Backward Control: Evidence from Malagasy*

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1. Introduction

Control is an asymmetric interpretational dependency between two syntactic positions in which the referential properties of an overt one, the CONTROLLER, determine the referential properties of a non-overt one, the CONTROLLEE (Bresnan 1982). In the canonical case of FORWARD CONTROL, the controller is structurally superior to the controllee (represented atheoretically as Δ), (1a). However, a second pattern, which we will call BACKWARD CONTROL, is also possible, in which the controllee is structurally superior to the controller, (1b).

(1) a. The diver$_i$ tried Δ_i to hold his breath.
b. Δ_i tried the diver$_i$ to hold his breath. (hypothetical)

Backward Control has been reported in the literature for Japanese causatives and *tokoro*-clauses (Kuroda 1965, 1978, Harada 1973), Brazilian Portuguese causatives (Farrell 1995), and Nakh-Daghestanian aspectual verbs (Kibrik 1999, Polinsky and Potsdam 2000, 2001a). This paper contributes to the growing body of empirical evidence supporting the existence of Backward Control (BC) by documenting and analyzing the construction in Malagasy (see Polinsky and Potsdam 2001a,b for a fuller treatment).

The paper is organized as follows: Section 2 presents the Malagasy construction and lays out our structural proposal. Sections 3 and 4 argue against two analytical alternatives. Section 5 summarizes our empirical findings and sets the stage for possible theoretical analyses. To that end, section 6 attempts to analyze BC within a PRO-based Principles and Parameters (P&P) framework and concludes that P&P quite generally rules out BC. Section 7 turns to a more recent Minimalist-based movement analysis of Control in which the controller-controllee relationship is a result of movement. Our fundamental claim is that movement in Forward Control is overt while movement in the case of Backward Control is covert. BC is thus expected given widely recognized overt versus covert parametric variation in movement.

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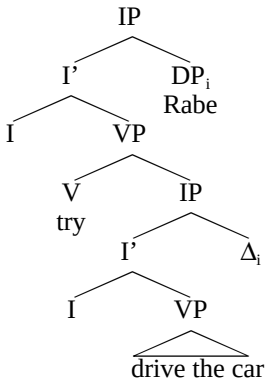
2. Control in Malagasy

Malagasy is an Austronesian language spoken on the island of Madagascar. Its basic word order is VOS but VSO order is also typically possible. A canonical Forward Control construction is given in (2) (Randriamasimanana 1986, Keenan 1976, 1995, Law 1995, Paul and Ranaivoson 1998).[1] Expectedly, VSO word order is also possible, (2b).[2]

(2) a. m-an-andrana [m-i-tondra ny fiara Δ_i] Rabe$_i$
PRES-ACT-try PRES-ACT-drive the car Rabe
b. m-an-andrana Rabe$_i$ [m-i-tondra ny fiara Δ_i]
PRES-ACT-try Rabe PRES-ACT-drive the car
'Rabe is trying to drive the car.'

For such examples and VOS order in general, we assume a clause structure as in (3), following Guilfoyle, Hung, and Travis 1992. The predicate constitutes a VP and the clause-final subject occupies a rightward specifier of IP.[3]

(3)



The verbs *manomboka* 'begin', *mahavita* 'accomplish', and *mitsahatra* 'stop' appear in superficially similar sentences, (4a).[4] Upon closer investigation however, these verbs behave rather differently from Forward Control verbs. One difference is that they do not permit VSO order, *(4b).

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[1] The exact analysis of such structures is a topic of current debate. Law 1995 argues that they do not instantiate canonical control. Note for example that the embedded clause is tensed; Malagasy has no morphological infinitives.

[2] We use the following abbreviations in glossing: ACC—accusative, ACT—active, CIRC—circumstantial, COMP—complementizer, FUT—future, IMPER—imperative, NEG—negation, OBL—oblique, PASS—passive, PRES—present, Q—question.

[3] For alternative Malagasy clause structure, see MacLaughlin 1995, Pensalfini 1995, Paul 1999, and Pearson 2001. We will call the clause-final DP the subject, although nothing hinges on this terminology.

[4] We illustrate only with *manomboka* 'begin'. The other verbs behave similarly, although some data on *mitsahatra* (Keenan 1995:195-196) suggest possible dialectal variation.

(4) a. m-an-omboka m-i-tondra ny fiara Rabe
PRES-ACT-begin PRES-ACT-drive the car Rabe
b. *m-an-omboka Rabe m-i-tondra ny fiara
PRES-ACT-begin Rabe PRES-ACT-drive the car
'Rabe is beginning to drive the car.'

We will argue that this and other contrasts between *manandrana* 'try' and *manomboka* 'begin' arise from distinct clausal organizations. We claim that 'begin', 'accomplish', and 'stop' have a rather unique syntax schematized in (5) and we will call these verbs Backward Control (BC) verbs. The central claims of the BC analysis are that i) the overt controller is structurally in an embedded clause, and ii) the main verb assigns an external theta role to a syntactic controllee. We defend these claims below by arguing against alternatives that do not embrace them. Section 3 rejects a monoclausal analysis while section 4 argues against a sentential argument analysis.

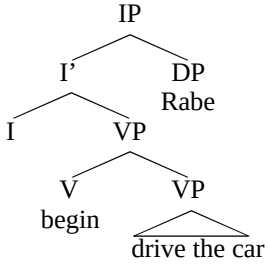
(5) m-an-omboka [m-i-tondra ny fiara $Rabe_i$] Δ_i
PRES-ACT-begin PRES-ACT-drive the car Rabe
'Rabe is beginning to drive the car.'

3. Against Clause Union: A Biclausal Structure

The verbs that participate in the unusual pattern above often form reduced clause constructions in other languages. Thus a reasonable hypothesis regarding the Malagasy BC verbs is that they are clause union predicates that take a non-clausal VP complement, as in (6). (7) presents our BC proposal for comparison.

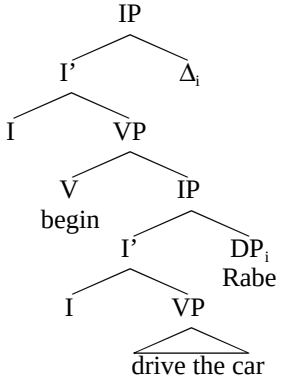
clause union hypothesis

(6)



BC hypothesis

(7)



A primary advantage of a clause union analysis is that it is monoclausal and does not posit any empty categories. Below we give evidence from constituency, word order, and clausal domain identifiers against the monoclausal analysis.

3.1. Constituency evidence

Two relevant strings can be tested to distinguish (6) and (7): i) the embedded

predicate+overt subject (*drive the car Rabe*), which we will call E+S, and ii) the main verb+embedded predicate (*begin drive the car*), which we will call V+E. Under the clause union hypothesis, E+S is not a constituent but V+E is. The BC hypothesis in contrast claims that E+S is a constituent but V+E is not. Data from indirect passive and coordination show that the BC predictions are correct.

In Malagasy, verbs may appear in one of three voices, active, passive, and circumstantial (indirect passive), with a corresponding change in the DP that acts as the subject (see Keenan 1976, 1995, Perlmutter and Postal 1983):

(8)	a.	n-i-vidy ny fiara hoan-dRasoa Rabe		ACTIVE
		PAST-ACT-buy the car for-Rasoa Rabe		
	b.	no-vid-in-dRabe hoan-dRasoa ny fiara		PASSIVE
		PAST-buy-PASS-OBL.Rabe for-Rasoa the car		
	c.	n-i-vidi-an-an-dRabe ny fiara Rasoa		CIRC
		PAST-ACT-buy-CIRC-OBL.Rabe the car Rasoa		
		'Rabe bought a car for Rasoa.'		

The voice system is a useful constituency diagnostic because, if a string can advance to subject with one of the voices then it must be a constituent. (9) demonstrates that the circumstantial form of 'begin' is possible with E+S in subject position. The bracketed string E+S must therefore be a constituent.

(9)	anomboh-ana	[mitondra	ny	fiara	Rabe]
	begin-CIRC	drive	the	car	Rabe
	'Rabe begins to drive a car.'				

We now turn to coordination. First, (10) confirms that E+S is a constituent since it can be coordinated to the exclusion of the matrix verb. Second, (11) shows that V+E is not a constituent. It cannot be coordinated with another predicate, (11a,b). Only the BC structure correctly predicts all of this straightforward constituency evidence.[5]

(10)	a.	nanomboka	misotra	toaka	Rabe	ary	mitady	akangavavy izy
		began	drink	booze	Rabe	and$_S$	seek	prostitute he
		'Rabe began to drink booze and chase women.'[6]						
	b.	began [$_{IP}$ [$_{IP}$ drink booze Rabe] and$_S$ [$_{IP}$ seek prostitute he]]						

(11)	a.	*nanomboka	namaky	ny	taratasy	sy	menahatra	Rabe
		began	read	the	letter	and$_{VP}$	is.embarrassed	Rabe
		('Rabe began to read the letter and was embarrassed.')						
	b.	*[$_{VP}$ [$_{VP}$ began read the letter] and$_{VP}$ [$_{VP}$ is.embarrassed]] Rabe						

[5] Malagasy has a number of coordination particles whose exact functions have yet to be investigated. Two are used in the examples: *sy* coordinates predicates and we gloss it as 'and$_{VP}$'; *ary* coordinates clauses and is glossed by 'and$_S$' See Keenan 1976:274.

[6] This example also has a second meaning, which is irrelevant for us, 'Rabe began to drink booze and he chases women.'

3.2. VP right edge identifiers

Elements that mark the right edge of VP provide another tool for distinguishing between the two hypotheses. With reference to the structures in (6) and (7), the subject linearly follows the right edge of the matrix VP in the clause union structure, (6), but precedes it in the BC structure, (7). Keenan 1995 identifies adverbs and the question particle *ve* as VP-right edge markers. In what follows we show that the grammatical placement of these elements in the examples under investigation yields direct evidence for the BC structure.

The yes-no question particle *ve* is discussed in Keenan 1976, 1995, Paul 1999, and Pearson 2001. Keenan 1995:179 proposes that it directly follows the predicate phrase in a simple clause:

(12) mitondra ny fiara (ve) Rabe (*ve)?
drive the car Q Rabe Q
'Is Rabe driving the car?'

While we have encountered dialectal variation, for some speakers, the question particle must follow the overt subject in the structure under investigation, (13), as predicted by the BC structure. For other speakers, however, the particle must precede the overt subject, making the data inconclusive.

(13) %manomboka mitondra ny fiara Rabe **ve**
begin drive the car Rabe Q
'Has the teacher begun to drive?'

Following observations in Rackowski 1998 and Pearson 1998, one possible position for VP-adverbs in a simple Malagasy clause is immediately following the predicate, with the clause-final, post-subject position not possible, (14a). This same distribution holds in Forward Control structures, (14b), with the structure in (14c). VP-adverbs are thus also VP right edge markers.

(14) a. niteny ity tonon-kira ity (**indroa**) Rabe (***indroa**)
knock this door this twice Rabe twice
'Rabe knocked twice on this door.'

b. nanandrana niteny ny tonon-kira (**indroa**) Rabe (***indroa**)
tried knock the door twice Rabe twice
'Rabe twice tried hard to knock on the door.'

c. [nanandrana [niteny ny tonon-kira Δ_i]]$_{VP}$ **indroa** Rabe$_i$

(15) demonstrates that the adverb follows the subject in the examples under investigation, in contrast to (14b,c). The pattern follows from the BC structure if the right edge of the VP is as shown in (15b), with the overt subject internal to the matrix VP. The clause union hypothesis does not predict this possibility.

(15) a. nanomboka niteny ity tonon-kira ity Rabe **indroa**
began knock this door this Rabe twice
'Rabe twice began to knock on this door.'

b. [nanandrana [niteny ity tonon-kira ity Rabe]]$_{VP}$ **indroa**

3.3. Biclausality

A third difference between structures (6) and (7) is in the number of clausal domains (IPs). In the clause union structure, there is only one IP while in the BC structure there are two IPs. In what follows we show that the examples under investigation pass diagnostics for biclausality.

Clauses are typically the domain of independent tense and polarity under the assumption that IP is the locus of verbal morphosyntactic categories. Under the BC structure, then, we expect to be able to independently specifiy tense and polarity on both verbs. Under the clause union hypothesis, in contrast, there is only one inflectional domain and we expect to be able to specify only one value of tense and polarity for the sentence. Since all verbs in Malagasy show tense inflection, we expect obligatory tense concord with the higher verb.

The examples below support the BC structure. (16) demonstrates that the embedded verb may have a tense specification distinct from that of the matrix verb, although both may be identically specified. Similarly, both verbs may be independently negated, (17a,b).

(16) m-an-omboka [m-itondra/h-itondra ny fiara Rabe]
PRES-ACTIVE-begin **PRES**-drive/**FUT**-drive the car Rabe
'Rabe has begun to drive the car.'

(17) a. tsy nanomboka nihomehy t-amin'ny tantara izy
NEG began laugh PAST-PREP'the story he
'He didn't begin to laugh at the story.'

b. nanomboka tsy nihomehy t-amin'ny tantara intsony izy
began **NEG** laugh PAST-PREP'the story NPI he
'He began to no longer laugh at the story.'

A second kind of evidence for biclausality comes from clause-bound operations in the grammar. One such phenomenon is VSO word order mentioned above. While we take no stand on how exactly VSO order is derived, the observation is that a subject can directly follow the verb only if it is the subject of this verb. In other words, subject scrambling is clause bound. With reference to the structures in (6) and (7), VSX word order is predicted to be possible with the clause union structure but not the BC structure. It is ruled out in the latter case because the subject is in an embedded clause and cannot be scrambled into a higher clause. As we saw earlier, the latter is the correct prediction. Unlike with Forward Control verbs, (2b), VS word order is disallowed with 'begin':

(18) *manomboka ny mpianatra mitondra ny fiara
begin the student drive the car
('The student is beginning/has begun to drive the car.')

A similar state of affairs arises with Subject-to-Object Raising (SOR) structures. A number of Malagasy verbs govern SOR (Keenan 1976:283-285, Paul and Rabaovololona 1998) in which an embedded subject raises to the object position of the immediately higher verb, (19). This movement targets

only subjects and is clause-bound; it cannot target a multiply embedded subject.

(19) mino an-dRabe$_i$ [ho n-itaraina t$_i$] aho
believe ACC-Rabe COMP PAST-ACT.complain I
'I believe Rabe to have complained.'

The clause union hypothesis predicts that a 'begin' example can be embedded under an SOR verb. The subject simply raises, parallel to (19). Under the BC structure, SOR is correctly predicted to be impossible because the overt subject is too deeply embedded to raise. It would have to cross two clause boundaries:

(20) *mino an-dRabe$_i$ [ho nanomboka [nitaraina t$_i$]] Rasoa
believe ACC-Rabe COMP began complain Rasoa
('Rasoa believes Rabe to have begun to complain.')

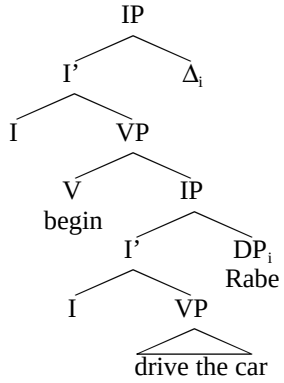
We conclude from these various arguments that BC examples are biclausal. Since the clause union structure does not represent this characteristic of the construction, it should be rejected.

4. Against a Single Clausal Argument: Thematic Role Effects

Section 3 showed the examples under consideration contain a full embedded clause and the BC structure in (21) reflects this constituent. At the same time, our hypothesis posits an additional non-overt argument Δ in the matrix clause that a priori seems unnecessary. In this section, we support this additional complexity by considering and rejecting an alternative analysis in which the BC verb takes only a single clausal argument, as in (22). We argue below that i) the BC verb has an external argument which is not the clause, and ii) this argument is syntactically represented.

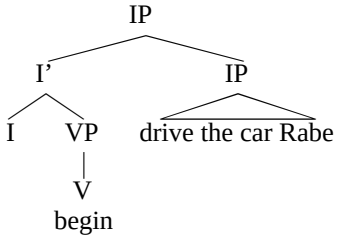
BC hypothesis

(21)



single clausal argument hypothesis

(22)



4.1. Selectional restrictions

Selectional restrictions indicate that the verbs under consideration assign a

thematic role (theta role) to an external argument (in addition to assigning a thematic role to the clausal argument). These restrictions seem to be borne by the overt subject; however, because it is not a clause-mate of the higher verb, it also cannot be an argument of that verb. Consequently, we posit a coindexed, empty category in the same clause which bears the selectional restrictions.

(23) illustrates that a non-volitional, non-agentive DP cannot be used in the BC construction. We propose that (23b) is ungrammatical because the selectional restrictions imposed by 'begin' are not satisfied.

(23) a. avy ny orana
come the rain
'It's raining/going to rain.'

b. *nanomboka [avy ny orana]
PAST.begin come the rain
('It began to rain.')

At the same time, these verbs can appear in the imperative, (24), a construction which requires an intentional agent (Perlmutter 1970, Farkas 1988).

(24) manomboha mitondra ny fiara (ianao)
begin.IMPER drive the car you
'Begin to drive the car!'

There is good evidence then that 'begin' places thematic restrictions on an external argument. Under the single clausal argument hypothesis however, there is no argument that bears these restrictions, so they are unexpected.

4.2. Empty category effects

Within the Standard Theory and its derivatives, the presence of selectional restrictions entails that there is a local syntactic constituent that is assigned the associated theta role. A theta role cannot be assigned across a clause boundary and the argument cannot simply be unrealized. Nevertheless, independent empirical evidence for the syntactic existence of this empty category is desirable. Our evidence comes from floating quantifiers. Whether floating quantifiers are adverbs or stranded DPs, it is widely agreed that they must be bound and cannot appear in a higher clause than their antecedent.

Keenan 1995:178 discusses the distribution of the Malagasy universal quantifier *daholo.* He indicates that *daholo* occurs at the right edge of VP and must be bound by the subject, (25), although it does not form a constituent with it. It cannot be bound by the object in (25) nor can it be bound by a more deeply embedded element, (26).

(25) m-i-jery ny mpianatra daholo ny mpampianatra
watch the student all the teacher
'All the teachers watched the student(s).'
#'The teacher(s) watched all the students.'

(26) *tsara daholo tonga ny mpianatra
good all arrived the student
('It's good all students arrived.')

The distribution of *daholo* supports the BC structure. First, (27a) demonstrates that the quantifier may expectedly appear in the embedded clause where it is bound by the overt subject. Surprisingly, the quantifier can also appear in the matrix clause, (27b), requiring that there be a syntactic argument there. With the BC structure, this non-overt argument is Δ. In a single clausal argument structure, there is no clause-mate subject antecedent for the quantifier and we expect (27b) to be ungrammatical, on a par with (26).

(27) a. nanomboka omaly [mihomehy **daholo** ny ankizy]
began yesterday laugh all the children
'Yesterday the children began to all laugh.'

b. %nanomboka **daholo** omaly [mihomehy ny ankizy] Δ_i
began all yesterday laugh the children
'Yesterday the children all began to laugh.'

Although more evidence supporting the empty category is desirable, we consider the floating quantifier data quite strong. Together with the selectional restrictions it supports the claim that BC verbs assign an external theta role to a clausemate empty category. A single clausal argument is untenable.

5. Backward Control in Malagasy

For the examples under consideration, sections 3 and 4 have supported the structure in (28) in which the overt subject is structurally in an embedded clause but the main verb nevertheless also has an external argument.

(28) m-an-omboka [m-itondra ny fiara Rabe_i] Δ_i
PRES-ACT-begin PRES-drive the car Rabe
'Rabe is beginning to drive the car.'

Since the non-overt argument is interpreted as coreferential with the overt embedded subject, we propose that a control relationship exists between the two. Two additional observations support this characterization. First, the control interpretation is required. The matrix subject cannot be interpreted as referentially distinct from the embedded subject, (29). Second, the matrix argument does not alternate with an overt DP but must be unpronounced, (30).

(29) a. *manomboka mitondra ny fiara Rabe_i ny mpampianatra_k
begin drive the car Rabe the teacher
('The teacher has begun to have Rabe drive the car.')

b. *manomboka mitondra ny fiara Rabe_i pro_k
begin drive the car Rabe
('Someone has begun to have Rabe drive the car.')

(30) *manomboka mitondra ny fiara izy_i Rabe_i
begin drive the car he Rabe
('Rabe is beginning to drive the car.')

In summary, *manomboka* 'begin', *mahavita* 'accomplish', and *mitsahatra* 'stop' are Backward Subject Control verbs in which the overt controller is in the embedded clause and the non-overt controllee is in the higher clause. The remainder of the paper turns to possible analyses of this phenomenon.

6. Principles and Parameters Approaches

Within a Principles and Parameters (P&P) analysis of Control (see for example Chomsky and Lasnik 1993), the empty category controllee in Control structures is PRO. The presence of PRO is mandated by the Theta Criterion, which requires that every θ-role be assigned to exactly one DP and that every contentful DP receive exactly one θ-role. Since the matrix subject receives a θ-role from the control verb, there must be a distinct DP in the embedded clause to be the external argument of the embedded verb. In addition, because PRO is referentially dependent, it is widely assumed that PRO must be syntactically bound to receive a referential interpretation. When this condition does not obtain, the arbitrary interpretation of PRO results: [PRO_{arb} *to win*] *is always fun.*

For the BC construction, the empty category subject of BC verbs identified above would be PRO:

(31) manomboka [mitondra ny fiara Rabe$_i$] PRO$_i$
begin drive the car Rabe
'Rabe is beginning to drive the car.'

Despite the directness of extending the P&P analysis to BC, it faces a number of difficulties. First, PRO in (31) is not bound. Nevertheless, the arbitrary interpretation of PRO in which the example would mean 'Someone is beginning to have Rabe drive the car' is unavailable, see (29b) above. Second, the configuration in (31) violates Condition C of the Binding Theory, which requires that R-expressions like *Rabe* be free. The DP is not free but the example is nonetheless grammatical. Since the arguments against the PRO analysis are essentially independent of the details of Malagasy syntax, we conclude that P&P quite generally rules out Backward Control.

7. A Minimalist Movement Analysis of Control

Given the failure of P&P to account for the BC construction, we pursue an alternative under Minimalist assumptions. The leading idea that we will develop is given in (32). BC does in fact contain a control relationship but it does not exist in surface syntax. It is formed in the covert syntax, at Logical Form (LF).

(32) there is an ordinary control relationship in BC but it does not exist on the surface, only in the covert syntax

Such a proposal requires a derivational view of Control (see O'Neil 1995, Manzini and Roussou 1999, and Hornstein 1999). In the remainder of the paper we develop (32) using the specifics of Hornstein 1999. We first present his movement analysis of Forward Control and then extend it to BC.

The leading idea in Hornstein's analysis is that the Control relation is created by movement from one thematic position to another. The proposal is developed within the Minimalist framework and assumes that this, and all other movement, is driven by feature checking. The core assumptions are in (33), from Hornstein 1995:78 and Chomsky 1995.

(33) a. θ-roles are features
b. a DP receives a θ-role by checking a θ-feature of a verb that it merges with
c. there is no upper bound on the number of θ-roles a chain can have
d. features may be strong or weak
e. the EPP feature is strong, Case/θ-role features are weak

Hornstein assumes that θ-roles are features and their 'assignment' is thus regulated by the tenets of Checking Theory. A DP will 'receive' a θ-role by checking the θ-role feature of a verb. Given that Control is reduced to movement, movement from one θ-position to another is necessarily permitted and there is no limit on the number of θ-role features that a DP can check.

The needed assumptions about features and feature checking are largely standard within Chomsky's (1995) Minimalist Program. Features of a head may be strong or weak. Strong features must be checked prior to Spell Out while weak features will be checked as late as possible in the derivation due to Procrastinate (Chomsky 1993). We assume, at least for Malagasy, that Case and θ-role features are weak and the EPP feature is strong.

With these assumptions, the derivation of an English Forward Control structure is (34), with the relevant features shown below the structure.

(34) a. Kim_i hopes t_i to win
b. $[_{IP}$ Kim $[_{VP}$ *t* hopes $[_{IP}$ *t* to $[_{VP}$ *t* win]]]]
✓CASE/EPP ✓θ_{hope} ✓EPP ✓θ_{win}

The DP *Kim* first merges with the embedded V' *win* and checks the external θ-role feature. It then moves to the embedded spec,IP to check the EPP feature of the embedded I°. From there it moves into the matrix clause and creates the control relation. It first stops in spec,VP to check the external θ-role feature of the control verb *hope* and then moves to the matrix spec,IP where it checks the EPP feature and Case. The derivation converges with all features checked.

Our fundamental claim about BC is that its analysis is identical to that of Forward Control except that the movement step that creates the Control relation occurs in the covert syntax. For the Malagasy example in (31), the Spell Out structure is (35) (Malagasy structure shown but English words substituted). The embedded clause is fully formed and the features there are checked. The overt derivation stops at this point yielding the desired constituent structure.

(35) $[_{IP}$ I° $[_{VP}$ begin $[_{IP}$ $[_{VP}$ *t* drive car$]_{VP}$ Rabe$]_{IP}$ $]$ $]_{IP}$
θ_{begin} ✓θ_{drive} ✓EPP/CASE EPP/CASE

As (35) shows, there are unchecked features in the structure and we are led to ask whether they cause the derivation to crash. For the Case and external θ-role feature of *begin*, the answer is no because these are weak features and do not need to be checked until LF. The EPP feature of the matrix clause however is strong and should cause the derivation to crash if not checked overtly. There are a number of ways around this apparent EPP violation and the solution that we will pursue is that the EPP can be satisfied by verb raising (Alexiadou and Anagnostopoulou 1998, Benmamoun 1999). That is, the EPP may be satisfied either by an XP in spec,IP or a verbal head raised to I°. In the latter case, no overt XP movement to spec,IP is necessary.

In the Malagasy structure then we hypothesize that the BC verb raises to I° overtly and checks the EPP feature. This is shown in the LF representation below. The proposal dovetails with Guilfoyle, Hung, and Travis' (1992) independent claim that verbs raise overtly to I° in Malagasy. Benmamoun 1999 implements the movement by assuming that the EPP feature is a strong D feature of I° and that it can be checked by a verbal head which is specified with the feature [+D]. Most verbs are [-D] and thus are incapable of satisfying the EPP even if they raise to I°. The [+D] BC verb however may exceptionally check the EPP upon raising. We believe that this approach is on the right track in that it locates some of the exceptional syntax of the BC construction in lexical specifications of the BC verb itself.

The control relation in the BC construction is created at LF:

(36) $[_{IP}$ begin $[_{VP}\ t\ t_{begin}\ [_{IP}\ [_{VP}\ t$ drive car$]_{VP}\ t]_{IP}\ ]$ Rabe$]_{IP}$

✓EPP ✓θ_{begin} ✓θ_{drive} ✓EPP/CASE ✓CASE

In the covert syntax, the controller DP moves into the matrix clause and establishes a control relation by checking the external θ-role feature of the BC verb. It then moves into the matrix spec,IP where it checks Case. The derivation concludes with all features checked.

It would appear that the controller checks Case twice and that we have a chain with multiple Case positions—a situation which is usually not permitted. We have no solution to this problem but simply suggest two ways around it. One approach is that Case checking is optional (McCloskey and Sells 1988, Ura 1998). The higher I° does not have a Case feature and so the controller does not check Case when it raises covertly. A second approach is that multiple Case chains are in fact permitted. There is a fairly large body of evidence supporting this conclusion (Yoon 1996, Bejar and Massam 1999, and references therein). We will leave it as an unresolved issue how a language would determine whether multiple Case chains are available.

To summarize, there are three differences between the English Forward Control derivation in (34) and the BC derivation in (35) and (36). First, the timing of the A-movement into the higher clause: In Forward Control the movement takes place overtly, in Backward Control, it takes place covertly. This difference determines whether the controller will surface in the higher clause or the lower clause. Second, the way in which the EPP is satisfied at Spell Out: In Forward Control the EPP is satisfied by overt XP movement of the controller. Under Backward Control, this XP movement has not yet taken place so another

means of satisfying the EPP must be available if a language is to have BC. We proposed that V°-to-I° serves this purpose in Malagasy. Third, the Case assignment characteristics of the construction: In the English Forward Control construction, the controller DP checks Case in the higher subject position only, resulting in a singly Case-marked chain. In the BC construction, the controller DP must be able to check Case at least in the lower subject position. It is unclear at this point what the Case characteristics of the higher subject position are. If Case is also checked there, then multiple Case chains must be permitted.

The primary theoretical question that the construction raises is whether syntactic theory should permit Backward Control as we have described it. If the answer is no, then PRO-based analyses of Control predict the impossibility and existing cases, including Malagasy, must be misanalyses. On the other hand, if the answer is yes, then we have suggested that a movement analysis of Control permits BC. Malagasy instantiates this possibility and thus provides interesting evidence for a movement analysis of Control.

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