be moved to a clause-peripheral A' topic position. The verbal morphology registers the grammatical role of the topicalized element. This is closer in spirit to my description above, although I take no stand on the nature of the trigger position. Each analysis has its strengths and weaknesses (see Paul & Travis 2003, Pearson 2005 for discussion) and distinct terminology. I continue with the view that the postverbal noun phrase in non-AT clauses is a subject, recognizing that this is in fact controversial, and I continue to use the term trigger to refer to the noun phrase that triggers the voice morphology and/or occurs clause-finally.

I believe that my claims about the existence of backward control can be justified independently from the above issues and from how clause structure is implemented, and I make the following minimal assumptions. Clauses consist of a clauselet followed by the trigger. There is much evidence in the Malagasy literature for this basic bifurcated constituency (Keenan 1976, 1995, and others). Within the clauselet, the ordering of arguments is VERB + SUBJECT + OBJECT + OBLIQUE. I assume that left-to-right order within the clauselet corresponds to c-command. Under this unmarked word order, elements on the left are structurally higher than elements to the right (see Guilfoyle et al. 1992). The trigger is structurally outside of the clauselet.

(8) [[V SUBJECT OBJECT OBLIQUE]_{clauselet} TRIGGER]

I assume that the trigger reaches its position via movement from within the clauselet, although little hinges on this assumption. I represent this movement using strikethrough of the clauselet-internal lower copy. Thus the AT and TT clauses in 4a,b have the representations in 9.

⁴ With the past and future prefixes, *nolho-* is used before consonants, and *n/h-* is used before vowels. It is often stated that the present-tense marker is *m-* in the actor topic voice and *Ø-* elsewhere. I follow Pearson 2001 in taking *m-* to be an AT voice marker that disappears in the past and future tenses.

⁵ Under this view, what I have called a clauselet is in fact a predicate. The case forms that I have called nominative and default are called genitive and nominative, respectively (Keenan 1976, Keenan & Polinsky 1998).

- (9) a. [[niantso i-Mery mpiasa]_{clauselet} [i Mery]_{trigger}]
 call.AT worker Mary
 'Mary called a/the worker.'
 b. [[nantsoin' i Mery ny-mpiasa]_{clauselet} [ny mpiasa]_{trigger}]
 call.TT Mary the worker
 'Mary called *the worker*.'

With this much as background, I turn to object control structures.

2.2. OBJECT CONTROL. Malagasy has a typical range of three-argument object-control verbs, including *manery* 'force', *manontany* 'ask', *mandresy lahatra* 'convince, persuade', *mampahatsiahy* 'remind', *milaza* 'say to', *miteny* 'tell', *manampy* 'help', *mian-gavy* 'request', *manome alalana* 'to give permission', *manambitamby* 'to cajole, persuade gently', *mibaiko* 'to order', *mandodona* 'to press someone', *manentana* 'to exhort', *maniraka* 'to send on an errand'.⁶ As with simple clauses, the voice morphology allows such verbs to appear in a number of syntactic patterns. A paradigm with *manery* 'force' in the three voice forms is given in 10.⁷ I once again italicize the trigger in the Malagasy and its English translation.

- (10) a. AT matrix verb, subject trigger
 nanery ahy [h-amafa trano] i Mery
 force.AT 1SG.ACC FUT-sweep.AT house Mary
 'Mary forced me to sweep the house.'
 b. TT matrix verb, object trigger
 noteren' i Mery [h-amafa trano] aho
 force.TT Mary FUT-sweep.AT house 1SG.DFLT
 'Mary forced *me* to sweep the house.'
 c. CT matrix verb, other trigger
 (??)naneren' i Mery ahy [ho-fafana] ny trano
 force.CT Mary 1SG.ACC FUT-sweep.TT the house
 'Mary forced me to sweep *the house*.'

In 10a, the clause-final trigger corresponds to the subject of 'force' and the matrix verb is in the AT form. In 10b, the trigger corresponds to the object of 'force' and the matrix verb bears TT morphology. In 10c, no argument of 'force' is externalized; instead, the trigger corresponds to the object of the embedded clause. This requires that the matrix verb be in the CT form. Example 10c, which is central to the ensuing discussion, has the CT verb *nanerena* 'force.CT' followed by its three arguments: the subject, the direct object, and an oblique clausal argument. This is the expected ordering of arguments within the matrix clauselet. I assume that the bracketed subordinate clause is syntactically an oblique complement. The clause-final trigger of the matrix clause is the object from within this oblique complement clause. The matrix control verb is in the CT form because neither its subject nor its object is the matrix trigger.⁸ Example 10c is reduced in acceptability, a degradation that I put aside for now. I return to the issue below and claim that it results from nonsyntactic factors. In all three cases in 10,

⁶ See Randriamasimanana 1986, Law 1995, Paul & Ranaivoson 1998, and Pearson 2001 for earlier discussions of various aspects of the syntax of object-control verbs.

⁷ I use *manery* 'force' in most of the data below, but the patterns are replicated with the other verbs as far as I have tested.

⁸ See §3.2 for a more accurate discussion of the voice morphology when the trigger comes from an embedded clause.

the subject of the complement clause is unpronounced, as is expected of the controllee in a forward-control construction. I return to this below.

As mentioned earlier, Malagasy does not have any infinitival morphology. All verbs bear tense morphology, and most complement clauses that translate as English infinitives simply have a verb with voice morphology and the future/irrealis morpheme *h(o)-*. Nevertheless, such complement clauses behave like English infinitives in a number of ways. First, they allow or require an unexpressed argument, the controlled argument. Second, they are syntactically deficient in that they do not permit an overt trigger in their clause. This is much like English infinitives, which generally do not license an overt subject. The subject-control verb *manaiky* 'agree' in 11 and 12 illustrates this restriction. Example 11a is the grammatical forward-control baseline. In accordance with the restriction, there is no trigger in the complement clause; an overt trigger is in fact ungrammatical, 11b.

- (11) a. *manaiky* [h-*amono ny akoho*] *ny mpianatra*
 agree.AT FUT-kill.AT the chicken the student
 'The student agrees to kill the chicken.'
 b. **manaiky* [h-*amono ny akoho i Paoly*] *ny mpianatra*
 agree.AT FUT-kill.AT the chicken Paul the student
 ('The student agrees for Paul to kill the chicken.')

The problem with 11b is syntactic, as evidenced by the fact that the intended meaning can be expressed in other ways. In 12a, the complement clause is a finite CP; in 12b, the intended trigger has undergone raising to object so as to be licensed in the matrix clause; and in 12c, the complement clause is expressed as a nominal. All variants allow the expression of the embedded verb's agent.

- (12) a. *manaiky ny mpianatra* [*fa h-amono ny akoho i Paoly*]⁹
 agree.AT the student that FUT-kill.AT the chicken Paul
 'The student agrees that Paul will kill the chicken.'
 b. *manaiky an' i Paoly* [h-*amono ny akoho*] *ny mpianatra*
 agree.AT ACC Paul FUT-kill.AT the chicken the student
 'The student agrees for Paul to kill the chicken.'
 c. *manaiky* [*ny hamonoan' i Paoly ny akoho*] *ny mpianatra*
 agree.AT the killing Paul the chicken the student
 'The student agrees to Paul's killing the chicken.'

Despite the lack of a morphological distinction then, I nevertheless assume that Malagasy has two types of clauses that parallel the English finite/nonfinite distinction. For convenience, I call them INDEPENDENT clauses and DEPENDENT clauses. Root clauses and those embedded under the complementizer *fa* 'that' are independent. They have a trigger bearing default case and may have an independent tense specification (past, present, or future/irrealis) chosen by the speaker. Control complements, in contrast, are dependent clauses. Voice morphology is present in dependent clauses, indicating that they have a trigger; however, it simply cannot surface there. I state this in 13.

- (13) Dependent clauses do not allow an overt trigger.

In contrast to independent clauses, dependent clauses have a dependent tense specification, which is restricted to future/irrealis *h(o)-*, in the same way that English nonfinite

⁹ Finite CPs generally follow the trigger in Malagasy (Keenan 1976, Potsdam & Polinsky 2007).

clauses are restricted in having the infinitival marker *to*.¹⁰ I do not gloss the future/irrealis marker in the examples that follow.

These assumptions largely account for the embedded-clause voice morphology seen in the examples in 10 when combined with the assumptions about clause structure from §2.1. I offer a structural representation for the examples, beginning with 14a, in which the matrix verb ‘force’ is in the AT form. Example 14a repeats 10a. The embedded verb ‘sweep’ is also in the AT form, which indicates that the unpronounced embedded subject is the trigger of the embedded clause and also the controllee, as shown in the structure in 14b. Example 14b shows that control structures are biclausal. Each clauselet is immediately followed by its respective trigger. The embedded verb ‘sweep’ cannot appear in the TT form, 14c, as that would entail that the overt object is the trigger; however, dependent clauses do not license an overt trigger, 13.

(14) AT matrix verb, subject trigger

- a. nanery ahy [hamafa trano] *i Mery* (= 10a)
force.AT 1SG.ACC sweep.AT house Mary
‘Mary forced me to sweep the house.’
- b. [[nanery ~~i~~Mery ahy_i [[hamafa Δ_i trano] Δ_i]] *i Mery*
force.AT 1SG.ACC sweep.AT house Mary
- c. *nanery ahy [hofafana trano] *i Mery*
force.AT 1SG.ACC sweep.TT house Mary

Example 15a repeats 10b, in which the matrix verb ‘force’ is in the TT form. The same reasoning applies to 15a to explain why that embedded verb ‘sweep’ is also in the AT form. Its form again indicates that the unpronounced embedded subject is the trigger of the embedded clause and the controllee, 15b. TT voice morphology on the embedded verb ‘sweep’ is again ruled out, 15c, because the object cannot be the trigger since it is overt.¹¹

(15) TT matrix verb, matrix object trigger

- a. noteren’ *i Mery* [hamafa trano] *aho* (= 10b)
force.TT Mary sweep.AT house 1SG.DFLT
‘Mary forced *me* to sweep the house.’
- b. [[noteren’ *i Mery* ahy_i [[hamafa Δ_i trano] Δ_i]] *aho*
force.TT Mary sweep.AT house 1SG.DFLT

¹⁰ This is a simplification. The tense of some Malagasy control complements may be nonfuture/irrealis. It remains the case, however, that the tense morphology is selected or determined by the matrix verb. It is either future or the same as the higher verb. The tense cannot be independently specified. See the uses of *mila* ‘need’ in n. 24 and *manandrana* ‘try’ in ex. 44.

¹¹ The embedded verbs in 14a and 15a could be in the TT form if the object were the trigger and thus nonovert in satisfaction of 13 ((i), (ii)). In such cases the object/trigger is also the controllee. The embedded subject is then overt and appears immediately after the verb.

- (i) a. nanery ny zaza [hozahan’ ny dokotera] *aho*
force.AT the child examine.TT the doctor 1SG.DFLT
‘I forced the child to be examined by the doctor.’
- b. [[nanery ~~aho~~ ny zaza_i [[hozahan’ ny dokotera Δ_i] Δ_i]] *aho*
force.AT the child examine.TT the doctor 1SG.DFLT
- (ii) a. notere-ko [hozahan’ ny dokotera] ny zaza
force.TT-1SG.NOM examine.TT the doctor the child
‘I forced *the child* to be examined by the doctor.’
- b. [[notere-ko ny zaza_i [[hozahan’ ny dokotera Δ_i] Δ_i]] ny zaza
force.TT-1SG.NOM examine.TT the doctor the child

- c. *noteren' i Mery [hofafana trano] *aho*
 force.TT Mary sweep.TT house 1SG.DFLT

Finally, 16a repeats 10c, in which the matrix verb is in the CT form. In contrast to the above examples, the embedded verb is correctly in the TT form because the trigger is the embedded object, which ultimately surfaces as the matrix trigger. The embedded subject is the controllee. This is shown in 16b. The embedded verb cannot appear in the AT form, 16c, in which the embedded subject is the embedded trigger and the controllee, because of restrictions on nonlocal triggers. If a trigger originates in an embedded clause, it must also be the trigger of that clause. This holds of 16a but not 16c.

(16) CT matrix verb, embedded object trigger

- a. (??)naneren' i Mery ahy [hofafana] *ny trano*
 force.CT Mary 1SG.ACC sweep.TT the house
 'Mary forced me to sweep *the house*.'
- b. [[naneren' i Mery ahy_i [[hofafana Δ_i ~~ny trano~~] ~~ny trano~~]]
 force.CT Mary 1SG.ACC sweep.TT
ny trano
 the house
- c. *naneren' i Mery ahy [hamafa] *ny trano*
 force.CT Mary 1SG.ACC sweep.AT the house

Equipped with this description of the well-formedness of the basic forward-object-control cases, I turn to backward control.

2.3. BACKWARD OBJECT CONTROL. The main fact of interest in this article is that in the CT use of the object-control verb, the theme (the forcee) can be expressed in either the matrix clause or the complement clause. In 16a,b, repeated below, the boldfaced theme is expressed in the matrix-clause object position. It is coindexed with the null controllee in the embedded-clause subject position. This is forward object control. In 17, the theme surfaces in the embedded-clause subject position and is coindexed with the null controllee in the matrix object position.¹² This is backward object control. There is no detectable meaning difference between the two examples according to my consultants.¹³

(16) forward object control

- a. (??)naneren' i Mery **ahy** [hofafana] *ny trano*
 force.CT Mary **1SG.ACC** sweep.TT the house
 'Mary forced me to sweep *the house*.'
- b. [[naneren' i Mery ahy_i [[hofafana Δ_i ~~ny trano~~] ~~ny trano~~]]
 force.CT Mary 1SG.ACC sweep.TT
ny trano
 the house

(17) backward object control

- a. (??)naneren' i Mery [hofafa- **ko**] *ny trano*
 force.CT Mary sweep.TT **1SG.NOM** the house
 'Mary forced me to sweep the house.'

¹² Remember that the controller is the overt element and the controllee is the nonovert element in a control relationship, irrespective of their structural positions.

¹³ In some cases, speakers do have a preference for either the forward- or backward-control example, but I have found no patterns.

- b. [[naneren' i Mery Δ_i [[hofafa- ko_i ny-trano] ny-trano]]
 force.CT Mary sweep.TT 1SG.NOM
 ny trano]
 the house

The pronominal form of the theme (boldfaced) in the two examples makes the clause boundaries and the clause membership of the theme particularly clear. In forward control, 16, the theme is the matrix object and takes the accusative form, *ahy* '1SG.ACC'. In backward control, 17, the theme is the postverbal subject of the embedded clause and takes the bound nominative form, *-ko* '1SG.NOM'. The backward-control example is well formed given the morphosyntactic requirements introduced above: the complement clause does not contain an overt trigger (13), and the voice morphology on the two verbs obeys the generalizations in 5. I propose that the backward-object-control example is structurally the same as the forward-control example except that the relationship between the controller and the controllee is reversed, as shown in 16b and 17b.

Before turning to detailed support for this claim, there are two loose ends that need to be tied up. I first clarify why backward object control is seen only when the matrix verb is in the CT form. I then turn to the reduced acceptability of the CT examples seen thus far.

Given an English object-control sentence such as *Mary forced me to sweep the house*, in Malagasy there are four grammatical ways to express this proposition (without additional focus structure) using the voice system. These are repeated in 18.

- (18) a. forward object control, AT matrix verb
 nanery ahy [hamafa trano] i Mery
 force.AT 1SG.ACC sweep.AT house Mary
 'Mary forced me to sweep the house.'
 b. forward object control, TT matrix verb
 noteren' i Mery [hamafa trano] aho
 force.TT Mary sweep.AT house 1SG.DFLT
 'Mary forced *me* to sweep the house.'
 c. forward object control, CT matrix verb
 (??)naneren' i Mery ahy [hofafana] ny trano
 force.CT Mary 1SG.ACC sweep.TT the house
 'Mary forced me to sweep *the house*.'
 d. backward object control, CT matrix verb
 (??)naneren' i Mery [hofafa- ko] ny trano
 force.CT Mary sweep.TT 1SG.NOM the house
 'Mary forced me to sweep *the house*.'

The question now arises as to why the backward-control option is licensed only when the matrix verb is in the CT form and is not allowed when the matrix verb is in its AT or TT forms. That is, why do we get an alternation only in 18c,d? Backward-control variants of 18a,b would require that the theme (boldfaced in the examples below) be in the embedded clause. In what follows, I consider all possible backward-control variants of 18a,b, with all voice possibilities for the embedded verb, and show why they fail.

For the matrix verb in the AT form, the backward-control variants of 18a are as in 19a–c, with the embedded verbs in the AT, TT, and CT form, respectively.

- (19) a. *backward object control, AT matrix verb, AT embedded verb
 *nanery [hamafa trano **aho**] *i Mery*
 force.AT sweep.AT house 1SG.DFLT Mary
 ('Mary forced me to sweep the house.')
- b. *backward object control, AT matrix verb, TT embedded verb
 *nanery [hofafa- **ko** *ny trano*] *i Mery*
 force.AT sweep.TT 1SG.NOM the house Mary
 ('Mary forced me to sweep the house.')
- c. *backward object control, AT matrix verb, CT embedded verb
 *nanery [hamafa- **ko** trano *ny angady*] *i Mery*
 force.AT sweep.CT 1SG.NOM house the spade Mary
 ('Mary forced me to sweep the house with the spade.')

The examples in 19 are all ungrammatical for the same reason: they violate the restriction in 13 that dependent clauses do not permit an overt trigger. There is no other position in which to put the embedded-clause trigger, however, since the matrix clause already has a trigger.

For the matrix verb in the TT form, the backward-control variants of 18b are in 20, again with the embedded verbs in the AT, TT, and CT form, respectively.

- (20) a. *backward object control, TT matrix verb, AT embedded verb
 *noteren' *i Mery* [hamafa trano **aho**]¹⁴
 force.TT Mary sweep.AT house 1SG.DFLT
 ('Mary forced me to sweep the house.')
- b. *backward object control, TT matrix verb, TT embedded verb
 *noteren' *i Mery* [hofafa- **ko** *ny trano*]
 force.TT Mary sweep.TT 1SG.NOM the house
 ('Mary forced me to sweep the house.')
- c. *backward object control, TT matrix verb, CT embedded verb
 *noteren' *i Mery* [hamafa- **ko** trano *ny angady*]
 force.TT Mary sweep.CT 1SG.NOM house the spade
 ('Mary forced me to sweep the house with the spade.')

The examples in 20 are ungrammatical for the same reason as above. The embedded clauses illicitly have triggers. In addition, the matrix clauses in 20 do not have triggers. Putting the embedded trigger in the matrix clause would solve both problems; this is not permitted, however, with the matrix verb in the TT form, which requires that the matrix trigger be the matrix clause's direct object (see 5). Backward control is thus permitted only with the matrix verb in the CT form because only this form allows the desired state of affairs in which the matrix theme is in the embedded clause, the embedded-clause trigger does not surface in its own clause, and the matrix clause has a trigger that is not one of its own arguments.

The second complication with the data is that the CT object-control examples, 18c,d, are degraded in acceptability. The main reason for this is that the structure of such examples is more complex. The embedded object has been made the matrix trigger and there needs to be a good reason, discourse-wise, to do this. That is, the CT examples are not discourse-neutral, in the same way that 21b is not a neutral variant of 21a in English.

- (21) a. Mary forced me to sweep the house.
 b. The house, Mary forced me to sweep.

¹⁴ This example is grammatical with a different structural parse in which *aho* '1SG.DFLT' is the trigger of the matrix clause, 10b.

That this kind of explanation is on the right track is confirmed by the following observation: when there is good reason to make the embedded object the matrix trigger, CT object-control examples are fully acceptable for all speakers.

One situation in which the embedded object needs to be made the matrix trigger is question formation. As is well known about Malagasy, only matrix triggers can be questioned (see Keenan 1976, 1995, Keenan & Comrie 1977, MacLaughlin 1995, Paul 2000, 2002, Pearson 2001, Sabel 2002, Potsdam 2006b, and others for discussion). In order to question a particular constituent, the voice system must be used to first make that element the matrix trigger. For the case at hand, if one wants to question the embedded object in an object-control structure, the CT control structure is obligatory because it is the only way to make the embedded object the matrix trigger, from where it can be questioned. Consequently, the question variants of 22, given in 23, are fully acceptable. WH-questions in Malagasy are formed by fronting the matrix trigger and following it with the particle *no* (glossed FOC(US)). Interrogative clauses that question the embedded object but use the forward-control variants with AT or TT matrix verb forms are completely impossible.

- (22) a. forward object control, CT matrix verb
 (??)naneren' i Mery ahy [hofafana] ny trano
 force.CT Mary 1SG.ACC sweep.TT the house
 'Mary forced me to sweep *the house*.'
- b. backward object control, CT matrix verb
 (??)naneren' i Mery [hofafa- ko] ny trano
 force.CT Mary sweep.TT 1SG.NOM the house
 'Mary forced me to sweep *the house*.'
- (23) a. forward object control, question
 trano-n' iza no naneren' i Mery ahy hofafana?
 house-LNK who FOC force.CT Mary 1SG.ACC sweep.TT
 b. backward object control, question
 trano-n' iza no naneren' i Mery hofafa- ko?
 house-LNK who FOC force.CT Mary sweep.TT 1SG.NOM
 'Whose house did Mary force me to sweep?'

Below, I am not concerned with the degradation in the declarative examples, assuming it not to be syntactically relevant. Most of the examples below are in the form of questions, to facilitate the grammaticality judgments for speakers. With this detail clarified, the next section returns to justifying the backward-control structure.

3. EVIDENCE FOR BACKWARD CONTROL. The goal of this section is to show that the verbs under consideration are object-control verbs in all their uses. They are ditransitive verbs represented by the partial lexical entry in 24. Syntactically, the verbs take two internal arguments, an NP object and a clausal complement, which I represent as CP.¹⁵

¹⁵ I assume that all voice forms of the verb have the same lexical entry, maintaining uniform mapping between θ -roles and syntactic positions. The agent of 'force' is always the external argument; the theme and situation are always internal arguments. One of the arguments becomes the trigger with the appropriate inflectional voice morphology on the verb. A referee suggests an alternative in which the different voices have different mappings: in the AT form, the agent is the external argument, and in the TT form, the theme is the external argument. One difficulty for this approach within the current context is that in the CT control structures of interest, the external argument of the CT verb would not be an argument of the verb at all. I do not see how a lexical remapping of 24 could map an argument with the control verb's CP complement to the external argument position of the control verb.

- (24) *manery* 'force' and similar verbs [__ NP CP]
 θ_{AGENT} θ_{THEME} $\theta_{\text{SITUATION}}$

This claim is not particularly surprising for the forward-control uses given the overt presence of an object that is interpreted as a theme. It is only in the backward-control use that one might hypothesize that there is no NP theme, since it is not overtly expressed. That is, one might hypothesize that in the backward-control use, the verb *manery* means not 'force' but 'cause, bring about', in which there is no theme.

Relevant structural aspects of the backward-control analysis are repeated in 25 and its central claims are in 26. Section 3.1 provides evidence that the control verb has the same argument structure in all its uses. In particular, it always has a theme argument (the forcee). Section 3.2 argues that the control verb in the backward-control instance has a unpronounced syntactic object, represented by Δ in 25, which corresponds to the theme.

- (25) backward object control
 (??)naneren' i Mery Δ_i [hofafa- **ko**_i] ny trano
 force.CT Mary sweep.TT 1SG.NOM the house
 'Mary forced me to sweep the house.'
- (26) central claims of the backward-object-control analysis
 a. The control verb has a semantic theme argument.
 b. The control verb has an unpronounced syntactic object.

3.1. A SEMANTIC THEME ARGUMENT. Evidence that object-control verbs in Malagasy have a semantic theme argument in all their uses comes from similar facts that support this claim for the corresponding English object-control verbs.¹⁶ Synonymy facts, non-agentive themes, and idioms show that the object-control verbs place selectional restrictions on the overt theme, regardless of its syntactic position, either as the object of the matrix clause or the subject of the embedded clause. Such facts are readily accounted for if the theme is always a semantic argument of the control verb.

We have already seen an indication of the uniform existence of a theme: the four examples repeated from 18 are truth-conditionally synonymous. All entail both that I was forced and that I am the intended agent of the sweeping.

- (27) a. forward object control, AT matrix verb
 nanery ahy [hamafa trano] i Mery
 force.AT 1SG.ACC sweep.AT house Mary
- b. forward object control, TT matrix verb
 noteren' i Mery [hamafa trano] aho
 force.TT Mary sweep.AT house 1SG.DFLT
- c. forward object control, CT matrix verb
 (??)naneren' i Mery ahy [hofafana] ny trano
 force.CT Mary 1SG.ACC sweep.TT the house
- d. backward object control, CT matrix verb
 (??)naneren' i Mery [hofafa- ko] ny trano
 force.CT Mary sweep.TT 1SG.NOM the house
 'Mary forced me to sweep the house.'

The claim that the matrix verb selects a theme in all control uses also explains why inanimate themes are anomalous.

¹⁶ Randriamasimanana (1986:512–25) uses some of these tests on AT structures with *manery* 'force' to show that it is an object-control verb (his Equi-2).

- (28) a. forward object control, AT matrix verb
 #nanery ny vato [hianjera ao amin' ilay trano] aho
 force.AT the rock fall.AT LOC PREP that house 1SG.DFLT
- b. forward object control, TT matrix verb
 #notere- ko [hianjera ao amin' ilay trano] ny vato
 force.TT 1SG.NOM fall.AT LOC PREP that house the rock
- c. forward object control, CT matrix verb
 (??)#nanere- ko ny vato [hianjerana] ilay trano
 force.CT 1SG.NOM the rock fall.CT that house
- d. backward object control, CT matrix verb
 (??)#nanere- ko [hianjeran' ny vato] ilay trano
 force.CT 1SG.NOM fall.CT the rock that house
 'I forced the rocks to fall on that house.'

Just as in the English examples, rocks cannot be forced to do something. With object-control verbs at least, the theme must be animate. This is just as true for the backward-control example in 28d.

Lastly, idiom chunks also support the uniform existence of a theme. In order for a piece of an idiom to contribute to the idiomatic interpretation, it must not appear in a syntactic position in which it receives an ordinary θ -role such as theme. If it were to do so, it would get a theme interpretation, not the special idiomatic one. A useful idiom is given in 29.

- (29) torak' Iabay Ilohavohitra
 resemble.TT name name
 lit. 'Iabay resembles Ilohavohitra'
 'In life, it's one difficulty after another.'¹⁷

Embedding the idiom under an object-control verb results in an anomalous interpretation, regardless of where the idiom chunks are realized.

- (30) a. forward object control, CT verb
 #nampahatsiahivan' i Soa an' Iabay toraka Ilohavohitra
 remind.CT Soa ACC Iabay resemble.TT Ilohavohitra
- b. backward object control, CT verb
 #nampahatsiahivan' i Soa torak' Iabay Ilohavohitra
 remind.CT Soa resemble.TT Iabay Ilohavohitra
 '#Soa reminded Iabay to resemble Ilohavohitra.'
 (*'Soa reminded that, in life, it's one difficulty after another.' (no idiomatic meaning))

The impossibility of idiom chunks indicates that the theme is always an argument of the control verb. I conclude that the verbs of interest do have a semantic theme argument, even in the backward-control use.

3.2. A SILENT SYNTACTIC OBJECT. Given that the object-control verbs have a semantic theme argument in all their uses, theoretical considerations lead to the conclusion that there is a syntactic constituent in the verb's clause that bears this theme θ -role, even when it is not visible, as in 25. This follows from general principles-and-parameters-

¹⁷ Iabay and Ilohavohitra are two very similar hills outside the Madagascar capital city of Antananarivo.

internal restrictions that a verb assigns θ -roles only to local constituents in its own clause. Nevertheless, empirical evidence in support of this null syntactic object would be welcome. This section provides arguments in support of this conclusion from a wide range of phenomena: nonlocal trigger extraction patterns, alternations with an overt NP, floating quantifiers, binding theory condition B, and reciprocal licensing.

The first argument comes from the voice morphology generalization concerning nonlocal trigger extraction patterns. The generalization that determines voice morphology in nonlocal trigger extraction is actually distinct from that which determines voice morphology in simple clauses. The generalization for simple clauses is repeated from above, in 31a. When the trigger is not an argument or adjunct from the local clause, however, a distinct generalization holds: a nonlocal trigger requires that the verb of the local clause bear voice morphology corresponding to grammatical function of the clausal domain from which the trigger originates (Pearson 2005), as in 31b.¹⁸

(31) Malagasy voice morphology generalizations

- a. simple clauses—local externalization
voice morphology indicates the grammatical role of the trigger
- b. multiple clauses—nonlocal externalization
voice morphology indicates the grammatical role of the clause from which the trigger is externalized

When the embedded object is made the trigger and then questioned, the matrix verb must be in the circumstantial topic (CT) form, 32a,b. It may not be in the theme topic (TT) form, 32c.

- (32) a. forward object control (question), CT matrix verb
 tranon' iza no naneren' i Mery ahv hofafana?
 house who FOC force.CT Mary me sweep.TT
- b. backward object control (question), CT matrix verb
 tranon' iza no naneren' i Mery hofafa- ko?
 house who FOC force.CT Mary sweep.TT 1SG.NOM
 'Whose house did Mary force me to sweep?'
- c. *backward object control (question), TT matrix verb
 *tranon' iza no noteren' i Mery hofafa- ko?
 house who FOC force.TT Mary sweep.TT 1SG.NOM

The grammaticality of 32b and the ungrammaticality of 32c follow if the complement clause in both examples is an oblique complement, which, according to 31b, triggers CT morphology on the matrix verb. If the verb had no direct object, however, this would be surprising. The clausal complement out of which the trigger is extracted should then be the direct object and induce TT morphology on the verb, in accordance with 31b. This is what we see with subject-control verbs, which do not have a direct object.

- (33) a. subject control (question), TT matrix verb
 tranon' iza no eken' i Mery hofafana?
 house who FOC agree.TT Mary sweep.TT
 'Whose house does Mary agree to sweep?'

¹⁸ For parallel observations and specific analyses of the generalizations in Austronesian languages, see Pearson 2005 and Guilfoyle et al. 1992 for Malagasy, Chung 1998 for Chamorro, and Rackowski & Richards 2005 and Gerassimova & Sells 2007 for Tagalog.

- b. *subject control (question), CT matrix verb
 *tranon' iza no aneken' i Mery hofafana?
 house who FOC agree.CT Mary sweep.TT

The fact that the complement clause is an oblique in the previous examples strongly suggests that some other element is functioning as the direct object. In the forward-control case, this direct object is overt; in the backward-control case, it is not overt but it is still syntactically present.¹⁹

A second, and more direct, piece of evidence for the null syntactic object in backward control comes from the fact that it may actually alternate with an overt NP. Example 34a shows backward control. Example 34b replaces the null object with an overt NP coreferential with the embedded subject.²⁰

- (34) a. omby iza no nanere- nao Δ hovanoin' ny mpiompy?
 cow which FOC force.CT 2SG.NOM kill.TT the cattleman
 'Which cow did you force the cattleman to kill?'
 b. omby iza no nanere- nao **ny mpiompy** hovanoi- ny?
 cow which FOC force.CT 2SG.NOM the cattleman kill.TT 3SG.NOM
 'Which cow did you force the cattleman to kill?'

The overt realization of the object provides straightforward evidence that the matrix object position and the embedded agent position are simultaneously syntactically available.

Floating quantifiers provide a third argument for the null matrix object. Malagasy has a floating quantifier *daholo* 'all' (Keenan 1976, 1995), which is superficially similar in its distribution to English *all*. Keenan 1995 and Potsdam 2006b propose that *daholo* is right-adjoined to the clauselet and must be bound by a c-commanding noun phrase.²¹ Thus, for all speakers, *daholo* can be associated with the trigger on the assumption that the trigger c-commands the clauselet.

- (35) a. [[namaky ilay boky] **daholo**] **ny mpianatra**
 read.AT that book all the students
 'The students all read that book.'
 b. [hovaki- ko] **daholo**] **ny boky**
 read.TT 1SG.NOM all the book
 'I read all the books.'

¹⁹ Although Malagasy verbs can and do select oblique nonclausal complements, I am only aware of one class of verbs that selects only an oblique clausal complement without a direct object. Pearson 2005 describes the class as motion verbs that select a goal complement with a purpose-clause interpretation. The goal complement clause is the only complement of the verb and it is an oblique. The object-control verbs under consideration here do not belong to this class.

²⁰ Speakers vary on whether they allow a noncontrol interpretation for examples like 34b.

- (i) a. %omby iza no
 cow which FOC
 nanere- nao an' i Paoly hovanoin' ny mpiompy?
 force.CT 2SG.NOM ACC Paul kill.TT the cattleman
 'Which cow did you force Paul to have the cattleman kill?'
 b. %varavarana iza no
 door which FOC
 nampahatsiahiva- nao ahy hohidian' i Mery?
 remind.CT 2SG.NOM 1SG.ACC lock.TT Mary
 'Which door did you remind me for Mary to lock?'

Because the judgments are inconsistent, I leave such data for future exploration.

²¹ See Law 2007 for an alternative formulation of the distribution of *daholo* based on a larger set of data.

This formulation also correctly accounts for the fact that *daholo* may not be associated with a subject, which is inside the clauselet and does not c-command *daholo*, which is adjoined to the clauselet.

- (36) *[[hovakian' **ny mpianatra**] **daholo**] ilay boky
 read.TT the students all that book
 ('The students all read that book.')

Daholo may not serve as an argument on its own, 37. It must be licensed by an antecedent noun phrase. I take 37 to show that *daholo* is not a nominal but a clauselet modifier.

- (37) a. *namaky ilay boky daholo
 read.AT that book all
 ('Everyone read that book.')
- b. *namaky daholo aho
 read.AT all 1SG.DFLT
 ('I read everything.')

Despite the adjacency between *daholo* and its antecedent above, the two never form a constituent, as is evidenced by standard constituency tests like topic fronting, 38a. When the antecedent is fronted, *daholo* must remain behind, 38b.²²

- (38) a. *daholo ny mpianatra dia namaky ilay boky
 all the student TOPIC read.AT that book
 ('All the students, they read that book.')
- b. ny mpianatra dia namaky ilay boky daholo
 the student TOPIC read.AT that book all
 'The students, they all read that book.'

In addition to the licensing of *daholo* by the trigger, for some speakers, *daholo* can be bound by an object as well, 39a.

- (39) a. %nanasa **daholo ny lovia** ilay ramatoa
 wash all the dish that woman
 'That woman washed all the dishes.'
- b. [[[nanasa ~~ny lovia~~] daholo] ny lovia] ilay ramatoa
 wash all the dish that woman
- c. *[[nanasa **ny lovia**] **daholo**] ilay ramatoa
 wash the dish all that woman
 ('That woman washed all the dishes.')

The structure of 39a, shown in 39b, is such that right-to-left order within the clauselet corresponds to c-command because both *daholo* and the object are right-adjoined to the clauselet. This is the normal adjoined position for *daholo* and the object has undergone object shift further to its right (Pearson 1998, 2000). In this position it c-commands and licenses *daholo*. This is not the case in the ungrammatical 39c, where object shift has not taken place. Like a subject, an in-situ object cannot c-command outside of the clauselet to license *daholo*. For speakers that allow *daholo* to be bound by a shifted object then, it can be used as a diagnostic for a syntactic object in backward control.

Turning to object-control structures, there too *daholo* may be bound by a shifted direct object to its right.²³

²² Example 39b also shows that precedence is not relevant to the licensing of *daholo*. *Daholo*'s antecedent may precede it.

²³ In order to obtain the word order in 40, the complement clause must also undergo object shift to the right of the direct object.

- (40) a. forward object control, AT matrix verb
 %nanery **daholo ny mpianatra** [hividy ilay boky] aho
 force.AT all the student buy.AT that book 1SG.DFLT
 'I forced all the students to buy that book.'
- b. forward object control, CT matrix verb
 %inona no nanere- nao **daholo ny mpianatra** [hovidiana]?
 what FOC force.CT 2SG.NOM all the student buy.TT
 'What did you force all the students to buy?'

Perhaps unexpectedly, the backward-control variant of 40b is also grammatical, 41a.

- (41) a. backward object control, CT matrix verb
 %inona no nanere- nao **daholo** [hovidian' ny mpianatra]?
 what FOC force.CT 2SG.NOM all buy.TT the student
 'You forced all the students to read that book.'
- b. %inona no nanere- nao **daholo** Δ_i [hovidian' ny mpianatra_i]?
 what FOC force.CT 2SG.NOM all buy.TT the student

This is unexpected because the boldfaced antecedent of *daholo, ny mpianatra* 'the students', is structurally too low to license the quantifier, being in a subordinate clause. The structure is predicted to be grammatical, however, if the floating quantifier can be licensed by the null syntactic object Δ in the same clause, as shown in 41b.²⁴

²⁴ A referee indicates that the argument would be strengthened if it could be shown that other null elements in Malagasy license the floating quantifier *daholo*. The facts in this domain are complex: on the one hand, some null elements do license *daholo*, indicating that licensing by a null element is in principle available, as claimed above. On the other hand, some null elements seem not to license *daholo*.

Example 39b has already shown that the empty category left behind under topicalization, be it a trace of movement, a null resumptive pronoun, or something else, licenses *daholo*. In addition, the null addressee trigger of imperatives licenses *daholo*, (i), as does the null trigger that Potsdam & Polinsky 2007 argues is a result of topic drop in finite complement clauses, (ii). Here and below the null elements are represented as Δ .

- (i) mamakia boky daholo Δ !
 read.AT.IMP book all
 '(You) all read a book!'
- (ii) mihevitra ny mpianatra_i [fa h-ahomby daholo Δ_i]
 think.AT the student that FUT-succeed.AT all
 'The students think that they will all succeed.'

By contrast, a complement-clause subject that has undergone raising to object does not license *daholo* in the clause out of which it has raised, (iii).

- (iii) a. mila ny mpianatra_i [mamaky ilay boky Δ_i] aho
 need.AT the student read.AT that book 1SG.DFLT
 'I need the students to read that book.'
- b. *mila ny mpianatra_i [mamaky ilay boky daholo Δ_i] aho
 need.AT the student read.AT that book all 1SG.DFLT
 ('I need the students to all read that book.')

Nor does the null operator (Op) or its trace in a subject relative clause license *daholo*, (iv).

- (iv) a. ny omby [Op_i (izay) mihinana bozaka t_i]
 the cow REL eat grass
 'the cows that are eating grass'
- b. *ny omby [Op_i (izay) mihinana bozaka daholo t_i]
 the cow REL eat grass all
 ('the cows that are all eating grass')

Similarly, the fronted, focused element in the Malagasy cleft construction (Paul 2001, Potsdam 2006b,c, Law 2007) does not license *daholo*. These references argue that the empty category Δ in (v) is either a trace of the moved focused element or a trace of a null operator coindexed with the focused element.

The fourth argument for the null syntactic object comes from binding theory condition B (Chomsky 1981), which requires that a pronoun be free in its minimal clause. Condition B suffices to rule out coreference between the matrix trigger and object in the forward-control cases, just as in the English translations.

- (42) a. forward object control, AT matrix verb
 nanery **azy**_{*i,k} [hanao ny devoara] **i Paoly**_i
 force.AT 3SG.ACC do.AT the homework Paul
 'Paul_i forced him_{*i,k} to do the homework.'
 b. forward object control, TT matrix verb
 noterena' **i Paoly**_i [hanao ny devoara] **izy**_{*i,k}
 force.AT Paul do.AT the homework 3SG.DFLT
 'Paul_i forced him_{*i,k} to do the homework.'
 c. forward object control, CT matrix verb
 inona no naneren' **i Paoly**_i **azy**_{*i,k} ho atao?
 what FOC force.CT Paul 3SG.ACC do.TT
 'What did Paul_i force him_{*i,k} to do?'

The backward-control variant of 42c, in which the controller is in the embedded clause, is also ungrammatical on the coreferential reading, 43a. In contrast to the above, condition B seems to be satisfied here because the pronoun is the subject of the embedded clause and is not in the same clause as the matrix subject *i Paoly*.

- (43) a. backward object control, CT matrix verb
 inona no naneren' **i Paoly**_i ho atao- **ny**_{*i,k}?
 what FOC force.CT Paul do.TT 3SG.NOM
 'What did Paul_i force him_{*i,k} to do?'
 b. inona no naneren' **i Paoly**_i Δ_{*i} [ho atao- ny_{*i,k}?]
 what FOC force.CT Paul do.TT 3SG.NOM
 'What did Paul_i force him_{*i,k} to do?'

The lack of coreference can be explained by invoking the null syntactic object in the matrix clause. The overt controller is coindexed with this element, and one can see in the proposed syntactic representation in 43b that Δ continues to trigger a condition B violation. That the impossibility of coreference in 43 is due to a null coindexed element and condition B can be seen more clearly if we replace 'force' with a verb that has no object, 44. Coreference between the matrix and embedded subjects then becomes possible.

-
- (v) a. ny ankizy no namaky ilay boky
 the children FOC read.AT that book
 'It's the children who read that book.'
 b. *ny ankizy_i no namaky ilay boky daholo Δ_i
 the children FOC read.AT that book all
 ('It's the children who all read that book.')

Lastly, the null subject in a forward-control complement clause also surprisingly does not license *daholo*.

- (vi) a. mikasa ny mpianatra_i [hianatra teny anglisy Δ_i]
 intend.AT the student learn.AT English
 'The students intend to learn English.'
 b. *mikasa ny mpianatra_i [hianatra teny anglisy daholo Δ_i]
 intend.AT the student learn.AT English all
 ('The students intend to all learn English.')

The argument must remain somewhat tentative until such facts are fully understood.

- (44) a. inona no nandraman' i Paoly_i [natao- ny_i]?
 what FOC try.TT Paul do.TT 3SG.NOM
 'What did Paul try to do?'
 b. inona no nolazain' i Paoly_i [fa natao- ny_i]?
 what FOC say.TT Paul that do.TT 3SG.NOM
 'What did Paul_i say that he_i did?'

The final argument for a syntactic object in the backward-control structure comes from reciprocal licensing. Malagasy has a reciprocal morpheme *-if-* that takes a transitive predicate and reduces its surface valency by one (Keenan & Razafimamonjy 2004).

- (45) a. n-anenjika an-dRabe Rakoto
 PAST-chase.AT ACC-Rabe Rakoto
 'Rakoto chased Rabe.'
 b. n-if-anenjika Rabe sy Rakoto
 PAST-RECIP-chase Rabe and Rakoto
 'Rabe and Rakoto chased each other.'

Reciprocal morphology is not possible with intransitive verbs, 46.

- (46) a. n-ihomehy izy ireo
 PAST-laugh.AT 3PL.DFLT
 'They laughed.'
 b. *n-if-ihomehy izy ireo
 PAST-RECIP-laugh.AT 3PL.DFLT
 ('They laughed each other.')

Hurst (2003, 2006) argues that the valency reduction seen in 45 is only apparent. There is a reduction neither in the number of semantic arguments nor in the number of grammatical functions. In particular, there is still a syntactic object, even though it is not pronounced. For our purposes, then, a direct object is a necessary condition for the presence of reciprocal morphology.

Reciprocal morphology is of course possible with forward-object-control verbs because they have a direct object (Keenan & Razafimamonjy 2004:201).

- (47) a. forward-control verb, AT matrix verb
 nanampy ahy hamaky ilay boky ny mpianatra
 help.AT 1SG.ACC read that book the student
 'The students helped me to read that book.'
 b. forward-control verb with reciprocal morphology, AT matrix verb
 n-if-anampy hamaky ilay boky ny mpianatra
 help.RECIP.AT read that book the student
 'The students helped each other to read that book.'
- (48) a. forward object control, CT matrix verb
 boky inona no nanampian' ny mpianatra anao hovakiana?
 book which FOC help.CT the student 2SG.ACC read.TT
 'Which book did the students help you to read?'
 b. forward-control verb with reciprocal morphology, CT matrix verb
 boky inona no n-if-anampian' ny mpianatra hovakiana?
 book which FOC help.RECIP.CT the student read.TT
 'Which book did the students help each other to read?'

Reciprocal morphology is equally possible with the backward-control variant of 48b, in which the controller is in the complement clause.

- (49) backward-control verb with reciprocal morphology, CT matrix verb
 boky inona no n-if-anampian' ny mpianatra hovakia- ny?
 book which FOC help.RECIP.CT the student read.TT 3.NOM
 'Which book did the students help each other to read?'

The grammaticality of 49 indicates that the matrix verb has a syntactic object since reciprocal morphology is licensed. As in the above arguments, Δ in the proposed syntactic representation serves this role.²⁵

3.3. INTERMEDIATE SUMMARY. This section supports the following two conclusions about Malagasy object-control verbs: First, they have two semantic and syntactic-internal arguments in all their uses, a theme NP and a CP situation clause. Second, in the backward-control use, even though the overt theme is in the embedded clause, there is a silent syntactic representation of this element in the matrix clause. I repeat the structure for the backward-object-control example in 50, which encodes these claims.

- (50) (??)naneren' i Mery Δ_i [hofafa- ko_i] ny trano
 force.CT Mary sweep.TT 1SG.NOM the house
 'Mary forced me to sweep the house.'

I take the evidence to support the empirical reality of backward control in Malagasy. Before concluding, §4 turns to a possible analysis that might identify the null element Δ .

4. A NULL PRONOMINAL ANALYSIS. A central analytical question distinguishing current theories of obligatory control is the identity of the empty category in control structures. The traditional analysis within the principles-and-parameters framework identifies it as PRO (e.g. Chomsky & Lasnik 1993, among many others). That analysis, however, was developed solely with forward control in mind, and Polinsky and Potsdam (2002a) show that PRO is unable to adequately extend to backward control. I do not consider the PRO-based analysis here. Instead, I turn to another alternative originally proposed for Korean (Cormack & Smith 2004) that appeals to the null pronominal *pro*. I show that it too is not adequate.

Korean shows a similar alternation in its object-control verbs (Heycock & Lee 1990, Monahan 2003). The boldfaced theme of a control verb such as *seltukha*- 'persuade' can appear in either the matrix clause with accusative case, 51a, or the embedded clause with nominative case, 51b.

- (51) a. forward object control
 Chelswu-nun **Yenghi-lul**_i [Δ_i kakey-ey ka-tolok] seltukha-ess-ta
 Chelswu-TOPIC **Yenghi-ACC** store-LOC go-COMP persuade-PAST-DECL
 b. backward object control
 Chelswu-nun Δ_i [**Yenghi-ka**_i kakey-ey ka-tolok] seltukha-ess-ta
 Chelswu-TOPIC **Yenghi-NOM** store-LOC go-COMP persuade-PAST-DECL
 'Chelswu persuaded Yenghi to go to the store.'

Cormack & Smith 2004, Choe 2006, and Polinsky et al. 2007 discuss the Korean construction and argue that the empty category in the Korean backward-control case should be analyzed as the null pronominal *pro*. Such an analysis is plausible for Korean because it is an object *pro*-drop language. Extending this analysis to Malagasy, the null element Δ in backward control would be *pro*.

- (52) [naneren' i Mery [*pro*_i [hofafan' i Paoly_i]]] ny trano
 force.CT Mary sweep.TT Paul the house
 'Mary forced Paul to sweep the house.'

²⁵ Mark Baker points out that the object in 49 may be null as a result of reciprocalization applying to an example such as 34b rather than backward control. I cannot presently rule out this possibility.

Polinsky & Potsdam 2002a raises a number of arguments against a *pro*-based analysis, two of which are relevant here. First, since *pro* is not ordinarily restricted to taking a sentence-internal antecedent, the analysis, without further elaboration, does not capture the obligatory control interpretation of the backward-control examples. Such an interpretive restriction exists, however, in that the Malagasy example 52 has only the control interpretation. The missing object cannot be interpreted arbitrarily or noncoreferent with the embedded subject. Cormack and Smith (2004) offer a solution to this problem. They argue for a semantic analysis of control and encode this interpretive restriction in the lexical entries of the relevant object-control verbs using a meaning postulate. Their meaning postulate in 53 forces the verb's object to be interpreted as coindexed with the complement clause's agent.

(53) backward object control meaning postulate:

For all s, x, y , if $\text{FORCE } s \ x \ y$ holds, then x is an agent in the event given by s where s is the event argument of FORCE , x is the forcee, y is the forcer (x and y individuals)

A second problem with the analysis in 52 concerns the structural relationship between *pro* and its antecedent. As stated in §2.1 and shown in 52, I assume that left-to-right order within the clauselet corresponds to c-command. This means that *pro*, the direct object, c-commands its antecedent, which is in the oblique complement clause. In the general case, this should trigger a binding condition C violation and make the examples ungrammatical on the control interpretation, contrary to fact. Condition C requires that a nonpronominal referential expression (R-expression) such as *Paul* not be c-commanded by a coindexed antecedent (Chomsky 1981). It accounts for the ungrammaticality of the following examples under a coindexed interpretation.

- (54) a. *He_i swept Paul_i's house.
b. *I told him_i that Paul_i had won.

Cormack and Smith (2004) solve this problem as well by stipulating a noncanonical structuring of the two internal arguments. Instead of 52, *pro* is base-generated below, and thus to the right of, the complement clause, 55. There is now no c-command relationship between *pro* and its antecedent, obviating the condition C problem. The obligatory control interpretation nevertheless still obtains, from the meaning postulate in 53.

- (55) [naneren' i Mery [[hofafan' i Paoly_i] *pro*_i]] ny trano
force.CT Mary sweep.TT Paul the house
'Mary forced Paul to sweep the house.'

I summarize the *pro*-analysis of backward control in Malagasy with the lexical entry in 56, which I restrict to CT verb forms.

- (56) *anerena* 'force.CT' [__ CP NP] (noncanonical word order)
 $\theta_{\text{AGENT}} \theta_{\text{SITUATION}} \theta_{\text{THEME}}$
 $\forall s \forall x \forall y [\text{PERSUADE}.s.x.y \rightarrow x \text{ is an agent in the event given by } s]$ (meaning postulate)

In what follows, I provide argumentation against this analysis for Malagasy. Some of the arguments are due to Monahan 2003, based on Korean (see Choe 2006 for critical response), while others are new and specific to Malagasy.

4.1. OBJECT *pro*-DROP. The *pro*-analysis works well for Korean because it is widely recognized as an object *pro*-drop language (Cole 1987, Kim 1993, Speas 1995). It is equally clear, however, that Malagasy is not an object *pro*-drop language (Randriamasi-

manana 1986, Pearson 2005). We can see this in two ways. First, null objects in constructed discourses are not possible, even when the intended antecedent of the missing object is evident.

- (57) Novangian' i Paoly aho.
 visit.TT Paul 1SG.DFLT
 Niangavy *(azy) aho hiara-hisakafo
 ask.AT 3SG.ACC 1SG.DFLT eat-together
 'Paul visited me. I asked him to eat with me.'

Second, null objects with any other use of the object-control verbs are not possible. A null object is not allowed when the matrix verb is in its AT form, 58, or with a double object use, 59.

- (58) forward object control, AT matrix verb
 nanery *(an' i Mery) hamafa trano aho
 force.AT ACC Mary sweep house 1SG.DFLT
 'I forced Mary to sweep the house.'
 (*'I forced her (someone previously mentioned) to sweep the house.')
- (59) double object use, CT matrix verb
 nanere- ko *(an' i Mery) ny fanadiovana ny trano
 force.CT 1SG.NOM ACC Mary the cleaning the house
 'I forced the cleaning of the house on Mary.'
 (*'I forced the cleaning of the house on her (someone previously mentioned).')

Such examples show that even restricting object *pro*-drop to the object-control verbs under investigation would not be empirically justified. If *pro* is the correct mechanism with which to analyze Malagasy backward object control, it unexpectedly occurs in only this situation.²⁶

4.2. WORD ORDER. A further problem for the *pro*-analysis as applied to Malagasy is that it predicts the wrong word order. The noncanonical realization of internal arguments required to eliminate c-command between the controller and controllee claims that the NP object should FOLLOW the complement clause when both are overt (see 55 and 56). This is in fact not possible. When both are realized, the NP object precedes the oblique clausal complement, as we have already seen in 34b, n. 20, and now see also in 60.²⁷

- (60) a. omby iza no nanere- nao [ny mpiompy]_{NP} [hovo-
 cow which FOC force.CT 2SG.NOM the cattleman kill.TT
 ny]_{CP}?
 3SG.NOM
 'Which cow did you force the cattleman to kill?'

²⁶ Mark Baker suggests that a more nuanced understanding of *pro* might permit object *pro*-drop in Malagasy control contexts. It is widely assumed that *pro* must be identified, or be recoverable, in order to appear in a structure (Rizzi 1986). In the ordinary case, it is agreement features on an agreeing head that serve this function. In the case at hand, the meaning postulate could be taken to identify *pro*, thus allowing it to appear in just the backward-control environment. It remains to determine whether using lexical meaning postulates in this way to license *pro* is a viable option.

²⁷ The necessary word order cannot be derived by requiring obligatory extraposition of the clausal complement. Finite, independent complement clauses obligatorily extrapose (Keenan 1976, Potsdam & Polinsky 2007) but dependent clauses do not. The latter only optionally extrapose provided they are 'heavy', which the complement clause in 60 is not.

- b. *omby iza no nanere- nao [hovonoi- ny]_{CP} [ny
cow which FOC force.CT 2SG.NOM kill.TT 3SG.NOM the
mpiompy]_{NP}?
cattleman

The noncanonical word order in the lexical entry is thus also a stipulation that finds no independent support and applies only when the object is *pro*.²⁸

4.3. BINDING THEORY CONDITION C. Binding condition C effects also prove problematic for the *pro*-analysis. By hypothesis, there is no c-command relationship between *pro* and its antecedent in 55, and we saw in §3.2, example 34, that *pro* may be replaced by an overt full NP. We thus expect that replacing *pro* with an overt pronoun will also be grammatical.

- (61) *inona no nanere- nao azy_i [hovakian' ny mpianatra_i]?²⁹
what FOC force.CT you him read.TT the student
(‘What did you force him_i to have the student_i to read?’)

The sentence is ungrammatical on the control interpretation, however, suggesting that the claim that there is no c-command between the embedded agent and matrix object is incorrect. Example 61 can then be ruled out as a condition C violation; the pronoun c-commands the R-expression. The correctness of this explanation is confirmed by the fact that reversing the pronoun and the R-expression permits coindexation, as we have already seen.

- (62) inona no nanere- nao ny mpianatra_i [hovakia- ny_i]?
what FOC force.CT you the student read.TT 3SG.NOM
(‘What did you force the student to read?’)

Condition C effects thus indicate that the *pro*-analysis encodes the wrong structural relationship between the controller and controllee.

4.4. VARIABLE BINDING. A similar argument against the c-command prediction of the *pro*-analysis comes from variable binding. I understand variable binding as a relationship between a noun phrase and a variable whose interpretation varies with the interpretation of that noun phrase, 63 (see Heim & Kratzer 1998:115–23). Variable binding requires c-command between the noun-phrase binder and the variable at some level of syntactic representation.

- (63) a. [Each student]_i wrote to his_i mother.
b. Who_i tried PRO_i to leave?

Turning to control, the *pro*-analysis of backward control schematized in 55 predicts that a variable binding relationship between the controller and controllee should be impossible because there is no c-command between the two elements.

Superficially, this seems to be an incorrect prediction. A variety of nonreferential controllers that are related to their controllees via variable binding and not coreference are permitted in both the forward- and backward-control constructions. These include distributed universal quantifiers (64), negative polarity items (65), and *wh*-phrases (66).

²⁸ In what follows, I ignore the incorrect word-order prediction. The examples to follow do not conform to the word order required by 56. Instead, they conform to acceptable Malagasy word order.

²⁹ This sentence is grammatical with a noncontrol interpretation for speakers who accept the noncontrol interpretation mentioned in n. 20.

- (64) a. distributed quantifier controller, forward object control
 boky inona avy no
 book what each FOC
 nanontania- nao **ny mpianatra tsirairay** hovidiana?
 ask.CT you **the student each** buy.TT
 b. distributed quantifier controller, backward object control
 boky inona avy no
 book what each FOC
 nanontania- nao hovidian' **ny mpianatra tsirairay**?
 ask.CT you buy.TT **the student each**
 'For each x, x a student, which book did you ask x to buy?'
 'Which book did you ask each student to buy?'
 (65) a. NPI controller, forward object control
 tsy nanere- ko **na iza na iza** hovakiana ilay boky
 NEG force.CT 1SG.NOM **anyone** read.TT that book
 b. NPI controller, backward object control
 tsy nanere- ko hovakian' **na iza na iza** ilay boky
 NEG force.CT 1SG.NOM read.TT **anyone** that book
 'I didn't force anyone to read that book.'
 (66) a. WH-phrase controller, forward object control
 ?nanere- nao **an' iza** hovakiana ilay boky?
 force.CT 2SG.NOM ACC **who** read.TT that book
 b. WH-phrase controller, backward object control
 ?nanere- nao hovakian' **iza** ilay boky?
 force.CT 2SG.NOM read.TT **who** that book
 lit. 'you forced who to read this book?'
 'Who did you force to read that book?'

Contrary to the *pro*-analysis, such data indicate that the controller and the controllee must be in a c-command relationship that can lead to a bound-variable interpretation.

The forward-control examples in 64a, 65a, and 66a do not challenge Cormack and Smith's analysis; they do not need to use the structure in 55 and can be analyzed in whatever way ordinary control structures are analyzed. The backward-control examples that require the noncanonical structure in 55, however, are problematic, as Cormack and Smith note, because they do not yield a bound-variable interpretation. Cormack and Smith (2004) show that we can nevertheless account for a number of these examples under the *pro* analysis by providing a semantics that does not rely on the controllee being interpreted as a bound variable. For the distributed quantifier, the explanation is that the distributed QP is interpreted as a group plural. Thus the claim is that *ny mpianatra tsirairay* 'the student each' in 64 is better translated as 'all the students'. This is a priori possible since unmarked nominals in Malagasy may be interpreted as singular or plural. *Pro* then takes as its antecedent the group referent of this noun phrase. The meaning of 64b would more accurately be paraphrased as 'Which book did you ask all the students that they buy?' rather than as the bound-variable reading 'Which book did you ask each student that he buy?'. There is good reason to believe, however, that this explanation does not succeed in the Malagasy case. *Tsirairay* 'each' used in 64 above is obligatorily distributive and cannot have a group interpretation. For example, noun phrases with *tsirairay* are incompatible with collective predicates, 67a. *Tsirairay* contrasts with the universal quantifier *rehetra* 'all', which can be interpreted collectively, 67b.³⁰

³⁰ I am grateful to a referee for pointing out these facts.

- (67) a. *miara-miasa ny mpianatra tsirairay
 together-work the student each
 (*‘Each student is working together.’)
 b. miara-miasa ny mpianatra rehetra
 together-work the student all
 ‘All the students are working together.’

Cormack and Smith (2004) also provide an account of the Korean equivalent of 66 with a WH-phrase controller. In Korean and Japanese, a WH-phrase like ‘who’ is not a dedicated question word but an INDETERMINATE, a word with roughly the meaning of ‘person’ that can also be used to mean ‘someone’ or ‘everyone’. Cormack and Smith follow other researchers in proposing that these indeterminates are then bound by different operators outside the clause in their various uses. In WH-questions, they are bound by a question operator, making them question words. Extending the analysis to Malagasy, 66b, repeated as 68a, has the representation in 68b, with English words and word order substituted.

- (68) a. nanere- nao hovakian’ iza ilay boky?
 force.CT 2SG.NOM read.TT who that book
 ‘Who did you force to read that book?’
 b. Q-Op_x [you force *pro*_x [person_x read this book]]

The WH-word is an indeterminate translated as ‘person’ in the embedded clause. It and *pro* are then bound by the question operator Q-Op. See Cormack & Smith 2004 for further details.

While this line of explanation might work for Korean, it is less successful for Malagasy. First, unlike in Korean and Japanese, Malagasy WH-words do not seem to have an independent life as indeterminates. Their only use outside of WH-questions is as negative-polarity items in the collocation *na WH-XP na WH-XP* ‘any XP’, as in 65. It is not clear that this justifies their being classified as indeterminates. In addition, 68b represents a weak crossover (WCO) violation and should be ungrammatical on the indicated coindexation between the operator and the pronoun. Ruys 2000 accounts for WCO as follows: in order for a pronoun P to be interpreted as a variable bound by an operator Op, P and Op must be coindexed and Op must have scope over P. Op has scope over P if Op c-commands P from an A(argument) position. This is represented schematically in 69.

- (69) Weak crossover (Ruys 2000)
 *[Op_i [. . . *pro*_i . . .]] if Op is not in an A-position

Example 68b violates this requirement because, although the question operator binds the pronoun, the operator is not in an argument position. If Ruys’s account of WCO, or something like it, is correct, Cormack and Smith’s treatment of WH-phrase controllers cannot be right and they remain a problem.

In summary, this section has evaluated a *pro*-based analysis of Malagasy backward object control that captured the obligatory control interpretation via semantic control. A primary difficulty with the *pro*-analysis is that Malagasy is not an object *pro*-drop language. Ignoring this problem, however, there were still a number of challenges. The *pro*-analysis makes incorrect claims about word order, c-command relations, and restrictions on interpretation. I conclude that the *pro*-analysis is not appropriate for Malagasy.

5. CONCLUSION. Malagasy object-control verbs provide what I believe is a particularly clear example of the phenomenon of backward control. The language allows an alternation between forward and backward object control in which the overt controller can appear in either the matrix clause or the embedded clause with no change in meaning. The controller-controllee relation in natural languages is thus not uniformly one in which the controller is structurally superior to the controllee, as has been implicitly or explicitly assumed in the development of most syntactic theories. Although I have not presented a formal analysis here, in other work (Polinsky & Potsdam 2002a, Alexiadou et al. 2009) it has been argued that, within the principles-and-parameters tradition, the movement theory of control (MTC; Hornstein 1999, 2003) fares best in dealing with the phenomenon, whatever its other shortcomings might be (see Culicover & Jackendoff 2001, Boeckx & Hornstein 2003, 2004, Jackendoff & Culicover 2003, Landau 2003, and papers in Davies & Dubinsky 2007b for discussion). Under the MTC, the positions of the controller and controllee are related via movement, as in the standard analysis of subject-to-subject raising. The MTC combines in an interesting way with the COPY THEORY OF MOVEMENT (Chomsky 1993, 1995) to allow backward control. The copy theory of movement hypothesizes that traces of movement are actually full copies of the moved element. Independent principles are then needed to determine which copies are pronounced and which are not. Ordinary forward control results when the higher copy is pronounced. This is the usual way in which chains of movement are reduced: pronounce the highest copy. Backward control results in this scenario when the lower copy is pronounced. Pronouncing lower copies of a movement chain is not freely sanctioned but arises in certain circumscribed situations (Nunes 2004, Polinsky & Potsdam 2002a, Haddad & Potsdam 2010). In contrast, the standard principles-and-parameters approaches to control that use the empty category PRO (e.g. Chomsky & Lasnik 1993) cannot account for the existence of backward control (Polinsky & Potsdam 2002a). PRO must be bound, so it cannot occur in a position structurally higher than its antecedent. The MTC successfully removes this requirement on the unpronounced controllee and is thus more successful in analyzing backward control, despite other objections that have been raised.

This article has also demonstrated that an analysis using the null pronominal *pro* (Cormack & Smith 2004) is also not a fully general solution to backward control. Although it might be appropriate for Korean, it faces difficulties with respect to the Malagasy data.

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