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The Minimalist Syntax of Defective Domains

Gerunds and infinitives

Acrisio Pires

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The Minimalist Syntax of Defective Domains: Gerunds and infinitives
by Acrisio Pires

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To my family, especially my mother,
for all their love despite the distance.

To Lucia Lobato, *in memoriam*.

TABLE OF CONTENTS

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ABBREVIATIONS AND SYMBOLS

θ-role	thematic (theta)-role
ϕ	phi(agreement)-feature
~~ab~~	[strikethrough] checked features or deleted copies
acc-*ing*	clausal gerund with overt accusative DP subject
BP	Brazilian Portuguese
C_{AGR}	Case feature on the Tense head of the clause
CG	clausal gerund
cl	clitic
ColBP	Colloquial Brazilian Portuguese
CP	Complementizer Phrase
DP	Determiner Phrase
EC	Empty category
ECM	exceptional Case marking
EP	European Portuguese
EPP	EPP(Extended Projection Principle)-feature
FP	Functional Projection
GB	Government&Binding
INF	Infinitive
INFL	Inflection
LI	lexical item
MLC	Minimal Link Condition
MP	Modern Portuguese
NOC	non-obligatory control
NRI	non-restructuring infinitive
OC	obligatory control
OP	Old Portuguese
P&P	Principles & Parameters
1PL, 2PL…	1^{st}, 2^{nd} … person plural
PLD	primary linguistic data
poss-*ing*	gerund with overt genitive subject
PRT	particle
PVC gerunds	gerunds as complements of perception verbs
RI	restructuring infinitive

RP	restructuring predicate
1SG, 2SG…	1st, 2nd …person singular
Spec	specifier (position)
StdBP	Standard Brazilian Portuguese
T	Tense (inflectional) head
T_{def}	phi(agreement)-defective Tense head
TP	Tense Phrase
UG	Universal Grammar
vP	Light verb phrase (higher layer of the VP, where accusative Case is checked/valued and the external argument receives a theta-role)

INTRODUCTION

The main goal of this book is to propose an analysis of aspects of the syntax of a subset of defective sentential domains: clausal domains that are deficient in terms of their specification for certain features. These features, including primarily tense and agreement, have in general been taken to play a central role in syntactic operations associated with subject realization and interpretation, Case marking and control. The class of such defective domains varies somewhat across languages, including in general gerunds and infinitives, and sometimes subjunctives.

This book is an attempt to shed more light on the widely explored observation that non-finite domains are in several ways more defective than finite ones. From a theoretical perspective, the goal is to unify the treatment of certain non-finite domains that are defective in tense, person and/or number agreement, with respect to how they license different subjects, and how that relates to abstract and morphological Case, tense properties and control phenomena. I develop this approach in two domains that share important syntactic properties but clearly contrast in terms of their overt inflectional morphology: gerunds in English and infinitives in Portuguese.

Three questions are considered in detail in the book. First, the way in which different syntactic phenomena relate to the feature specification (e.g. agreement and tense) of non-finite categories. Second, given that such feature specification may be represented either overtly (by overt inflectional morphology) or covertly, it is necessary to explain which properties of the grammar come into play in the task learners have to carry on to set up the appropriate feature specification of different non-finite domains in their native language. That is, at first sight, different non-finite domains appear to be indeterminate regarding their possible feature specification, especially when there are no overt morphological distinctions among them. However, as I discuss in detail in this book, this indeterminacy is only apparent, and syntactic properties give indication of what feature distinctions may or may not be relevant for different non-finite domains, accounting for a range of different properties I consider for the non-finite domains I investigate. For example, the two gerund complements in (1) are at first sight identical in terms of their properties, and any

distinctive properties they may have are at first sight blurred by the apparent indeterminacy that arises from their similar behavior:

(1) a. Frank preferred [going out on Sunday].
b. Frank tried [going out on Sunday].

However, as I illustrate below and analyze later in detail, there are a range of different properties that distinguish the two types of gerunds, including for example the fact that the gerund complement of *prefer* but not of *try* allows an overt subject in the embedded clause, as seen in (2). This and other properties I will discuss later clearly show that despite the apparent indeterminacy regarding distinctions across different non-finite domains, there are clear, albeit indirect ways, to distinguish them, arguably yielding the need to treat them differently in terms of their feature specification. The syntax of different types of sentential gerunds in English is investigated in detail in chapters 1 and 2.

(2) a. Frank preferred [Mary going out on Sunday].
b. *Frank tried [Mary going out on Sunday].

In chapter 3 I turn to the investigation of two types of infinitives in Portuguese – inflected and non-inflected – considering for them questions similar to the ones I consider in earlier chapters for English gerunds. In chapter 4, I address a third question that constitutes a natural extension of the discussion about how the apparent indeterminacy in the properties of non-finite domains is dealt with in natural language: what mechanisms may yield the appearance of novel grammars with new defective domains, with feature specifications distinct from the ones of the grammars of previous generations. I consider possible requirements of a theory of language acquisition in order to evaluate different proposals for the rise of inflected infinitives such as (3) in the early stages of Portuguese.

(3) Eu vi os meninos saírem.
I saw the boys leave-INF-3PL
'I saw the boys leave.'

Then I analyze the loss of such inflected infinitives and other related innovations that have taken place especially since the 19th century in the grammar of colloquial Brazilian Portuguese. This gave rise to properties that are not found in European Portuguese, and which are in fact similar to the properties of English gerunds as in (1a), such as the licensing of overt subjects in the absence of overt inflectional morphology, as in (4).

(4) O João disse para eles sair. (Colloquial Brazilian Portuguese).
The João said to they leave-INF-∅.
'John told them to leave.'

There are various results from this research that are relevant from a theoretical and an empirical point of view. A few of these results are summarized below and the details are spelled out in the different chapters.

1 Gerunds: Phonologically null features

First, I develop in chapters 1 and 2 a detailed analysis of certain sentential gerunds in English, and argue that although they seem to represent a unified class, they actually project different structures in the syntax. Empirical motivation for this comes from variation in the way they license overt and null subjects (e.g. (1) vs. (2)), and from the tense and aspectual distinctions they allow. One hypothesis I entertain regarding these different gerunds is that they all project at least a VP, but they vary as to whether other functional projections are added to them, up to the level of a TP. This and other distinctions may at first be blurred by the apparent indeterminacy found in these non-finite domains, as illustrated in (1), but other mechanisms, illustrated by the contrast in (2), show whether these and other non-finite domains should in fact be treated in different ways regarding properties such as their functional projections (e.g. VP, TP) and their individual features (e.g. their tense and agreement specification). In addition, I consider in chapter 2 that such distinctions can be extremely fine-grained, and certain non-finite domains may not be distinct in terms of their functional projections, but simply in terms of features realized in their root projection.

I identify the first class of gerunds I investigate as Clausal Gerunds (henceforth CGs). Among the properties I analyze in detail, these gerunds may license overt subjects (5) (most often marked with accusative Case). They also occur in Case positions (5a-b), which is not always possible for finite clauses (6); and they are blocked from Case-less positions (5c).

(5) a. I_j prefer [Peter/ him/PRO_j reading a book].
b. $Mary_j$ talked about [John/ PRO_j moving out].
c. *John is preferred [reading a book].

(6) Mary talked about [*that John moved out].

Abney (1987), Milsark (1988) and others argue that CGs project as IPs (or VPs), but are recategorized into DPs by (morpho)syntactic affixation. However, these accounts are not entirely consistent with a bare-phrase structure view on category projection (Chomsky 1995b), depending on how the VP or IP is re-categorized as a DP. I analyze CGs simply as bare TP/IPs without appealing to recategorization (or to Government, contra Reuland 1983, Johnson 1988), and distinguish them from regular DPs and from poss-*ing* gerunds (whose subjects have genitive Case). For instance, among the relevant distinctions supporting this treatment, only CGs, but not DPs or poss-*ing* gerunds license *there* expletives as subjects:

(7) Paul counted on there (*'s) being many people in the party.

I also argue in chapter 2 for an additional difference between two types of sentential gerunds in English: clausal gerunds and TP-defective gerunds. As I mentioned briefly above, the subject of CGs can be either PRO or a lexical DP (5a-b), including *there* expletives (7), whereas TP-defective gerunds license only a PRO subject (8). In addition, CGs license perfective morphosyntax, whereas TP-defective gerunds do not (9).

(8) Bill_j avoided/tried [PRO_j / (*Peter/ him) talking to his boss].

(9) a. Ann counts on [John having finished the exam by now].
b. *Mark tried [having convinced his friends].

In chapter 2 I consider two accounts for the contrasts summarized in (10): the first possible account is that different sentential gerunds are distinct regarding which functional projections they allow. Alternatively, they may differ in terms of their (ϕ-)feature specification, that is, their set of agreement features — more specifically person and number (Chomsky 2000, 2001).

(10)

Property	CGs	TP-defective gerunds
Overt subject	yes	*
There-expletive subject	yes	*
Perfective morphology	yes	*
Independent tense (see next section)	yes	*

Under the first account the hypothesis is that gerunds may differ by projecting only to *v*/VP or up to TP (e.g. behaving in both cases as types of small

clauses or restructuring clauses; see Bošković 1994, Wurmbrand 2001 and references therein, for related proposals regarding infinitives).[1] According to the second approach, different gerunds may still display the same functional projections, but the (non-finite) functional heads they have in common may be distinguished regarding their feature specifications (e.g., they may be deficient regarding their ϕ-feature specification, corresponding to "ϕ-(in)completeness," in the sense of Chomsky 2000, 2001). This raises the question of why projection or feature differences arise, and how the learner determines the distinctions among them, when the surface properties of the corresponding structures do not immediately indicate the existence of a distinction. Under either approach, the learner determines distinctions in the properties of clausal domains from the lexical specification of features of functional/lexical heads. For instance, under the second approach the Tense head of a CG has the features necessary to check Case of an embedded subject DP as in (5a) and (9a). Within a feature-defectiveness approach, this is not possible for a TP-defective gerund, as in (8), which would lack the ϕ-features necessary for Case checking of the embedded subject. I discuss these issues in detail in chapter 2, in which I also consider a third class of gerunds besides CGs and TP-defective gerunds: gerunds as complements of perception verbs.

This feature-approach also receives support from overt (agreement, case or tense) morphology in various languages (e.g. Portuguese —discussed in detail in section 3 below and chapters 3 and 4, but also possibly languages such as Basque and Hungarian).

2 Features and control

Focusing on the analysis of null subjects, in chapters 2 and 3 I evaluate the correlation that recent Case theoretic approaches to control (null Case theory of control) make between tense/event binding properties and the properties associated with ECM/raising and control. I first show empirical problems for a null Case approach to control, originally proposed by Chomsky & Lasnik (1993) and later developed especially by Martin (1996, 2001) and Bošković (1995, 1997). Chomsky and Lasnik (1993) argued against the Government & Binding (henceforth GB) approach to control,[2] which was dependent on Government and, later, on the functional determination of empty categories.

[1] I treat the inflectional head of the clause as the Tense head, which projects a Tense Phrase (TP). I leave open the question of whether there is a separate AgrP (Agreement Phrase) in the clause, as in the Split-IP hypothesis (IP splits into AgrP and TP), proposed by Pollock (1989) and adopted in Chomsky (1995a) and later work.

[2] Chomsky 1981, 1986; see also Chomsky and Lasnik 1977.

Given the GB functional determination approach to control, PRO was taken to be a category that had both a [+anaphor] and a [+pronoun] feature. However, given that anaphors and pronouns have different requirements regarding where they can or need to be bound (pronouns cannot be bound within their binding domain, and anaphors have to be), the only way to allow PRO in the grammar was to propose that PRO could not appear in a governed position, which would leave it unbound. Given this, PRO would satisfy its contradictory binding requirements vacuously. As a consequence of not being in a governed position, PRO was also not allowed to be assigned Case.

Chomsky and Lasnik (1993) intended to eliminate Government from the approach to control, arguing that the Government analysis of control could not be reconciled with the hypothesis that movement in Minimalism only applies as a Last Resort operation (see also Hornstein 2003:14 for discussion). If movement is a last resort operation in Minimalism, and PRO must be ungoverned, then PRO must be allowed to move from a governed to an ungoverned position, as it was postulated to be the case in (11a-b). An empirical problem results from cases such as (11c), which should not be ungrammatical under the same view, if PRO is taken to escape from a governed position by means of movement, similar to what is taken to occur in (11a-b).

(11) a. Jill tried [PRO_1 to be seen t_1].
b. Jill never expected [PRO_1 to be seen t_1].
c. *Jill never expected [PRO_1 to seem to t_1 [that Sue likes coffee]]

Given these cases, Chomsky and Lasnik argued that the distribution of PRO could not be appropriately accounted for by virtue of its Binding Theory and Government properties, but instead its licensing needed to be subsumed under Case Theory, by checking a special type of abstract Case restricted only to PRO, which they referred to as null Case, and which could be checked only by the T head of a non-finite control clause.

Notice that given that this was part of one of the early Minimalist analyses, abstract Case was taken to be checked, instead of assigned, in the syntax. This results from the adoption in Minimalism of a (Strong) Lexicalist Hypothesis, by which lexical items are inserted in the derivation with all their relevant features. However, some features of lexical items are uninterpretable either at LF or at PF, and in such cases they need to be checked in the syntax. Case was taken to be one type of uninterpretable feature that needed to be checked in the syntax to avoid an ungrammatical derivation (i.e. a derivation that would crash at one of the interfaces because an uninterpretable feature had not been checked). The null Case analysis maintained the empirical observation that PRO and overt DPs are to a large extent in complementary distribution, since

Spec, TP of a non-finite control clause was not taken to be a position where an overt DP could check its Case, as in (12):

(12) Frank tried [PRO_1/*Mary to leave].

However, Chomsky and Lasnik associated the null Case feature with an infinitival head, which also required them to stipulate that only control non-finite heads (infinitives, in the cases discussed by Chomsky and Lasnik) could carry a null Case feature, to account for why PRO was licensed in control infinitives, but was absent in raising and ECM infinitives. Chomsky and Lasnik blocked PRO from raising and ECM clauses by stipulating that, different from control infinitives, those clauses did not carry a null Case feature. In order to avoid the stipulative distinction between control and ECM/raising, Martin (1996, 2001) later proposed a source for the null Case in control clauses, distinguishing them from raising/ECM clauses. He argued that control infinitives are [+tense] (developing a proposal by Stowell 1982), which licenses null Case PRO (13a), whereas raising (13b) and ECM infinitives (13c) are [–tense], so preclude null Case PRO. I will present certain problems to this approach in chapter 2.

(13) a. John decided [PRO to leave].
b. Ann seemed [*t* /*PRO to be interested in the new job].
c. Bill believed Mary [*t* to be a good friend]./
*Bill believed [PRO to be a good friend].

Martin also assumes that event-denoting predicates contain an event variable that needs to be bound by tense or some other operator –- e.g. auxiliary *be/have* (Enç 1990). He proposes that this event variable is not available in [–Tense] raising/ECM (13b-c), and argues that only stative or habitual predicates are allowed in these cases. Under his reasoning, because ECM and raising complements are [–tense], they cannot bind (individuated) events (14) nor license PRO (13b-c).

(14) *The defendant seemed to the DA [*t* to conspire against the court at that exact time].

However, I argue in this book that there is no one-to-one correspondence between null Case/PRO and a [+tense]/[+eventive] interpretation. Table (15) summarizes many problems for a Null Case theory (as indicated in capital letters). That theory predicts that: (i) PRO/null Case require a positive specification for both tense and eventive interpretation, contra the exceptions

indicated in capital letters in (15a-d); and (ii) in order to block PRO, raising and ECM require a negative specification for both tense and eventive interpretation, contra (15e-f).

(15)	*Syntactic domain*	*PRO*	*Tense*	*Eventive Predicate*
a.	Control in *to*-infinitives	yes	NOT ALWAYS	yes
b.	Control in TP-defective gerunds	yes	NO	yes
c.	Control in clausal gerunds	yes	yes	NOT ALWAYS
d.	Control in *believe*-type infinitive complements in Brazilian Portuguese	yes	NO	NO
e.	Raising in *to*-infinitives	no	no	YES
f.	ECM in *to*-infinitives	no	YES	YES

I discuss in chapters 1 and 3 the problems for raising and ECM pointed out in (15), and address the problems for control throughout chapters 1 to 3. Consider for instance (15b). TP-defective gerunds are [–tense] and cannot license a temporal specification that is distinct from the matrix clause, as shown in (16a) (whereas CGs can (16b)). However, TP-defective gerunds still license PRO (8), which argues against Martin's hypothesis that only [+tense] projections license PRO/null Case.

(16) a. *Bill$_j$ avoided/tried yesterday [PRO$_j$ coming to dinner tomorrow].
b. Mary$_j$ worried yesterday about [Paul/him/PRO$_j$ coming to dinner tomorrow].

Consider (15d). Brazilian Portuguese (hereon BP, (17a)) and French (17b) *believe*-type verbs take infinitival complements only with PRO subjects, and not as ECM complements, as opposed to English (17c).

(17) a. A Maria acredita [PRO / (*o João) ter convencido a platéia].
b. Marie croît [PRO / (* Jean) avoir convaincu son auditoire].
c. Mary believes [(*PRO)/ John to have convinced his audience].

According to the null Case approach, If all cases in (17) were [–tense], PRO would be ruled out, contrary to fact. Bošković (1997) argues that in fact the French cases are [+eventive], given that they can bind an individuated event in the absence of a tense (or some other) operator (according to Martin 1996:59) as in (18a). A possible operator would be the perfective *have*, not necessary for the individuated event interpretation to occur in (18a). From this Bošković concludes that *believe*-type verbs are all [+tense], which would explain why they license PRO. However, as I show in this book, BP *believe*-type complements cannot have a [+eventive] interpretation in the absence of an overt operator, as shown in (18b); hence, I argue that they are in fact [–eventive]. In addition, they cannot carry a [+tense] interpretation in such cases, as shown in (18c). Thus the BP cases are predicted by Martin and Bošković to preclude PRO, contrary to fact.

(18) a. Paul croît rêver. (French)
b. *O Paulo imagina sonhar. (BP)
The Paulo believes dream-INF
'Paul thinks that he is dreaming.'
c. *O Paulo acreditou ontem [viajar para Londres hoje/ há dois dias]. (BP)
The Paulo believed yesterday [travel- INF to London today/ has two days]
'Paulo believed yesterday that he would travel to London today/two days ago.'

Crucially, neither the standard GB analysis nor the null Case Minimalist approach had an appropriate way to account for a different set of cases, which violate the apparent complementary distribution between PRO and overt DPs. The most robust of these cases corresponds to clausal gerunds, which I analyze in detail in chapter 1. Clausal gerunds, different from other non-finite clauses, allow overt subject and PRO to occur exactly in the same environment, as in (19):

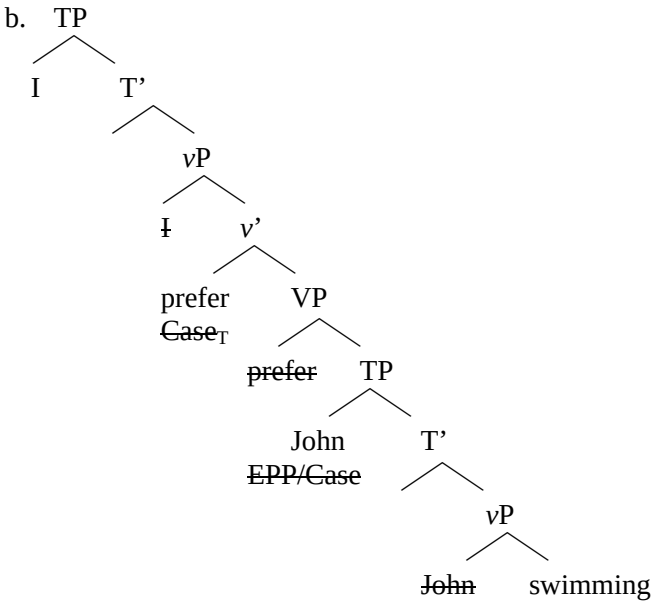
(19) a. Mary liked [Bill working at home].
b. Mary liked [PRO working at home].

In order to avoid the different empirical problems I illustrated above, in my analysis I will treat obligatory control (OC) PRO both in English gerunds and in Portuguese non-inflected infinitives as resulting from NP movement of the controller NP (exploring the approach to control as movement proposed in Hornstein 1999, 2001; see also related approaches in Manzini & Roussou 2000, O'Neil 1995). This provides a principled account for the various OC

properties I identify both for English gerunds and for Portuguese non-inflected infinitives. Under this analysis NPs can receive multiple θ-roles under Enlightened Self-Interest (e.g. Lasnik 1995). Consider for instance (20a), represented in (20b). As I will develop in detail in chapter 1, both the embedded CG subject and its (inflectional) T^0 head carry separate uninterpretable Case features that need to be checked, licensing CGs only in Case marked positions. Only *after* the T^0 of the CG gets its own Case feature checked by the matrix *v* head,[3] can the CG check the Case of its overt subject *John*, blocking further movement. However, I argue that an alternative derivation (21) is also possible, in which the CG subject *John* can move from the CG to the matrix [Spec, *v*P] *before* the Case feature on the T^0 of the CG is checked, yielding obligatory control.

(20) a. I prefer [John swimming].
[$_{TP}$ I [$_{T'}$ [$_{vP}$ ~~I~~ [$_{v'}$ prefer$_j$ [$_{VP}$ ~~prefer~~ [$_{TP}$ ~~John~~ [$_{T'}$ [$_{vP}$ ~~John~~ swimming]]...

b.



[3] In Minimalism, as developed in Chomsky 1995a, 2000, 2001, following Hale & Keyser 1993a, the VP is split into a functional vP (verb Phrase) that licenses accusative Case and assigns a thematic role to an external argument, and a lexical VP where the internal argument is assigned its thematic role.

(21) John prefers [~~John~~ swimming].

If the subject moves out of the embedded CG and there is only one Case checking position in the matrix clause, as it is the case when the CG is the complement of a passive or raising matrix verb (22), the Case feature of the CG T^0 cannot be checked and the derivation crashes, explaining why passives and raising verbs cannot take CGs as complements. I will also show later why it is not possible to treat CGs as ECM-complements in such cases.

(22) a. *John was preferred [~~John~~ swimming].
b. *John seemed [~~John~~ swimming].

I analyze these and other cases in detail in chapter 1, developing a theoretical approach that will enable an appropriate analysis of the complex syntactic behavior of clausal gerunds.

3 Inflected and non-inflected infinitives: Case and control

In chapter 3 I analyze the properties of infinitives in Portuguese from a similar perspective to the one I adopt for English gerunds, also extending to them an analysis of obligatory control as the result of NP-movement. Portuguese infinitives can be non-inflected or inflected for person/number. Non-inflected infinitives (23a), contrary to inflected ones (23b), consistently show OC properties, e.g. (i) the need for a local c-commanding antecedent and (ii) the availability of a sloppy reading under ellipsis.

(23) a. Paulo_j espera PRO_j vencer e a Silvia também. (= Silvia vencer)
Paulo_j expects PRO_j win- INF and the Silvia too. (= Silvia win, *sloppy reading*).
'Paulo_j expects PRO_j to win and Silvia does too.' (= Silvia win).
b. Paulo espera *pro* vencer*mos* e a Silvia também. (= nós vencermos).
Paulo expects *pro* win- INF -*INFL* and the Silvia too. (= we win, *strict reading*).
'Paulo expects us to win and Silvia does too.' (= we win).

I analyze the null subjects of inflected infinitives as *pro*, adopting the standard approach to this case (see e.g. Raposo 1987), but argue that OC PRO in non-inflected infinitives in Portuguese is the residue of NP movement. The most interesting consequence of this distinct analysis is that the morphological

difference between inflected and non-inflected infinitives correlates directly with a movement analysis in conjunction with an approach to Case checking/valuation as dependent on ϕ-feature checking.[4] That is, the person/number agreement of an inflected infinitive checks the Case feature of a *pro* or overt subject DP, blocking further movement. However, since non-inflected infinitives lack overt agreement, they cannot check Case, forcing the embedded subject to move to the matrix clause to check Case.

Chapter 3 also includes some discussion about several other proposals that have been made to account for Case, agreement and control properties of non-finite domains in other languages. Two specific cases are discussed there: Greek subjunctives introduced by the particle *na*, and infinitives with overt subjects in other Romance languages.

In chapter 4 I show how the approach explored in this book, properly related to a theory of language acquisition and change (e.g. Lightfoot 1999, Hale 1998 and references therein), explains various innovations in the diachrony of Portuguese. I specifically investigate infinitives in Portuguese from the perspective of their historical changes. First, I show that the loss of agreement morphology in inflected infinitives in Brazilian Portuguese has yielded only partial effects on their syntactic properties. Most importantly, I show how these effects follow from the NP-movement approach to control that I adopt in this book, and from a theory of acquisition and change that relies on the need for children to find local triggers to set up the properties associated with their grammars. I also shift the time perspective to Old Portuguese and evaluate the two major competing approaches that have been proposed for the rise of

[4] The approach to Case checking as dependent on ϕ-feature agreement is adopted in different Minimalist proposals (see e.g. Chomsky 1995a). In Chomsky (2000, 2001) the Case feature on a DP is uninterpretable and unvalued, and it is by means of valuation that it can be deleted, to avoid an ungrammatical derivation (a crash) at the interfaces. However, in this approach an uninterpretable feature needs to be valued, instead of checked (contrary to what was proposed in Chomsky 1995a). The distinction between checking and valuation is irrelevant for the focus of this research, and I may refer to both terms interchangeably (checking/valuation). In addition, in the approach in Chomsky (2000, 2001), there is no Case feature on the T head that matches the Case feature on a DP, but that T head needs to carry uninterpretable ϕ-features (which also need to be valued) in order to be able to value the Case feature of a DP, as in (i), in which T checks/values the Case feature of *Frank*, and as consequence also checks/values its own agreement (ϕ-)features:

(i) [$_{TP}$ Frank T [$_{vP}$ ~~Frank~~ annoyed the leviathan].

This can be referred to as the asymmetric approach to Case and ϕ-feature valuation, and it is the approach I primarily adopt in this book (see e.g. chapter 1, fn. 37 for other details on the theoretical background). This approach will be applied in detail to English gerunds and Portuguese infinitives, in chapters 1 to 3.

inflected infinitives. I explain how a theory of acquisition can provide important arguments against analyzing the rise of inflection in infinitives as the result of an analogy with finite forms. Furthermore, the need to explain the rise and loss of inflected infinitives presents potential challenges for an all-or-nothing parameter-based approach to acquisition and change, which are not a problem for an approach based on local structural triggers.

Finally, after relating the loss of inflected infinitives to the widespread loss of agreement morphology, I explore the possibility that these changes connect to a further set of changes that took place in Brazilian Portuguese, including loss of verb-subject inversion and shifts in clitic placement. I argue that some of these and other changes are the result of the weakening and possible loss of a single projection in the left periphery of the clause. That is, I relate the loss of agreement morphology in BP to the weakening and loss of a functional projection above TP, referred to as FP (proposed by Uriagereka 1995a,b, to account for a range of different phenomena in Romance, including the licensing of certain clitics and point-of-view interpretation). I then show how this change accounts for the loss of inflected infinitives and the loss of verb movement to the head F of FP, also yielding a systematic loss of clitic enclisis from mid-18th century to contemporary BP. The fact that several of these changes accelerated around the mid-19th century and were completed in a relatively short period of time, by the early 20th century, not only supports the hypothesis of the loss/weakening of FP, but requires an approach along these lines, which accounts for a series of apparently catastrophic changes by linking them through a single structural change that has consequences for a wide range of constructions in the language.

The book is divided into 4 chapters. Chapter 1 covers clausal gerunds in English. It presents a minimalist analysis of clausal gerunds – V-*ing* constructions where the subject is either a PRO or a lexical DP marked with accusative or nominative Case. Chapter 2 analyzes in some detail gerunds without overt subjects (TP-defective gerunds) and gerunds as complements of perception verbs. Chapter 3 investigates the Case and control properties of subjects in inflected and non-inflected infinitives in Portuguese. Chapter 4 analyzes changes in the history of these infinitives and relates them to a larger set of innovations in the language. It argues that they follow from a single structural change that would have affected a range of different phenomena, and proposes an explanation for them from the perspective of a theory of acquisition and change.

I adopt a minimalist approach to the syntax of defective domains, grounding important aspects of the discussion on aspects of recent proposals within the Minimalist Program, primarily Chomsky 1995a, 2000, 2001 and references therein. However, the different proposals made here emphasize and sometimes introduce empirical phenomena that are crucial for an appropriate understand-

ing of the syntax of the non-finite domains under consideration and of defective sentential domains in general. In this respect, I hope that this book will appeal to scholars and students interested in different frameworks.

In general, I hope to have developed a coherent picture and model to explain the range of phenomena I analyze in the chapters that follow. Given the scope of this book, I chose to focus on certain non-finite domains that have received much less attention in the literature with respect to the phenomena I investigate here. I hope this makes the ensuing discussion significantly more interesting. I leave it up to the reader to evaluate how convincing my arguments and the empirical evidence are for the proposals I present.

CHAPTER 1

THE MINIMALIST SYNTAX OF CLAUSAL GERUNDS

1 Introduction

This chapter proposes an analysis of the syntax of a class of gerunds,[1] referred to here as clausal gerunds, in which the subject can be either a PRO or an overt DP Case-marked with accusative Case (acc-*ing*) (1) or with nominative Case.

(1) a. Susan worried about PRO being late for dinner.
b. Susan worried about John/him being late for dinner.

These structures yield problems for different approaches to Case and to control, given that the position in which overt DPs can occur is taken to be ruled out as a position where control null subjects (PRO in standard Principles & Parameters approaches) are allowed. Conversely, the position where control null subjects occur is ruled out by different theories as a possible position for overt subjects. First, it is argued here that the alternation between overt and null subjects exactly in the same context in Clausal gerunds (henceforth CGs) can be successfully analyzed without the adoption of entirely independent structures for the two types of CGs. This is supported by the fact that there are no relevant empirical distinctions in their feature specification that can be taken to be responsible for the distinction between CGs with control null subjects vs. CGs with overt subjects.[2]

[1] Gerunds themselves are part of a large set of structures with the morphological structure V-*ing* (where V stands for a verb root) that include among others the progressive form (*John is sleeping*), adjectival modifiers (*an interesting person*). These are outside the scope of this book.

[2] In chapter 2 I shall consider two other gerund structures: in one the subject must be PRO (TP-defective gerunds) and in the other the subject must be lexical (gerunds as complements of

Furthermore, this analysis will account for a wide range of facts about the distribution of CGs which have not been entirely addressed in the literature, including for instance the fact that CGs are ungrammatical in the complement position of passive (2a) and raising matrix verbs (see section 4). CGs are grammatical in these clauses only if the embedded CG head moves to the matrix subject position pied-piping the whole clause (2b):

(2) a. * John was preferred [reading a book].
b. [John reading a book] was preferred.

Three main environments in which clausal gerunds can occur will be used for various tests of grammaticality (see e.g. Milsark 1988, Pires 1999, 2000, 2001a, Reuland 1983): complements to verbs (3a), complements to prepositions (3b, c), and subject position (3d):[3]

(3) a. Mary favored [Bill taking care of her land].
b. Susan worried about [Mark being late for dinner].
c. Sylvia wants to find a new house without [Anna helping her].
d. [Sue showing up at the game] was a surprise to everybody.

Parallel to the CG cases I intend to consider here (1)-(3), gerunds also occur as poss(essive)-*ing* constructions such as (4), where the lexical subject is marked with genitive Case (see Chomsky 1970, Abney 1987 and references therein):

(4) Mary's winning the contest was a big surprise.

Although I compare CGs and poss-*ing* constructions below, the analysis of poss-*ing* constructions is beyond the scope of this chapter, which considers specially the CGs in (1)-(3) as empirical evidence, given the fact that they are the only gerunds that allow an alternation between overt and null subjects.

This chapter argues that the complex alternations and restrictions on the distribution of CGs results from the interaction between Case and Agreement valuation, the limited possibility of A-movement out of a clausal gerund, and convergence considerations resulting from the existence of distinct numera-

perception verbs/PVC gerunds), and there is no alternation between PRO and overt subjects in either type of structure.

[3] For some other relevant work on gerunds in English and in other languages see also Baker 1985, Battistella 1983, Borer 1990, Borgonovo 1994, Chierchia 1982, 1984, Kaiser 1999, Munn 1991, Ross 1972, Yoon 1996.

tions. Additionally, it discusses briefly the connection of the phenomena analyzed here to possible cross-linguistic counterparts.

Section 2 discusses the structure of CGs, analyzed here as projecting a TP/IP. This sections discusses the way in which CGs can be distinct from poss-*ing* constructions (V-*ing* constructions whose subject is marked with genitive Case), from regular DPs and from finite clauses. Section 3 analyzes the behavior of null subjects in CGs (standardly analyzed as PRO). It presents new problems for Tense/Null Case approaches to control and then proposes that the null subject with obligatory control properties (OC) of CGs can be effectively analyzed as the result of A-movement. As for CGs in subject position, they show non-OC properties and their null subjects do not result from movement. Section 4 lays out the detailed analysis that explains old and new facts about the distribution of different CGs, showing among other cases how their common features can account for the occurrence of either null or overt subjects in their derivation.

2 The clause structure of Clausal Gerunds

CGs behave in most respects like clauses (see e.g. Horn 1975, Williams 1975, Reuland 1983, Kaiser 1999). Several properties distinguish CGs both from regular DPs and from poss-*ing* constructions. Poss-*ing* constructions have been shown to pattern with DPs in different respects (Chomsky 1970, Williams 1975, Abney 1987, Milsark 1988 among others). Abney (1987) argues that gerunds should be re-categorized as DPs at some point in the derivation. For the purposes of the analysis developed in sections 3 and 4, it will suffice to treat CGs as projecting a TP in the derivation.

At least two properties apply to both CGs and poss-*ing* but distinguish them from DPs, making them pattern with clauses: (i) both V-*ing* constructions, but not DPs, can be modified by (VP)-adverbs (5); (ii) both V-*ing* constructions can directly select for a complement (6a), which can satisfy a Case requirement without need for *of*, which is required in an NP-complement (6b-c):

(5) a. [John's/John quickly leaving] surprised everybody.
b. * [John's quickly departure] surprised everybody.

(6) a. [Mary's/Mary revising the book] surprised everybody.
b. [Mary's revision *of* the book] surprised everybody.
c. * [Mary's revision the book] surprised everybody. [4]

Despite these two properties common to both CGs and poss-*ing*, CGs are different from poss-*ing* (and from regular DPs) but like regular clauses in various other respects:[5] (i) CGs accept certain sentential adverbs which poss-*ing* and DPs do not (7); (ii) CG complements allow (long-distance) wh-extraction, whereas poss-ing complements do not (8); (iii) the subject position of CGs, but not that of poss-*ing*, can be filled with an expletive, as indicated by the distribution of the pure expletive *there* (9); (iv) poss-*ing* are like DPs with respect to Case assignment to their subjects, which are also assigned genitive Case, a possibility that does not hold for CGs, in which the subject is assigned accusative (10) or nominative Case:[6]

(7) Mary(*'s) probably being responsible for the accident was considered by the DA.

(8) a. What did everyone imagine Fred(*'s) singing?
b. Who did you defend Bill(*'s) inviting?

(9) You may count on *there*(*'s) being a lot of trouble tonight.

[4] Notice that in this respect, the V-*ing* constructions in (i) pattern with regular DPs, and cannot be collapsed with CGs or with poss-*ing* constructions (see Chomsky 1970, Abney 1987). In addition, contrary to CGs and poss-*ing*, a VP-adverbial is not possible in (ic):

(i) a. Mary's revising of the book.
b. Mary's quick revising of the book.
. c. * Mary's quickly revising of the book.

[5] The tests in this section are illustrated with the distinction between CGs and poss-*ing*, but DPs and poss-*ing* pattern together regarding these tests, and differently from CGs.
[6] I return in section 5 to the CGs that may license a nominative subject.

(10) Mary worries about him being tired of the trip.[7]

Regarding (9), in many recent approaches it has been assumed that the functional element Tense (T) needs to have its specifier position (Spec, TP) filled by a lexical item (the Extended Projection Principle/EPP). Some proposals (see e.g. Chomsky 1995a, 2000, 2001 and references therein) attribute this requirement to the presence of a feature (EPP-feature) in T, which needs to be satisfied by an element in Spec, TP. [8] If CGs are TPs, an appropriate expression needs to occur in their [Spec, TP] to satisfy the EPP requirement of their T^0.[9]

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[7] Although Abney proposes an external DP treatment for acc-*ing* (CGs with an accusative overt-subject), he points out a host of other properties that distinguish acc-*ing* from regular DPs and from poss-*ing* (which he also treats as DPs). This includes the impossibility with CGs (but not with poss-*ing*/DP) of plural agreement (examples (ia-c) from Abney 1987:175):

(i) a. That John came and that Mary left bothers/ (* bother) me.
b. John coming (so often) and Mary leaving (so often) bothers/(* bother) me.
c. John's coming and Mary's leaving bother me.
d. Bill's arrival and Mary's departure bother me.

Such differences further support the structural treatment of CGs as distinct from both poss-*ing* and regular DPs.

[8] The EPP-feature is an attempt to make the Extended Projection Principle (Spec, TP must be obligatorily filled) compatible with a Minimalist approach. Chomsky (2000:102, 109) proposes that an EPP feature needs to be satisfied by merge of an XP in Spec, TP, and that it may be present in Spec, *v*P and Spec, CP as well. Chomsky treats the EPP as an uninterpretable feature, but then apparently refers only to EPP satisfaction, instead of checking/valuation. I use the term 'EPP satisfaction' simply as a neutral alternative. The distinction between an EPP-feature and other features may become more obvious if one considers that it can be satisfied under lexical insertion (pure merge, Chomsky 2000:103) that does not result from movement, different from Case and ϕ-feature checking/valuation (but similar to what may need to be adopted for θ-roles, if they are also treated as features, as I will consider in section 4.1 — see other relevant references there). Much debate has taken place in Minimalism regarding the appropriate approach to the EPP, including its potential elimination (see fn. 9).

[9] Consider also cases with expletive *it*, in which a contrast similar to (9) holds:

(i) I wouldn't count on *it* (* 's) raining tomorrow.

In different approaches that appeal to EPP requirements, besides lexical DPs and overt expletives, empty categories such as control PRO and arbitrary control PRO can also satisfy the EPP requirement (ii). Given this, it seems clear that the EPP is not a requirement for phonological realization of a category in Spec, TP, although the hypothesis that it has to trigger overt movement of a DP in the absence of an expletive (Chomsky 2000, 2001) indicates that its satisfaction has to take place before Spell-out.

In sum, CGs share several properties with regular clauses that distinguish them from DPs and, in most cases, from poss-*ing* as well.[10] This indicates that they cannot be analyzed as regular DPs. Given the evidence that CGs behave as clauses, they will be analyzed here as projecting at least up to a TP.

However, there is one general fact about the distribution of CGs that raises a problem for a characterization of CGs as other types of clauses. Different from regular declarative clauses but similarly to DPs and poss-*ing*, the CGs under consideration here have to appear in a Case position in the course of the derivation. This is supported by three kinds of evidence. First, the CGs I analyze in detail in this chapter occur in Case positions, as indicated by (3) repeated as (11) below:

(11) a. Mary favored [Bill taking care of her land].
b. Susan worried about [Mark being late for dinner].
c. Sylvia wants to find a new house without [Anna helping her].[11]
d. [Sue showing up at the game] was a surprise to everybody.

Second, these CGs are ungrammatical in positions that are standardly treated as Case-less positions, such as passive clause complements (12), a position in which only other clause types are possible (13).[12] CGs are otherwise allowed in the subject position of passive clauses and in the complement

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(ii) a. You_i may count on PRO_i winning the game tonight.
b. PRO_{Arb} arriving on time is what matters now.

See, however, Bošković 2002, Castillo, Drury & Grohmann 1999; Epstein, Pires & Seely 2005; Epstein & Seely 2006, Grohmann, Castillo & Drury 2000, Martin 1999, and references therein for attempts to derive EPP effects from other properties of the grammar.

[10] Other less marked syntactic restrictions seem to apply to the subject of a DP and the subject of a poss-*ing*, but not to CGs. As the examples below indicate, CGs (ic-iic) are unlike regular DPs (ia-iia) and poss-*ing* (ib-iib), in that only CGs freely allow complex subjects which have PPs or full relative clauses as complements:

(i) a. ? The woman at the door's books were found.
b. ? John counted on the woman at the door's reading the instructions.
c. John counted on the woman at the door reading the instructions.
(ii) a. ? The player who struck out's bat was found.
b. ? The fans counted on the player who struck out's returning to the field.
c. The fans counted on the player who struck out returning to the field.

[11] I address in this book only some of the properties of CGs as PP adjuncts and as absolute clauses, although I assume they behave in major respects like CGs in verb complement positions. See section 5 of this chapter for specific discussion about Absolute CGs.

[12] Section 4 will analyze in detail the derivation of different cases that are ungrammatical due to absence of a source of Case for the clausal gerunds.

of the corresponding active sentences (14), which are taken to be standard Case positions:

(12) a. * It was expected [Frank reading this novel].
b. * Frank was expected [reading this novel].

(13) a. It was expected [that Frank would read this novel].
b. John was expected [to read this novel].

(14) a. [Frank reading this book] was preferred.
b. I prefer [Frank reading the book].

Third, taking CGs to carry a Case requirement can also account for why CGs can occur as complements to prepositions (15b), unlike finite and infinitive clauses (15a). In this respect, CGs behave like poss-*ing* and DPs (15c):

(15) a. * Mary talked about [(that) John moved out/ John to move out].
b. Mary talked about [John moving out].
c. Mary talked about [John's moving out/ John's move].[13]

There is one other context in which a distinction between CGs and finite clauses may ultimately be the result of the Case dependency found in CGs. This is the case of *it*-extraposition (i.e. extraposition in association with expletive *it*). Reuland (1983) suggests that expressions that require Case marking cannot undergo *it*-extraposition in English. If this is so, no expression that needs to be assigned Case should be allowed in such contexts. Crucially, this is born out by the fact that besides CGs, neither DPs nor poss-*ing* can be *it*-extraposed, arguably because they are obligatorily Case marked. Along these lines, *it*-extraposition is possible with finite clauses (16a), but impossible with CGs (16b), with poss-*ing* (16c) and with regular DPs (16d):[14]

[13] Notice that embedded indirect questions behave similarly to CGs and different from regular clauses in this respect:

(i) Mary talked about [why John moved out].

[14] This does not explain why *it*-extraposition should be impossible for Case-marked expressions. Reuland (1983) proposes a possible Government & Binding account which awaits detailed re-evaluation in the context of the Minimalist Program. An alternative account is that the expletive *it* also independently needs to have a Case feature valued (see also fn. 61), and there is no other source for Case valuation of the extraposed phrase in the relevant examples. However, this is complicated by the fact that the restriction on *it*-extraposition of DPs does not

(16) a. It was tragic that Paul lost the elections.
b. *? It was tragic Paul losing the elections.
c. * It surprised me Mary's leaving town. (Williams 1975 (76)).
d. * It surprised me Paul's loss.

A similar pattern holds for the contrast between CGs and infinitive clauses, since the latter are allowed in the *it*-extraposition context (17a), presumably also due to the fact they do not need to satisfy a Case requirement, contrary to CGs:

(17) a. It is impossible [to read this book.].
b. * It is impossible [reading this book.]. [15]

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extend to heavy-NP shift, raising a question whether the two are closely related phenomena. In addition, the contrast in the text regarding *it*-extraposition does not extend to other constructions that are distinct by the presence of an intonation break, that are more akin to topicalization, and which are acceptable both with CGs and with regular DPs:

(i) a. It was tragic, Paul losing the elections.
b. It surprised me, Paul's loss.

If these cases are indeed akin to topicalization, the reason why CGs are licensed here should follow from the fact that Case-valued phrases (including CGs and regular DPs) can occur in a topicalized position, even if it is not clear how the treatment of Case assignment/valuation under topicalization (and in the absence of movement) can be reconciled with structural Case valuation by a Case-valuing head.

[15] Consider two further positions where the occurrence of CGs and poss-*ing* (together with DPs) is accepted by most speakers, but where finite and infinitive clauses are not accepted: subject position of interrogative questions (i) vs. (ii), and cleft focus position, (iii) vs. (iv):

(i) a. Did [Dan kissing Mary] bother her parents?
b. Did [Dan's kissing Mary]/[the kiss] bother her parents?
(ii) a. * Did [(that) Dan kissed Mary] bother her parents?
b. * Did [(for Dan) to kiss Mary] bother her parents?
(iii) a. It was [Mary leaving town] that surprised me.
b. It was [Mary's leaving town]/[Mary's departure] that surprised me.
(iv) a. * It was Mary to leave town that surprised me.
b. * It was that Mary left town that surprised me.

There may be a straightforward account for why CGs, poss-*ing* and DPs pattern together in these respects, and differently from finite and infinitive clauses, if only Case-marked expressions (arguably CGs, poss-*ing*, DPs) can occur in the subject position of interrogative questions and in a cleft focus position. However, further investigation is necessary regarding this empirical restriction, also considering that the subject position of declarative clauses never imposes a similar restriction on finite and infinitive clauses:

The Case dependency of CGs will be accounted for here by assigning to them a Case feature that needs to be valued in the course of the derivation (or valued, under Chomsky's 2000, 2001 approach). However, given the empirical difficulties summarized before for collapsing CGs with regular DPs, this book will adopt the position that CGs with null and with overt subjects should not be analyzed as also projecting a root DP projection, in order to explain the complex distribution of CGs analyzed in sections 3 and 4.

Different generative accounts of CGs have assumed that they share with finite clauses at least part of their structure. On the one hand, Abney (1987), Milsark (1988) and Kaiser (1999) argue that these constructions project as VPs or IPs and are (re)-categorized into an NP or a DP in the syntax, by a process of syntactic affixation, in which *-ing* is affixed or adjoined to the IP/VP projection *converting* it into a DP. Abney and Milsark argue that the *–ing* projection is underspecified for morphological or syntactic features, and that allows the re-categorization to take place. However, the various differences between CGs on the one hand and DPs and poss-*ing* on the other hand raise complications for a re-categorization of CGs as DPs. Furthermore, it is unclear how a process of conversion of a syntactic projection from category X to category Y can take place in narrow syntax, if one wants to distinguish derivational processes of the kind found in derivational morphology (as opposed to inflectional morphology) from operations that apply in narrow syntax (see e.g. Chomsky 1970 for seminal discussion).[16] Reuland (1983) and

(i) a. [That Dan kissed Mary] bothered her parents.
b. [(For John) to leave] is unacceptable.

[16] In Abney's (1987:223, 226) analysis, *-ing* in acc-*ing* constructions is affixed to an IP to project a DP, but crucially for Abney, there is no D-head in acc-*ing* cases. Abney does not clarify how this can be compatible with the X-bar Theory approach he adopts, based on endocentricity of X-bar projections (Stowell 1981). Abney argues that this lack of a D head is necessary to explain why poss-*ing* (a DP in his analysis) only triggers plural agreement in coordinated structures (ii), whereas acc-*ing* triggers singular agreement (ia) (see also fn. 7). For This is arguably because the latter (like finite clauses (ib)) does not carry a D-head that has the relevant ϕ-features to trigger plural agreement.

(i) a. Bill arriving and Mary leaving bothers/(* bother) me.
b. That Bill arrived and that Mary left bothers/(*bother) me.
(ii) Bill's arriving and Mary's leaving (* bothers)/bother me.

Schueler (2004) proposed a DP-analysis of gerunds that is similar to Abney's, but which avoids the endocentricity violation, adopting the view that gerunds are nominalizations at different {F}(shell) levels (Grimshaw 2000). Schueler argues that plural agreement is also possible with CGs if there are different events at play (as opposed to a single collective event).

Johnson (1988) each present an account that dispenses with the process of syntactic re-categorization/affixation of CGs into DPs (although these two analyses rely heavily on the properties of Government in order to account for the behavior of CGs, an aspect that does not come into play in the analysis I lay out in this book). What is common to different analyses is the empirical evidence showing that CGs always project as clauses (TPs here). Abney (1987:173) argues that the only property acc-*ing* (the overt subject CGs considered here) and noun phrases have in common is their external distribution. I take this distributional property of CGs to be dependent specifically on their Case requirement (see also Reuland 1983), and instead of postulating a DP projection as the root of each CG, I take their Case requirement to be associated directly with a Case feature carried by the top projection of the CG.

What is crucial for the analysis developed in this chapter is that CGs with overt and null-subjects display common internal syntactic properties (for instance, they cannot be distinguished on the basis of tense, as will be seen in section 3.1), and this is instrumental in supporting a related analysis for both.

In order to proceed with the derivation of CGs, we need to consider a possible hypothesis regarding the feature specification of their heads, argued here to be at least T(ense).[17] Some relevant background is in order. Here are some properties of an account of certain CGs proposed by Reuland (1983):

A DP-analysis of CGs would not be necessarily incompatible with the main tenets of the analysis of CGs with null subjects and with overt subjects that I focus on in this book, provided a revised DP-analysis of overt-subject CGs can be compatible with the analysis of null-subject CGs as well (1a).

[17] T^0 will be taken to carry any tense or inflectional features that the CG may have, given the simplified approach adopted here, in which no separate AgrP is assumed below or above TP to account for the empirical facts dealt with in this book (see also Chomsky 1995a: chapter 4, 2000).

(18) a. There are 2 kinds of clauses: tensed or infinitival, with a distinctive marking for each realized on an inflectional head.
b. Tensedness and finiteness are separate parameters.[18]
c. Finiteness is realized by AGR – the agreement marker – which is syntactically present in the Infl of a finite clause and instrumental in the assignment of Case to the subject.
d. AGR is nominal (its feature matrix is simply [N]).
e. CGs are taken by Reuland to be tenseless finite clauses, thus [–TENSE, +AGR].[19]
f. The element *-ing* in CGs is a nominal agreement marker appearing in Infl that realizes the properties usually associated with AGR.

For Reuland, AGR assigns Case by transmission. This means that AGR itself does not inherently have the property that allows it to assign Case, but it can receive this property from another element and as a consequence is able to assign Case. In tensed clauses the presence of a [+tense] feature causes AGR to be assigned Case (given AGR's nominal behavior); this Case can then be transmitted to the subject.[20] Reuland then argues that clausal gerunds are tenseless, and that there is no [+tense] feature in them to assign Case to AGR.

However, there is one crucial problem specifically with this approach to tense in Reuland's analysis. Contrary to what Reuland argues, CGs are in fact [+tense], as clearly shown by their ability to license a temporal interpretation that is independent from the matrix clause (19) (as I initially proposed in Pires 2001c). To avoid this problem, I argue that the mechanism by which clausal gerunds depend on an outside functional head to license an overt subject is not determined by their being [–tense], which they are not.

(19) a. Mary worried *yesterday* about [Paul coming to dinner *tonight*].
b. Mary worried *yesterday* about [coming to dinner *tonight*].[21]

[18] The idea of tensedness and finiteness as separate parameters goes back to George & Kornfilt 1981, Rouveret 1979 and Zubizarreta 1980.

[19] Except for *while -ing* clauses, as argued by Reuland (1983). Notice that Reuland proposes that CGs are identical to inflected infinitives in Portuguese, given their [+AGR] specification (see Raposo 1987, Pires 2001a, c). However, see problems below for his treatment of CGs as [–tense].

[20] Reuland's (1983) structural relations were also defined primarily in terms of Government. I put aside the evaluation of this aspect of his proposal in the analysis developed in this book, given that the evaluation of many relevant issues regarding Government has been taken up in much research within the Minimalist Program.

[21] But see section 3.1, example (26) for a type of gerunds, TP-defective gerunds, that behaves differently from CGs in this respect, by showing a [–tense] specification, as proposed originally by Stowell (1982). TP-defective gerunds are analyzed in detail in chapter 2.

Given that a [±tense] distinction cannot account for the distinct properties of finite clauses and CGs (they are both [+tense]), it is necessary to account for the special properties and distribution of clausal gerunds in a different way, dispensing with the need to rely on a [tense] distinction to account for Case checking/valuation in these cases.[22] This is in line with recent Minimalist proposals regarding Case checking/valuation of overt DPs (Chomsky 1995a, 2000, 2001) which are primarily dependent on the ϕ-feature specification of the Case checking/valuing head. Therefore, it is not possible to adopt the [–tense] approach to CGs proposed by Reuland, given that CGs are in fact [+tense]. The main aspect of Reuland's analysis that will be directly retained in the analysis implemented here is the idea that the head of a CG (I^0 for Reuland, T^0 here) is instrumental in the assignment of Case to the CG's subject DP, as it is assumed in most approaches to structural Case assignment to non-ECM subjects (see section 4.1 for evidence that CGs are not ECM/Exceptional Case marking complements).

One final point is that given the analysis of CGs as projecting a [+tense] Tense Phrase, one might expect them to project a CP as well. However, two important pieces of evidence indicate that there is no CP projection available in CGs. First, they do not allow the occurrence of complementizers, as in (20b) and (21b), differently from *to*-infinitive clauses (20a) and from finite clauses (21a) (see Stowell 1982):

(20) a. Ann wants very much [for Mike to work at home].
b. Ann wants very much [(*for) Mike working at home].
(21) a. Mark prefers [that Mary travel with him].
b. Mark prefers [(*that) Mary traveling with him].

Second, CGs can never occur as indirect questions; that is, partial wh-movement, which is possible with infinitives (22b), is always excluded with CGs (23b, d). If the argument is right that CGs never project an independent CP, there is no intermediate CP position in (23b, d) in which a wh-feature can be checked/valued, explaining why partial wh-movement is impossible with CG complements.

[22] There is one other important empirical advantage of this account, in the treatment of control clauses with gerunds, since [tense] distinctions are also not helpful there, in the way they are used in the Null Case approach to control (see section 3.1 for detailed discussion of some relevant problems for this approach).

(22) a. Jeff didn't remember [to buy groceries].
b. Jeff didn't remember [what to buy *t*].

(23) a. Sue didn't remember [buying groceries].
b. * Sue didn't remember [what buying *t*].
c. Joan didn't remember [visiting her relatives two years ago].
d. * Joan didn't remember [when visiting her relatives *t*].

However, as seen before, long wh-movement applies freely out of CGs, either from subject or object position (24) (see also (8)):

(24) a. This project is what we'd favor [her working on *t*].
b. The only one who we'd favor [*t* writing this screenplay] is Sue.
c. The winter is when Sue prefers [staying at home *t*].
d. Where do you defend [Bill moving to *t*]?
e. What would you remember [buying *t*]?

If there were a need for an intermediate [Spec, CP] for successive cyclic wh-movement to take place, there would be no way to derive the long-distance wh-movement cases out of CGs in (8) and (24), given the analysis of CGs as bare TPs. Nevertheless, it is possible to argue that the moved wh-phrase in these cases raises directly from its base position inside the CG to the [Spec, CP] of the higher clause. That is consistent with the conception of phases in Chomsky 2000, 2001. If the root TP of CGs were a phase, the wh-element would need to move to the edge of that phase in order to be able to move later to [Spec, CP] of the higher clause. However, TPs are not considered to be phases (see Chomsky 2000, 2001 and references therein), thus a wh-phrase internal to a CG is accessible for movement without needing to move to the edge of the CG.[23] This can account for why long-distance wh-movement can apply freely in (8) and (24), since no intermediate CP projection is required for this movement to take place, whereas partial wh-movement out of CGs is blocked, because there is no intermediate CP position in the embedded clause in (23b-d) where a wh-feature can be checked/valued.[24]

[23] Although intermediate wh-movement to the edge of the first available (strong) phase (in this case, matrix *v*P) may be required in the course of long-distance wh-movement.

[24] One could consider a more flexible approach to syntactic structure, in which structure is built from the bottom up, but using only the material needed for convergence. Under this view, since no empirical evidence is found for the projection of a CP-level, the null position is also that CGs lack CP. However, under this view that structure should be projected as needed for convergence, it would be difficult to explain why (23b, d) are ungrammatical, given that an intermediate CP could in principle be projected because it is needed for convergence (in order

3 Null subjects in Clausal Gerunds

In this section I address the licensing of null subjects in the subject position of clausal gerunds. First, I show that null subject CGs split into constructions that only license obligatory control (OC) null subjects and constructions that license non-obligatory control (NOC) null subjects. I provide empirical evidence supporting an A-movement analysis of control null subjects in CGs. I develop that analysis in section 4, to account for both new and previously known facts about the complex distribution of CGs with null and overt subjects, by proposing a unified structure for both types of CGs.

3.1 Problems for a Null Case/Tense approach to control in gerunds

In different Minimalist accounts of control (e.g. Chomsky & Lasnik 1993, Martin 1996, 2001, Bošković 1997), PRO is an independent element in the lexicon and in the numeration, and is also argued that PRO can only be licensed by being assigned null Case in a [+tense] non-finite domain (Martin 1996, 2001; Bošković 1995, 1997). However, I present below empirical evidence from gerunds against a [+tense]/Null Case theory of control. Chomsky and Lasnik (1993) proposed that null Case licenses PRO, stipulating that both are absent in raising and ECM. Martin (1996, 2001) attempted to provide a more principled approach for this distinction, by arguing instead that control infinitives are [+ tense] (Stowell 1982), which licenses null Case PRO (25a), whereas raising (25b) and ECM infinitives (25c) are [−tense], so preclude null Case PRO.

(25) a. John decided [PRO to leave].
b. Ann seemed [*t* /*PRO to be interested in the new job].
c. Bill believed Mary [*t* to be a good friend]./
*Bill believed [PRO to be a good friend].

However, contrary to what is argued by Martin, I show that there is no one-to-one correspondence between null Case/PRO and a [+tense] interpretation. First, there is a class of gerunds, which I refer to as TP-defective gerunds, that is related to CGs but can be distinguished from them by several properties, including the fact that they only license a control null subject (PRO). Crucially, different from CGs, TP-defective gerunds only allow a [–tense] interpretation (26a-b) (see Stowell 1982, who first discusses the existence of a [–tense] type

to check/value the wh-feature of the partially moved wh-phrase). Crucially, the view that structure can be projected as needed for convergence would overgenerate different constructions.

of gerund). [25] This is shown by the fact that TP-defective gerunds cannot have a tense specification distinct from the matrix clause (26a-b), as shown by the ungrammatical use with these gerunds of time adverbials indicating a distinct time from the matrix clause (the examples are otherwise grammatical without the temporal adverbials), different for example from certain infinitives (27). However, TP-defective gerunds still license PRO, as I will further discuss in chapter 2, which argues against Martin's hypothesis that only [+tense] heads license PRO/null Case.

(26) a. * Bill tried *today* [talking to his boss *tomorrow*].
b. * Philip avoided *last night* [driving in the freeway *this morning*].

(27) Mark decided *today* [to leave to Rome *tomorrow*].

Second, in approaches to control such as the null Case approach it is required that the Spec, TP position that licenses null Case and PRO be specified so that only PRO is allowed in this position, and not overt subjects. However, the systematic alternation between overt and null subjects in CGs presents another serious problem for such approaches to control. More specifically, the CG that licenses an overt subject and its counterpart with a null subject are not distinguishable in terms of properties such as tense, as shown by the alternation in (28), in which both CGs carry a [+tense] interpretation.[26] The [+tense] interpretation in both cases is again shown by the independent temporal modification from the matrix clause. Here there is no direct correlation between the tense specification of the two CGs and the occurrence of either a null or an overt subject in either case. More importantly, aside from the occurrence of an overt DP in (28a), there is no other syntactic property that distinguishes this case from (28b).

(28) a. Sue favored (yesterday) [Anna moving to Chicago (today)].
b. Sue favored (last week) [moving to Chicago (today)].

Third, in an attempt to provide further empirical motivation for his approach to control, Martin (1996, 2001) assumes that event-denoting predicates

[25] In chapter 2 I analyze the properties that distinguish the TP-defective gerunds in (26a-b) from clausal gerunds (for instance, CGs are different regarding their tense specification, in that they are [+ tense]; see examples (19) and (28)).
[26] Furthermore, they cannot be distinguished regarding the possible projection of a CP (taken to be a distinguishing element between control and non-control infinitive clauses in early P&P/Principles & Parameters approaches), given that a CP is absent in CGs in general (see arguments in section 2).

contain an event variable that needs to be bound by [+tense] or some other operator - e.g. auxiliary *be/have* (Enç 1990). Given Martin's attempt to argue that control complements are [+tense], his prediction is that they have to allow an individuated event interpretation (as in (25a)), in which the *leaving* event can be identified as needing to occur once at a specific point in time. This is contrary to [−tense] clauses, which for Martin can only allow a stative or habitual interpretation in the absence of tense or some other operator (as he argues for [−tense] raising/ECM predicates such as (25b-c)).

However, both correlations fail regarding gerunds that allow control null subjects, which I will discuss in more detail in chapter 2. First, the [−tense] control gerunds of (26) are expected by Martin to block an individuated event interpretation, but they allow that interpretation without any problems, as shown in (29). Second, given Martin's prediction that control complements have to allow an individuated-event interpretation, it is unexpected to find a subset of gerunds that do not allow that interpretation. But contrary to what is predicted by Martin's analysis, control complements such as (30) can only allow a habitual, generic interpretation, when they are embedded under a present tense.[27]

(29) Sue tried [leaving at 10am].

(30) Mark hates/loves [talking to Mary (in the morning)].

These three sets of facts indicate that distinctive properties of control and non-control structures postulated in null Case/tense approaches to control theories face significant empirical difficulties in the domain of gerunds.

Similar problems can be pointed out for that analysis in the case of ECM and raising complements. Recall that ECM/raising complements are taken by Martin (1996, 2001) to allow only [−tense] and [−eventive]. Unfortunately, neither requirement of the theory is born out by certain empirical data, regarding either ECM or raising. Consider raising first. As Martin (1996:102)

[27] One might take the habitual, generic interpretation to be the case because of the use of the present tense in the matrix clause. However, this explanation cannot be adopted under Martin's analysis, because for him the feature specification of a control clause has to be sufficient to force the individuated event reading, and should not be dependent on the tense specification of the matrix clause, contrary to what (30) shows. Crucially, other examples with present tense matrix verbs that take control CGs as complements such as (i) do not block the individuated-event interpretation, even in the absence of overt event binding operators.

(i) a. I remember [dreaming of sirens (soon after midnight yesterday)].
b. I count on [leaving tomorrow at 10am].

himself points out, when *seem*/*appear* are in the past tense, they can license an event predicate in their infinitival complement with the presence of an independent temporal operator (that is, these complements are [+eventive] in cases such as (31)). However, this is incompatible with Martin's argument that raising complements need to be [−eventive] in order to block control PRO:

(31) a. Flávio seemed to pass the ball right then.(Martin 1996:102)
b. Kim appeared to kiss someone right in front of me.

Martin goes on to attempt to show that the complements in (31) are actually ambiguous between control and raising. However, he leaves unexplained why this possibility (which would lead to a [+eventive] interpretation of the infinitival complement), does not allow similar [+eventive] examples in which the matrix raising verb appears in the present tense:

(32) a. * Flávio seems to pass the ball right now. (Martin 1996: 101)
b. * Kim appears to kiss someone right now.

Martin claims that in these cases the "eventive predicates are not licensed with present tense in English, unless they receive a generic or habitual interpretation." (Martin 1996:103). However, there are numerous examples of individuated event predicates embedded under present tense, in actual cases of control, as shown in (33), and in all of them the sentences remain grammatical:[28]

(33) a. Franks wants to graduate (on April 30th).
b. John intends to call Sue (at 10am tomorrow).
c. It is important (for us) to leave in that plane to Rio (tomorrow before dawn).

Notice that in (33) the control infinitive embedded under the present tense has exactly the same irrealis interpretation (see Stowell 1982, Martin 1996) that is observed when the matrix verb appears in the past tense. In sum, this indicates that the present tense in the matrix clause does not block the possibility of an individuated event in the embedded clause.

[28] In chapter 2, section 3.1, I present similar problems for the tense/eventive approach involving control with gerunds. Hornstein (2003), also building on arguments against the null Case/tense approach made in Pires (2001a), presents other supporting evidence for problems of the null Case approach, using idiom interpretation and voice transparency as additional diagnostics for the lack of control in the complement of *seem/appear*.

Turning to ECM infinitives, Collins (2001:128-9), cites a list of verbs that have been shown by Abusch (2000, published as Abusch 2004) to take a future-oriented infinitival complement: verbs of the class of W-verbs (*want* type verbs, see Postal 1974:176): *expect, intend, mean, plan*, and verbs of the class of B-verbs (*believe* type verbs): *anticipate, forecast, predict,* and *project*. The latter do not take control, but they have both a [+eventive] and [+tense] interpretation, which is again incompatible with the predictions made by the null Case/Tense approaches.

Given these and other problems that I present in this book for the tense/eventive approach to control vs. rasing/ECM, the analysis I propose in section 4.1 will attempt to provide a different approach to the control phenomena regarding gerunds, aiming at explaining why CGs license either an overt or a null subject, and without appealing to a tense distinction within CGs, given that both types of clausal gerunds display a [+tense] interpretation.

3.2 Obligatory control in Clausal Gerunds

Concerning null-subject CGs such as (28b), an alternative account to the Null Case theory of control is to take obligatory control (OC) PRO to be a copy resulting from the movement of the controller DP (an account proposed for infinitives by Hornstein 1999, 2001, but also instantiated in independent approaches by O'Neil 1995 and by Manzini & Roussou 2000).[29] Considering the empirical problems for the application of the null Case theory to gerunds, as I showed above, I instead apply the movement approach to PRO in CGs, arguing that the null subject of certain types of CGs is the residue of A-movement. Crucially, relevant advantages of adopting this approach to null subjects in CGs include: (i) avoiding the problem resulting from the attempt to link a tense distinction to the alternation between PRO and overt subjects in CGs such as (28), given that the movement analysis postulated in this chapter hinges on ϕ-feature and Case-feature specification, and not simply on tense distinctions; (ii) paving the way for a related treatment of overt-subject and null-subject CGs (28), especially given that they do not display syntactic distinctions aside from the possible occurrence of the embedded overt DP in cases such as (28a).

[29] Alternative approaches to control have more recently been the object of significant debate in the literature. Some relevant references representing different perspectives include Culicover & Jackendoff 2001, Polinsky & Potsdam 2002, 2003, Jackendoff & Culicover 2003, Landau 2003, 2004, Hornstein 2003, Kapetangianni & Seely 2003, Monahan 2003, Barrie 2004, Boeckx and Hornstein 2004, Davies & Dubinsky 2004, San Martin 2004, Rodrigues 2004 and references therein). In chapter 3 I will review briefly a few proposals that bear on empirical phenomena partially related to the ones investigated in this book, in particular Terzi 1997, Mensching 2000, Kapetangianni & Seely 2003 and Landau 2004.

CGs in general license null subjects, which have been standardly analyzed as PRO. By applying the following seven diagnostics, I show below that three of the four instances of CGs considered in detail in this chapter (3a-d) consistently display properties of obligatory control (OC), as illustrated in (34) to (41): (i) in the complement position of a verb (examples (b) in (34) to (41)); (ii) in the complement of a subcategorized preposition (examples (c) below); (iii) in adjuncts introduced by a preposition (d). The examples (a) in (34) to (41) show similar instances of OC PRO with *to*-infinitives.[30] The various structural and interpretive restrictions applying in (34)-(41) can be effectively accounted for as resulting from the application of A-movement, as it will be formalized as part of the unified analysis of these CGs in section 4. For instance, in (34) to (36), PRO requires a local, c-commanding antecedent because these are restrictions imposed on the application of A-movement to the controller.

i. OC PRO must have an antecedent:

(34) a. * It was expected PRO to shave himself.
b. * It was never liked PRO staying up late.
c. * It was aimed at PRO hurting himself.
d. * It wasn't expected PRO to start the play without PRO turning the lights off.

ii. The antecedent of OC PRO must be local:

(35) a. * $John_j$ thinks that it was expected PRO_j to shave himself.
b. * $Paul_j$ thinks that Mary enjoyed/preferred PRO_j shaving himself.
c. * $Peter_j$ thinks that Mary counted on PRO_j shaving himself.
d. * $Peter_j$ thought that Mary would leave without PRO_j shaving himself.

iii. The antecedent must c-command PRO:

(36) a. * $John_j$'s campaign expects PRO_j to shave himself.
b. * $John_j$'s mother favored PRO_j shaving himself.
c. * $Peter_j$'s girlfriend worried about PRO_j hurting himself.
d. * $Bill_j$'s sister left without PRO_j having shaved himself.

[30] Tests (i-v) were originally presented in Lebeaux (1985). Infinitive examples (a) are from Hornstein (1999).

iv. OC PRO only permits a sloppy interpretation under ellipsis: In (37), the DP that is interpreted as part of ellipsis gap has to be interpreted as being coreferent with the closest antecedent c-commanding the site of the gap, and this is the same structural relation found between the antecedent and the gap in cases of A-movement, as shown in (38):

(37) a. John expects PRO to win and Bill does too (= Bill win).
b. John hates PRO losing and Bill does too. (= Bill lose/*= Bill hates John losing).
c. John worried about losing and Bill did too. (= Bill lose/*= Bill worried about John losing)
d. Peter left the party after kissing Mary and Bill did too. (= Bill kissed Mary)[31]

(38) Peter is likely to kiss Mary and Bill is too (= Bill is likely to kiss Mary).

v. OC PRO cannot have split antecedents: If OC PRO results from A-movement, the impossibility of split antecedents can be explained by the fact that two different DPs in the clause cannot have both moved from the same base position:[32]

(39) a. * $John_i$ proposed to $Mary_j$ PRO_{i+j} to wash themselves/each other.
b. * $Bill_i$ knew that $Mary_j$ hated PRO_{i+j} hurting themselves/each other.
c. * $Bill_i$ talked to $Mary_j$ about PRO_{i+j} hurting themselves/each other.
d. * $Peter_i$ talked to $Susan_j$ without PRO_{i+j} confusing themselves/each other.

vi. OC PRO only has a *de se* interpretation (cf. e.g. Higginbotham 1992: 86-90). For instance, given the specific scenario proposed by Higginbotham, (40b) is false in a situation in which the unfortunate is someone who lost his memory of getting a medal but then reads about the medal award, does not recognize himself as the medal recipient, but

[31] Notice that in the relevant interpretation the CG needs to be construed as part of the ellipsis material.
[32] Landau (2003) argues that split antecedents are actually possible with cases of obligatory control. Zwart (p.c. 2005) suggests that there is a similar effect with cases of obligatory control in Dutch. However, the informants I have interviewed do not consider this possible in the CG cases I investigate here.

is still pleased because that person (himself, who he does not recognize!) received the medal:[33]

(40) a. # The unfortunate expects PRO to get a medal.
b. # The unfortunate liked PRO getting a medal.
c. # The unfortunate worried about PRO getting a medal.[34]

vii. *Only NP* constructions (Fodor 1975). In (41), the binder of PRO must be the expression formed by *only + NP*. Take for instance (41c), which cannot be paraphrased with the interpretation in (41c''). It can only be interpreted as in (41c'), under which *only Columbus* could be proud that he himself discovered the West Indies (i.e. the expression *only Columbus* and not just *Columbus* is in fact the controller of PRO). This follows in a straightforward way from an A-movement approach if the whole phrase *only Columbus* is base-generated in the embedded clause

[33] The *de se* interpretation requires a propositional attitude construction amenable to an analysis as below, where (ib) is a predication that ascribes a reflexive property to the subject, *the unfortunate.* This forces *x* to correspond to a single referent in different contexts. However, it is only by means of the complete identity between the different occurrences of the variable *x* that the non *de se* interpretation is blocked in OC PRO cases. This complete identity can arguably be obtained from A-movement, rather than mere coreference (see also fn. 34).

(i) a. The unfortunate likes PRO playing games.
b. The unfortunate λx[*x* likes *x* play].

Adjuncts introduced by a preposition might not be taken to be amenable to tests for the *de se* interpretation. Consider, however, a case that may show the relevant distinction:

(ii) a. #The unfortunate$_k$ was pleased after [e_k getting a medal].
b. The unfortunate$_k$ was pleased after [he$_k$ got a medal].

In an interpretation in which there is a causal relation between the embedded clause (to get a medal) and the matrix clause (being pleased), the *de se* interpretation is in fact obligatory in (iia), in the same scenario considered in the main text.

[34] Jan-Wouter Zwart (p.c. 2005) brings up the idea that reference is not to a real world entity, but to a concept (see e.g. Jackendoff 1983, 2002). He then suggests that in the relevant case (the non *de se* reading resulting from the amnesia scenario in the text), the real world entity referred to by the antecedent and PRO would be the same, but the concept would not. Under this approach, PRO should arguably be restricted in its reference by not being able to refer to a concept different from its antecedent. Under the movement approach presented later (see also fn. 33) this restriction in the reference of PRO can arguably be accounted for in a straightforward way, if the movement of a DP does not allow its semantic interpretation to be modified. However, the issue is not completely clear here, given that one needs to make explicit the precise definition of the terms 'reference' and 'concept'.

and moves to the matrix clause. The same interpretive restriction applies to (41a-b, d):

(41) a. Only Mary remembered PRO to return the book to the library.
b. Only Churchill remembers PRO giving the BST speech. (Hornstein 1999:(4g)).
c. Only Columbus$_j$ was proud of PRO$_{j, *k}$ discovering the West Indies.
c'. Only Columbus was proud of himself discovering the West Indies.
c'' # Only Columbus$_j$ was proud that he$_{j, k}$ discovered the West Indies.
d. Only Churchill$_j$ was congratulated after PRO$_{j, *k}$ giving the BST speech.
d'. Only Churchill was congratulated after himself giving the BST speech.
d'' # Only Churchill$_j$ was congratulated after he$_{j, k}$ gave the BST speech.

These different tests show that CGs display a number of core properties that are better subsumed under an A-movement approach. In the analysis developed in section 4 I show how the control null subject of these CGs can be analyzed as the residue of movement of an overt DP to a higher domain, in order to check/value a Case feature. Crucially, I will show there how this analysis can be compatible with the alternative licensing of overt DPs in the subject position of CGs, a possibility that cannot be easily accounted for in other accounts to control such as a Null Case/tense approach, given problems such as the ones I discussed in section 3.1.

3.3 Non-Obligatory control in Clausal Gerunds

CGs in subject position are the only instances of CGs where non-obligatory control (NOC) PRO properties systematically hold, as illustrated in (42): NOC PRO does not require an antecedent (42a); if it has an antecedent, the antecedent does not need to be local (42b); the antecedent does not need to c-command NOC PRO (42c); a strict reading of the elided VP is possible in (42d); NOC PRO allows for split antecedents (42e); a non-*de se* interpretation is available for NOC PRO with respect to the matrix subject (42f); and finally, the binder of NOC PRO does not need to be interpreted as the *only + NP* expression available in the matrix sentence in (42g), since George Bush didn't win the Second World War:

(42) a. It was believed that shaving was important.
b. John thinks that it is believed that PRO shaving himself is important.
c. Clinton's campaign believes that PRO keeping his sex life under control is necessary for electoral success.
d. John thinks that PRO getting his resume in order is crucial and Bill does too. (= Bill thinks that John getting his resume in order is crucial, *strict reading*).
e. $John_j$ told $Mary_k$ that PRO_{j+k} washing themselves/each other would be fun.
f. The unfortunate believes that PRO getting a medal would be boring.
g. Only George Bush remembers that PRO winning the Second World War was crucial.

Hornstein (1999) argues that instances of NOC PRO are distinct from OC PRO in that they cannot be analyzed as the residue of A-movement. He assumes that they are instances of *pro*, which allows him to eliminate PRO as an element of the grammar. On this view, standard instances of PRO are then reanalyzed as either copies left behind by A-movement (OC PRO) or instances of *pro* (NOC PRO). If that is the case, what distinguishes *pro*-drop from non-*pro*-drop languages is not the absence of *pro* in the latter, but rather that, although *pro* is present universally across languages, its occurrence is much more widespread in standard *pro*-drop languages. I put aside here further consideration of gerunds with NOC subjects, and in the next section focus especially on CGs with control null subjects and with overt subjects. [35]

4 The syntax of Clausal Gerunds

In this section I propose an analysis of the syntax of CGs that attempts to account for five core syntactic properties of clausal gerunds, regarding especially their distribution and licensing of subjects. The current analysis explores an approach to Case checking/valuation that is related to agreement (ϕ-feature) checking/valuation in the Minimalist program (Chomsky 2000, 2001 and references therein). The current analysis attempts to explain, in a unified approach, the following empirical facts about the behavior of CGs:

[35] Kiguchi (2002) analyzes a subset of gerunds in subject position that actually display obligatory control properties. He also proposes an analysis of OC PRO in those constructions as the result of A-movement.

i. The subject of a CG may be an empty category (standardly analyzed as a PRO) or an overt DP:

(43) a. The manager preferred [PRO being considered for the position in the downtown office].
b. The manager preferred [Mary being considered for the position in the downtown office].

ii. CGs need to satisfy a Case requirement (as argued in detail in section 2):

(44) a. * It is expected [John reading the book]. (cf. (44d-e))
b. * John is preferred reading the book.
c. * John is impossible reading the book.
d. [John reading the book] was preferred.
e. I prefer [John reading the book].

iii. CGs do not behave as Exceptional Case Marking (ECM) complements such as (45a), which is indicated by the fact that they do not occur as complements of ECM verbs like *believe* (45b-c) nor allow raising of their subjects to the subject position of any passive structure (with ECM (45c) and non-ECM predicates (46b)) (for seminal discussion about ECM verbs see e.g. Chomsky 1981, 1986, Postal 1974 and references therein):

(45) a. Mary believes [Paul to be smart].
b. * Mary believes [John being smart].
c.. * John is believed [being smart].

(46) a. Mary prefers [Paul swimming in the morning].
b. * Paul is preferred [swimming in the morning].

iv. CGs can never occur as complements of subject raising verbs (47a-c), although they can occur as a single constituent in the subject position of raising predicates (47d):

(47) a. * There seems [being a man in the room].
b. * John appears [liking Mary].
c. * It appears [John liking Mary].
d. [(John) talking to Mary] seems impossible.

v. The subject position of a CG must be filled in the course of derivation, either by a lexical DP (46a) that may further move, as I will argue happens in (48), or by a pure expletive (49). Within recent Minimalist approaches (see Chomsky 2000, 2001 and references therein) the requirement for a subject in the clause has been instantiated as the need to have an EPP feature checked (or valued) in [Spec, TP]: [36]

(48) Paul prefers [~~Paul~~ swimming in the morning].

(49) Bill enjoys [there being many people at the party.]

4.1 The derivation of Clausal Gerunds

In order to explain the properties of CGs above, my analysis combines three hypotheses regarding the properties of CGs:

(50) a. The inflectional head corresponding to *–ing* in CGs carries a feature specification that forces the occurrence of CGs in positions accessible to Case valuation (section 2);
b. in the derivation of a CG, the Case feature of its external argument DP can be valued within the CG itself, in examples such as (51a); or
c. the external argument DP can move out of the CG before the CG can value the Case feature of this DP. This yields a null-subject CG (a CG with a control PRO subject, in standard terms), as in (51b).

(51) a. Sue prefers [John/him swimming].
b. John prefers [swimming].

One possibility is that the hypotheses (50b) and (50c) should be treated as resulting from two completely different structures, but one would have to find empirical motivation showing that the syntactic structure of the CGs in (51a) and (51b) is clearly distinct. However, there are no syntactic feature distinctions between the CGs with an overt vs. a null subject (as in (51)); see for instance arguments in section 2 for lack of tense distinctions between these two CGs). The lack of feature distinctions between both types of CGs raises problems for different P&P approaches to overt and null subjects, for two major reasons. First, the syntactic properties that license an overt subject block the occurrence of PRO (consider e.g. Case Theory in the Government &

[36] See also (9) and fn. 9.

Binding framework; Chomsky 1986 and references therein). Conversely, the syntactic conditions that determine where PRO is possible block the occurrence of an overt subject. So, most P&P approaches induce complementary distribution of PRO and overt subjects across different domains, but CGs indicate that across-the-board complementarity is factually incorrect. The analysis below attempts to reconcile the treatment of these two problems regarding CGs, together with the treatment of the other complex facts about the distribution of CGs presented in section 4 above.

In order to account for (50a) it is proposed here that not only the external argument DP of a CG, but also its root node (a Tense head in the analysis below), carry an uninterpretable Case feature that needs to be valued.[37] Under this approach, the head T of the CG itself will be a goal for Case valuation.[38]

[37] Notice that an alternative treatment of CGs in which they would have a DP as their root projection and the head D itself would need to check/value a Case feature is not necessarily incompatible with the derivational approach adopted here, provided the same DP-treatment can be extended to both types of CGs in (51), as supported by their empirical similarity. Different complications arise for a DP-alternative, involving for instance why the Case assigned in acc-*ing* cannot be Genitive, if there is a DP-projection as postulated in the DP analysis. I put aside in this book this and other problems I discussed in section 2.

[38] The approach to overt syntax adopted here explores certain core aspects of the architecture proposed in Chomsky 2000, 2001 regarding phrase structure, Case, ϕ-features and A-movement to subject position. The basic syntactic building operation is *Merge*:

(i) *Merge* takes the syntactic objects (α , β) and forms K (α , β) from them.

In this sense, Merge is a concatenating operation that builds binary trees in the syntax, adding one new lexical item at a time (except for initial merge, when *two* lexical items need to be inserted in the derivation for Merge to apply).

Case and ϕ-feature valuation are taken to apply as a consequence of the operation *Agree*:

(ii) *Agree* "establishes a relation (agreement, Case checking) between an LI [lexical item] α and a Feature F in a search space (its [the LI's] domain)" (Chomsky 2000: 102).

The LI α is referred to as the Probe, and the LI that carries the Feature F (or the Feature F itself, which is not entirely clear) is referred to as the Goal. In addition, as a requirement for *Agree* to apply, two other conditions need to be satisfied:

(iii) *Match:* Probe and Goal need to have a subset of their features in common (ϕ-features, in the cases that are relevant here).

(iv) The Activation Condition:
Both the Probe and the Goal need to be active, that is, they carry an uninterpretable feature (which needs to be valued in order to be eliminated by LF).

In a standard case of nominative Case assignment such as (v), once T is merged in (va) it becomes the Probe. T is active at this point by carrying uninterpretable ϕ-features (and also an

As I explain in detail below, if the DP subject can move out of the CG before the Case feature of the T head of the CG is valued (and the latter must happen by the end of the derivation), a standard OC PRO construction is generated, yielding (51b). The Case requirement on CGs is formalized in (52i). Furthermore, I propose that a condition which blocks feature valuation applies during Agree (52ii), preventing valuation from happening for as long as both Probe and Goal carry an uninterpretable instance of the same feature:

(52) i. The Tense (T^0) head of a CG carries an uninterpretable Case feature that needs to be valued.
ii. A probe cannot value an uninterpretable/unvalued feature of its goal while the probe itself has an uninterpretable/unvalued feature of the same kind.

Property (52i) is a direct formalization of (50a), discussed in detail in section 2. Property (52ii) is instantiated in this analysis by the fact that the T of a CG can value the Case feature of a DP only after its own (unvalued) Case feature has been valued by an appropriate probe (e.g. a matrix *v* or T).[39] In what follows it is shown how the complex distribution of CGs (broadly summarized in section 4 above) follows from the interaction between these two properties and from the general architecture of feature checking/valuation in recent approaches to the Minimalist Program (e.g. Chomsky 2000, 2001).[40]

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uninterpretable EPP-feature). The DP *Frank* is targeted as the Goal for T (carrying interpretable ϕ-features and an uninterpretable nominative Case feature). They Match in ϕ-features and *Agree* can apply, allowing valuation of the ϕ-features of T and the Case feature of the DP *Frank*. In addition, the EPP-feature on T triggers overt movement of the DP Frank to Spec TP, yielding (vb):

(v) a. [$_{TP}$ T [$_{vP}$ Frank annoyed the leviathan].
b. [$_{TP}$ Frank T [$_{vP}$ ~~Frank~~ annoyed the leviathan].

Both Match and Agree are established under c-command of the Goal by its Probe, and intervention effects are also relevant (in the standard cases, no other element that could match in features with the Probe can c-command the Goal and be c-commanded by the Probe).

[39] This is reminiscent of the mechanism of N-feature checking proposed in Zwart 1996:262. It also relates to the mechanism of Case transmission/percolation proposed for Basque in Ortiz de Urbina 1989.

[40] One might raise the question whether there is independent evidence for the properties in (52). First, to my knowledge, there is no analysis of CGs that has been able to dispense entirely with the need to instantiate these two properties by means of some special mechanism (for instance, Reuland's insightful analysis instantiates both properties by other mechanisms, but proposes a significantly complex architecture especially to deal with certain CGs, with additional empirical complications such as the ones regarding the treatment of tense, as I discussed in section 2). I discussed an alternative to (52i) in section 2, by reviewing briefly the

Given this architecture, the head of a CG (its Tense head) is taken to display three other properties that are equivalent to the ones that apply for instance to feature checking/valuation in *to*-infinitives (see Chomsky 2000, 2001):

(53) i It has an EPP feature that needs to be checked.[41]
ii. It enters the numeration as ϕ-defective.
iii. When the Tense (T) head of the CG (a probe) Matches/Agrees with the embedded subject DP (a goal), the DP merges in [Spec, TP] of the CG to check EPP and checks/values the ϕ-features of T.

In the approach to feature valuation adopted here (which follows in most respects Chomsky 2001), the functional heads *v* and T in finite and non-finite clauses carry uninterpretable/unvalued ϕ-features. Both *v* and T can probe the derivation for matching, active goals that can check/value the uninterpretable/unvalued ϕ-features of *v* and T. A DP has interpretable ϕ-features and enters the derivation with an uninterpretable/unvalued Case feature that makes it active to induce Agree with a probe. The Case feature of the DP is valued after that DP enters into Match/Agree with a functional head that is ϕ-complete. Both the head (probe) and the matching DP (goal) have to be active in order to enter into a Match/Agree relation. Only uninterpretable/unvalued features (e.g. uninterpretable, unvalued ϕ-features and Case) activate a probe and a goal, thus inducing Match/Agree. Once the functional head T^0 (the probe) of a finite clause and the subject DP (the goal) enter into Match/Agree, the uninterpretable Case feature of the goal DP and the uninterpretable ϕ-

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alternative of adding a DP projection above TP, although I pointed out different problems in treating CGs as DPs. Given those complications, I won't consider this alternative in the derivations that follow. Pesetsky & Torrego (2001) propose a widespread connection between Case and tense features, by suggesting that nominative Case is in fact an uninterpretable T feature on D. This connection between Case and an uninterpretable T feature may bear on the approach I adopt, although I don't explore the possible connections here. Regarding (52ii), it may not be restricted to CGs and may have some cross-linguistic correlates. Section 7 will discuss examples of non-finite constructions in several different languages which may instantiate a similar mechanism to the one explored here, by which a certain inflectional head can value the Case of a DP only if this inflectional head itself appears in the domain of a Case-valuing probe.

The advantage of the approach I propose in section 4 is that, by appealing to these two properties of CGs in interaction with a general architecture of feature valuation, this approach may effectively account for a host of facts in the complex distribution of CGs that so far have not been entirely analyzed.

[41] Chomsky (1995a:232) proposes that the EPP corresponds to a strong D-feature of I. In Chomsky (2001:7) EPP is treated as an uninterpretable selectional feature of a syntactic object (of T and *v*, in the alternative he explores in detail). I do not focus here on evaluating different alternatives to deal with EPP requirements; see also in this respect fn. 9).

features of T are valued.[42] Overt movement to [Spec, TP] is necessary to satisfy an EPP-requirement. In the case of clausal gerunds, T^0 is ϕ-defective, but it can still attract its subject DP in order to satisfy its EPP requirement, as in instances of T_{def} (ϕ-defective T, see Chomsky 2000, 2001) in infinitives.[43]

Consider how this architecture can account for the core properties of clausal gerunds in the derivations that follow. I represent the head (T, as referred above) of the embedded CG as AGR, to make its status clear in the different derivations.

First, consider in detail the core case of a null-subject CG as in (54). It is proposed here that the null subject in such cases results from A-movement of the embedded CG subject to the matrix clause, as supported by the different A-movement diagnostics presented in detail in section 3.2. Crucially, since I analyze instances of OC PRO in CGs (51b) as the result of A-movement, I assume that θ-roles can be assigned through movement and not only by first merge (cf. Bošković 1994; Lasnik 1995; Bošković and Takahashi 1998; Hornstein 1999, 2001). The idea is that θ-roles can also be assigned in the course of the derivation, and are satisfied not in a configuration, but in a set of configurations (i.e. transformationally).

In (54) the head AGR of the CG starts as ϕ-defective and with an uninterpretable Case feature C_{AGR}. Recall that the uninterpretable Case feature on AGR corresponds to the Case requirement of the different CGs analyzed here, as stated in (52i), and is responsible for their restriction to Case positions (section 2).[44] As *John* enters into Match/Agree with AGR in (54b), *John* values

[42] This complexity arises in a system where ϕ-features are the attractors (Chomsky 2000) or the lexical item that makes the probe active for Match/Agree (Chomsky 2001). In a symmetric approach to Case checking such as in Chomsky 1995a, where Case features are checked by Case features, a functional head carrying a Case feature checks the corresponding Case feature of a DP. In such a system, the T head of clausal gerunds would be able to attract the subject DP by virtue of the EPP, but would not be able to check the Case on the DP because its own Case feature had not been checked yet in the derivation (see derivation of (54) below). However, the symmetric approach is not considered here: Chomsky (2000:23) for instance discusses examples of super-raising that present problems for this approach to Case.

[43] The fact that T is ϕ-defective does not prevent Match with the full ϕ-set of DP from applying. Although Chomsky (2001:4) considers identity to be the optimal candidate for Match, he argues that Match is not strictly speaking identity, but non-distinctness. For Match to occur, probe and goal must share the same features, independent of value. In this case, the ϕ-features of T on a clausal gerund are simply unvalued when DP-movement takes place to satisfy the EPP. That is, they are non-distinct from the ones on the DP, as in other instances of T_{def}, thus Match between the ϕ-defective T and the DP can apply.

[44] Notice that under the approach adopted here ϕ-features and Case features exist independently, even though, as proposed by Chomsky 2000, 2001, Case feature valuation is dependent on Match/Agree of ϕ-features.

the ϕ-set of AGR by Agree and moves to Spec TP1 for EPP satisfaction.[45] Crucially, valuation of the ϕ-set of AGR by the DP eliminates its defectiveness.[46] However, since AGR still has an uninterpretable Case feature at the point in (54b), Case valuation of the embedded subject DP cannot yet take place. This is the instantiation of (52ii), by which a probe that carries an uninterpretable Case feature cannot value the Case of its goal until its own Case feature has been valued.

As the matrix V is inserted in the derivation, the embedded CG is assigned the propositional internal θ-role of the matrix verb (54c). When matrix *v* enters the derivation, it attracts the embedded DP *John* and assigns an experiencer θ-role to it.[47] The matrix *v* then Matches/Agrees in ϕ-features with the embedded AGR in CG and values the uninterpretable Case feature (C_{AGR}) that AGR still

[45] However, given the phase approach of Chomsky 2001, I assume that the uninterpretable ϕ-features of AGR are not deleted immediately after being valued. I take this not to be inconsistent with the idea that uninterpretable features must be deleted. This will be more especially relevant in the derivation of (55), in which the uninterpretable ϕ-features and Case feature of AGR as well as the Case feature of the CG subject will be deleted only at the end of the first available strong phase (the matrix *v*P) . I assume this is compatible with the phase approach in Chomsky 2001: valued uninterpretable features do not need to be deleted before the end of their strong phase. Alternatively, uninterpretable features that have been valued remain active until the phase is no longer available for further computation (however, cf. Epstein & Seely 2002 for possible problems regarding the approach to feature deletion at the phase-level in Chomsky's 2000, 2001 approach.)

[46] A question arises why this elimination of the defectiveness of ϕ-set of a CG does not occur in other instances of Match/Agree, such as with infinitives. Crucially, infinitive T in English does not allow overt subjects unless their Case is valued by a higher inflectional head (e.g. under ECM). This follows from the fact that the infinitives are consistently ϕ-defective. Contrary to this, it is plausible that AGR (the T^0 of a CG) gets its ϕ-set to become non-defective after Match/Agree with the DP in its Spec because of the nominal character of AGR, formalized here by the fact that it also carries an uninterpretable Case feature that needs to be checked/valued (52i) (see discussion regarding the latter in section 2).

An alternative is to take the ϕ-set of a CG T head to be lexically specified as always ϕ-complete, in which case the only reason why it does not always value the Case of the embedded CG subject would hinge entirely on the fact that the CG needs to have its own uninterpretable Case feature valued, as shown in the derivation of (54). The precise distinction in ϕ-feature specification is hard to pin down here, given that CGs share properties with both infinitives (the possibility of null subjects) and with finite clauses (the possibility of overt subjects) at the same time, and for this reason cannot be identical to either one regarding Case valuation.

[47] There are two possible ways to motivate the overt movement of the embedded DP *John* to Spec, vP of the matrix clause. One possibility is to take θ-role assignment to require merge in the thematic position, ruling out thematic assignment by Match/Agree, which would argue against the view that θ-roles are features similar to Case or ϕ-features. The other possibility is that *v*P has an EPP requirement that can be satisfied by an external argument merging in Spec, *v*P.

carries (54c). Finally, *John* moves from matrix [Spec, *v*P] to [Spec, TP2] to check/value its own uninterpretable Case feature and the EPP and ϕ-features on T2 (54d). [48]

(54) John prefers swimming. = (51b)

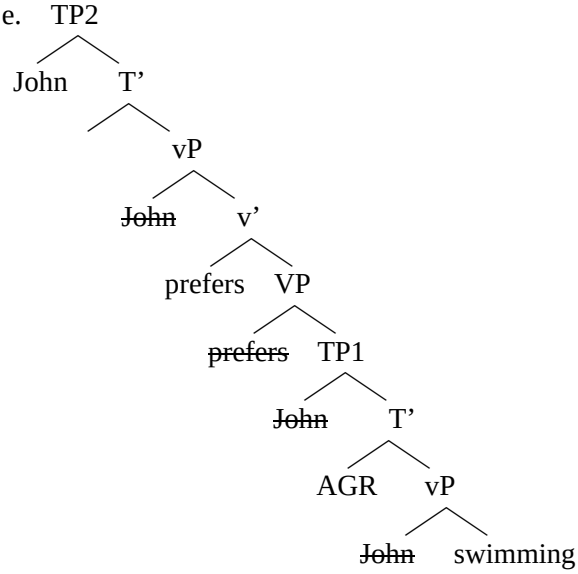
a. $[_{T'}$ AGR $[_{vP}$ John swimming]]
[ϕ /$Case_{AGR}$ θ/Case]]

b. $[_{TP1}$ *John* $[_{T'}$ AGR $[_{vP}$ ~~John~~ swimming]]]
[~~EPP~~/ ~~ϕ~~ /$Case_{AGR}$ [θ/Case]]]

c. $[_{vP}$ *John* $[_{v'}$ *prefers* $[_{TP1}$ ~~John~~ $[_{T'}$ AGR $[_{vP}$ ~~John~~ swimming]...
[2θ/Case [~~Case~~$_{AGR}$ [~~EPP~~ /~~ϕ~~ [θ]...

d. $[_{TP2}$ *John* $[_{T'}$ $[_{vP}$ ~~John~~ $[_{v'}$ prefers $[_{TP1}$ $[_{T'}$ AGR $[_{vP}$ swimming]…
[~~ϕ~~/~~Case~~/~~EPP~~ [2θ [~~Case~~$_{AGR}$ [~~EPP~~ /~~ϕ~~ [ ]...

e.



[48] This analysis represents movement by generating additional copies which are deleted in the derivation (see Chomsky 1995a, Nunes 2004 for approaches along these lines), but no significant aspect of the analysis hinges on this approach to movement; an approach in terms of Remerge is in principle also compatible with the analysis adopted here (see e.g. Epstein et al. 1998 for a seminal proposal for Remerge).

The analysis outlined above gives us the means to explain the grammaticality and ungrammaticality of a host of other cases involving the distribution of CGs. Before we proceed to them, there are a couple of important considerations I would like to discuss regarding the steps in the derivation in (54). First, when the matrix *v* is inserted in the derivation (54c), it carries an external θ-role and uninterpretable ϕ-features which allow it to enter into the Match/Agree operation that will value the case of the embedded CG.[49] The sequence in which θ-role assignment and Case valuation take place is entirely restricted by the fact that this is the only possible convergent derivation of (54) (this will be shown in further detail in the discussion of how an ungrammatical derivation of the same example crashes, as in (54') below). Crucially, the ordering of steps in the derivation (54) is also fully compatible with cyclicity, as defined in Chomsky (1995a:233),[50] which is satisfied at all points. More specifically, at the point in which matrix *v* is inserted in the derivation (54c), *v* assigns a thematic role to the embedded DP, which moves to the matrix *v*P external argument position. Before the derivation leaves the matrix-*v*P cycle, the matrix *v* values its uninterpretable ϕ-features and the Case feature of the embedded CG as well. Furthermore, the embedded DP and the embedded AGR are equidistant from the probing matrix *v*, if one adopts the idea that they are in the same minimal domain in the embedded clause (the domain of the embedded T itself, see Chomsky 1995), being both accessible to the operations that take place at the point matrix *v* is inserted in (54c).[51] Also, AGR, the embedded DP and the matrix *v* are all available within the same strong phase represented by the matrix *v*P.

Second, the existence of multiple features that need to be checked/ valued in the derivation of (54) raises questions as to whether the derivation could proceed otherwise. However, Minimalist approaches determine that different

[49] Presumably the matrix *v* has an internal θ-role as well, which is assigned to the embedded CG, although this is not shown in the derivation.

[50] As Chomsky (1995a:233) proposes "[A strong feature] induces cyclicity: [it] cannot be "passed" by α that would satisfy it, and later checked by β; that would permit Relativized Minimality violations (wh-island, super-raising)." (putting aside complications that should not come into play here regarding overt and covert syntax, a strong feature corresponds in the present analysis to an uninterpretable, unvalued feature).

Specifically at the point in (54c), the Case feature of the embedded subject *John* has to "wait" to be valued only after it moves to the matrix clause because until the point *John* raises to the matrix *v*P there is no more local probe that can value its Case in the derivation (given that the CG head T cannot value Case while it still carries an uninterpretable Case feature of its own — see also (54c') for why an alternative derivation with different order of steps is ungrammatical).

[51] However, see in fn. 58 an alternative approach to the issue of locality and equidistance in such cases.

restrictions block the possibility of alternative derivations for the same numeration, and such restrictions also come into play in the derivation of different CGs, including (54). One important restriction that blocks alternative derivations is the need for convergence at the interfaces. Consider one alternative derivation of (54) (also compatible with cyclicity) that is in fact blocked because it would yield a syntactic object whose features cannot all be interpreted at the interface. If the matrix *v* (*prefer + v)* in (54c) valued the Case of AGR before *John* moved out of [Spec, TP1], this would also allow AGR to value the Case feature of *John* in [Spec, TP1] (given that AGR would now no longer have an uninterpretable Case feature (see (52ii)), as illustrated in (54c') below. After having its Case valued *John* would effectively be prevented from raising to the matrix clause. However, the matrix subject θ-role and the EPP feature in [Spec, TP2] would end up not being satisfied in (54d'), because *John* would now be inactive for further Match/Agree relations, and would no longer be able to move out of the embedded clause. Given the absence of other DPs in the numeration of (54) that could satisfy the EPP requirement in [Spec, TP2], this yields a crash in the derivation ending in (54d') below, further motivating (54) as the only possible derivation of the null subject CG case in (51b).[52]

In sum, despite the impression that the derivation up to the insertion of the matrix *v* (54c) could allow an alternative path starting in (54c'), this path in fact leads to a non-convergent derivation. The question of optionality of derivations will come up again in connection with the derivation of the overt subject case in (51a), as analyzed in (55). I will show that there is no optionality applying there either. This is consistent with the minimalist hypothesis that optionality is restricted in the grammar, because apparently alternative derivations are in fact not alternative, due to their distinct numerations (as shown by the contrast between (54) and (55)), or due to the fact that only one of them is convergent (as illustrated with (54) vs. (54')). [53, 54]

[52] Notice that there is no problem for different cases with a numeration containing an additional DP, such as *Sue* in (55) (*Sue prefers John swimming*), corresponding to a CG with an overt subject, which I explain in detail later.

[53] In addition, a derivation along the lines of (54'), but in which an expletive is merged in the matrix [Spec, TP] (i) would also crash, possibly because expletive *there* cannot be inserted in a thematic position, or it is blocked from taking the CG as an associate, which is explained in the current analysis because the CG is not a DP, and does not carry the properties restricted to indefinite DPs required in existential-*there* structures. Crucially, the matrix T cannot directly probe the indefinite DP *a man* as its goal, because this would prevent the CG itself from having its own Case feature valued, yielding a non-convergent derivation.

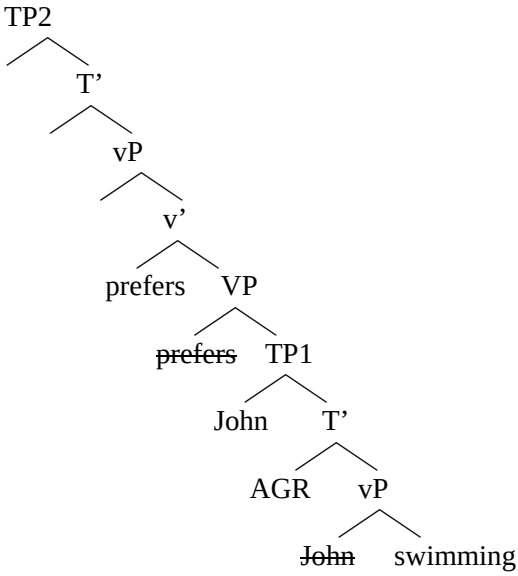
(i) * There prefers [a man swimming]

(54') *prefers [John swimming]

c'. [$_{vP}$ [$_{v'}$ *prefers* [$_{TP1}$ John [$_{T'}$ AGR [$_{vP}$ ~~John~~ swimming]]..
[~~Case~~$_{AGR}$ [~~Case~~/~~EPP~~/~~ϕ~~ [θ]]..

d'. [$_{TP2}$ [$_{T'}$ [$_{vP}$ [$_{v'}$ prefers [$_{TP1}$ John [$_{T'}$ AGR [$_{vP}$ ~~John~~ swimming]]..
[**ϕ?/EPP?θ?** [[~~Case~~$_{AGR}$ [~~Case~~/~~EPP~~/~~ϕ~~ [θ]]..

e'.



The restriction on *there*-expletives with CGs as in (i) lends support to the view that *there* expletives are only allowed in a subset of structural Case checking/valuation configurations and are not allowed in all contexts in which EPP and structural Case checking/valuation come into play. This is consistent with the fact that besides (i), neither case in (ii) is possible, despite the fact that the expletive *there* can satisfy any EPP requirement whereas the associate-DP (*a man, two kids*) could be generated in its base thematic position and have its Case valued by Match/Agree (Chomsky 2000, 2001, Lasnik 1999, Lasnik 2001a,b and references therein; see Chomsky 1995a for earlier analyses involving a *there*-associate relation):

(ii) a. * [TP There [*v*P a man danced]].
b. * [TP I [*v*P expected [TP there to [*v*P two kids enjoy the movie]]]].

[54] (54') and (i) in fn. 53 may support the view that there is an additional restriction on θ-role assignment, especially in cases of multiple θ-role assignment (Bošković 1994; Lasnik 1995; Bošković and Takahashi 1998; Hornstein 1999, 2001). In both cases it is not enough for the matrix clause to have an additional thematic role available to be assigned to the embedded argument DP, since that argument needs to move overtly to the matrix clause, in a way similar to what one observes with the EPP-requirement. See an additional application of such an alternative in fn. 47.

Consider now the core case involving an overt subject within the CG (55). The derivation of (55) initially proceeds in the same way as (54), but the similarity stops after the step in (55b). When the matrix *v*P is generated in (55c), the derivation proceeds differently from (54), clearly because at this point (step c), *Sue* is still available in the numeration, whereas the numeration of (54) did not have this additional DP. Crucially, the existence of two different numerations rules out any consideration of (54) and (55) as competing derivations, given that they do not share the same numeration.[55] Besides this difference, there is in fact only one path that can lead to convergence in the derivation of (55), as I will show in the next steps. Matrix *v* matches/agrees with AGR (the Tense head of the CG), valuing the Case feature of AGR in (55c). At this point, the Case feature of the embedded DP *John* can also be checked/ valued, and this is done by AGR of the CG, with which the DP *John* has already established an Agree relation. Case valuation of the DP John is possible only at this point because this is when the restriction in (52ii) is finally eliminated (that is, the Case of the CG itself has been valued).

Notice furthermore that there is no violation of cyclicity regarding Case valuation: it is only when matrix *v* is merged that both the Case feature of the CG and the Case feature of the embedded subject John can be valued, and both instances of valuation take place in this order at this point in (55c), as determined by the features at play here[56] (compare this later with (56), in which a different path for Case valuation here would yield a non-convergent derivation). Finally, in (55d) the matrix subject *Sue* merges in [Spec, *v*P] where it is assigned the matrix external θ-role, and raises to [Spec, TP2] in order to check its Case feature and the EPP and ϕ-features of matrix T.

[55] This is similar to the rationale adopted in the derivation of existential clauses such as (i), which have been the focus of significant attention in the P&P literature. Both cases have a common derivation only up to the point at which the embedded T is inserted. Given the existence of *there* in the numeration of (ia), it does not compete with (ib), which takes place independently (see e.g. Chomsky 1995a, 2000, 2001). This is like the contrast between (54) and (55): there is no issue of optionality in the steps of each derivation in either pair of cases.

(i) a. There seems [~~there~~ to be a man outside].
b. A man seems [~~a man~~ to be ~~a man~~ outside].

[56] see fn. 45 regarding deletion of valued features (in this case ϕ-features) only at the (strong) phase-level. See fn. 58 regarding why no locality violations arise in the choice of either the embedded subject DP or the embedded T head as accessible goals for Match/Agree.

(55) Sue prefers [John swimming]. = (51a).

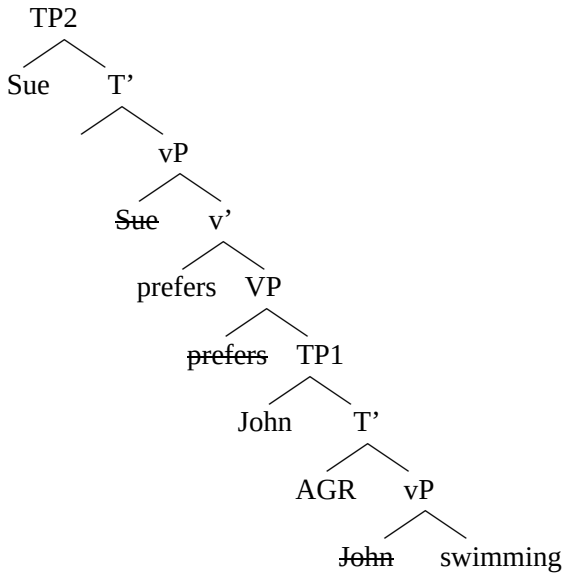
a. [$_{T'}$ AGR [$_{vP}$ John swimming]]
[Case$_{AGR}$ [θ/Case]]

b. [$_{TP1}$ *John* [$_{T'}$ AGR [$_{vP}$ ~~John~~ swimming]]]
[Case/~~EPP~~/~~ϕ~~ [θ/Case]]]

c. [$_{v'}$ *prefers* [$_{TP1}$ John [$_{T'}$ AGR [$_{vP}$ ~~John~~ swimming]...
[~~Case~~$_{AGR}$ [~~Case~~/~~EPP~~/~~ϕ~~ [θ]...

d. [$_{TP2}$ *Sue* [$_{vP}$ ~~*Sue*~~[$_{v'}$ prefers [$_{TP1}$ John [$_{T'}$ AGR [$_{vP}$ ~~John~~ swimming]…
[~~Case~~/~~EPP~~/~~ϕ~~ θ [~~Case~~$_{AGR}$ [~~Case~~/~~EPP~~/~~ϕ~~ [θ]...

e.



Again, the need for the derivation to converge imposes a restriction on the possibility of movement of the embedded subject, as I show through this section. What determines how the Case feature of the embedded subject DP is going to be valued are the steps that can yield a convergent derivation, as shown in the contrast between (54) and (55). In different cases there is no issue of optionality at play, because in examples such as (54) and (55) there are in fact different numerations under consideration. In one case, the embedded subject moves out in case the host CG has not yet checked/valued its own features (yielding a CG with a null subject and OC properties, as in (54)). In the other case, after the CG has already valued its own Case feature, the embedded subject (given that it has not moved out of the embedded clause) can

only check/value its features internally to the CG, and freezes in its embedded position, yielding a CG with a lexical subject, as in (55). But for the latter to yield a convergent derivation, an additional argument DP needs to be available in the numeration, as happens in (55), in which the additional DP *Sue* is in the numeration. In sum, there is no issue of optionality involving a comparison of the derivations of (54) and (55) because the two cases correspond to different numerations.

Furthermore, there is no issue of optionality *within* the individual derivations of (54) and (55), because each one is the only path that will ultimately converge in each case. The latter has been shown in the comparison between (54) and (54'), but the question also arises why (55) does not allow the alternative derivation shown in (56), within which the embedded *John* subject would value its Case by ECM, a possibility that does not hold in general for CGs, as I showed in section 4, property (iii). Here is an analysis showing why ECM is unavailable with CGs, ruling out a derivation of (51a) as ECM (56):

(56) Sue prefers John-*ECM swimming.
   a. [$_{TP}$ Sue [$_{vP}$ ~~Sue~~ [$_{vP}$ John [$_{v'}$ prefers [$_{TP}$ ~~John~~ [$_{T'}$ AGR [$_{vP}$ ~~John~~ swimming]…
   b. [~~Case~~/~~EPP~~ [θ [~~Case~~ [[~~EPP~~ ***Case**$_{AGR}$ [θ ...

At the point at which matrix *v* enters the derivation, one possibility would be for the subject *John* of the CG to enter into Match/Agree directly with matrix *v* to value its own Case (different from (55) and as in ECM constructions), but this derivation is ruled out straightforwardly because the Case feature on AGR (the head of the CG) would end up unvalued, yielding a crash at the interfaces. [57]

Consider now a derivation in which the whole CG moves to the subject position of the matrix clause, when it is generated as the complement of a verb

[57] This would be the analysis of this case under the Probe-goal approach proposed by Chomsky (2000, 2001), and also applicable to ECM cases, with the only difference that in the derivation represented in (56) *John* raises overtly to the accusative Case position in the matrix *v*P (see, in this respect, Lasnik 1999), a possibility that is not crucial to determine the unavailability of an ECM analysis for (56). Both the analysis with overt movement of the DP *John* to matrix Spec, *v*P and the one without such movement hold several aspects in common with ECM analyses adopted in the Government & Binding framework (Chomsky 1981, 1986 and references therein): in all three possible analyses the embedded subject DP John receives an (external) thematic role in the embedded clause, moves at least up to the embedded Spec, TP (IP in GB), and has its Case assigned (in GB) or checked/valued (in Minimalism) by a matrix head that assigns or checks/values accusative Case. Under any of these three analyses the derivation of (56) would be ruled out, given that the head (AGR) of the embedded CG would end up not satisfying its Case requirement.

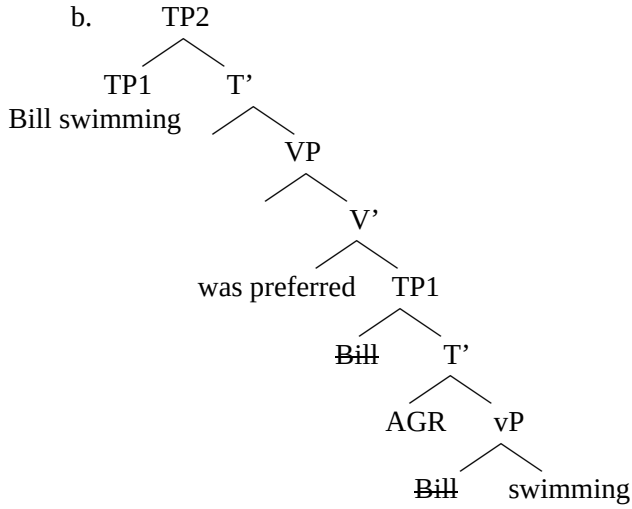
that cannot value the (accusative) Case of an internal argument. As predicted by the analysis of CGs developed here, this is possible only in certain cases in which there is *not* an accusative Case available in the matrix clause.

The first case is when a CG is generated as the complement of a passive verb, as shown in the derivation of (57). According to the most widely adopted analysis of passives, the passive morphology eliminates the matrix external θ-role and the accusative Case position in the matrix clause [Spec, *v*P]. T2 (matrix T) matches/agrees with AGR, and AGR raises, pied-piping the whole clause (TP1) to [Spec, TP2], in order to check the EPP feature in [Spec, TP2] of the matrix clause. In [Spec, TP2] AGR (the T head of the CG) has its own Case valued and is now able to value the Case of its subject *Bill*, with which it has already established a Match/Agree relation in the course of the derivation.[58]

[58] One issue arises in this case involving pied-piping of the whole CG to the subject position of the matrix clause. What prevents the matrix T from probing only the embedded subject DP *Bill* as its goal? Under a representational view, Bill c-commands AGR (the head T of CG), and AGR does not c-command *Bill*, so in terms of c-command Bill should be closest for Match/Agree with matrix T. So, the Match/Agree between matrix T and the embedded DP *Bill* would be expected, but in fact it would yield a non-convergent derivation corresponding to (60), which will be analyzed in detail later. But the question remains why both *Bill* and the embedded AGR of CG are accessible goals for the matrix probe T, so that the convergent derivation in (57) is in fact possible, under which it is the embedded AGR that works as the goal for matrix T. There are two alternative solutions for this problem. First, it is possible to adopt a derivational c-command approach (Epstein et al. 1998) to the relation between *Bill* and AGR of CG, by which they mutually c-command each other, given that at an earlier point in the derivation T c-commanded *Bill*. Second, it is possible to adopt an approach by which the matrix probe T in fact attracts a feature of the whole embedded TP of CG, and not just of its head independently. This is the approach to attract adopted for instance by Pesetsky & Torrego (2001:363 (13)), as their *Head Movement Generalization*. Under this approach, given that matrix T is in fact targeting either the embedded DP *Bill* or the embedded TP of CG, the two goals are equidistant to matrix T, if closeness is still subsumed under c-command, and not under domination (that is, neither *Bill* nor the embedded TP c-command each other in (57), because the TP dominates *Bill*; therefore, both are equidistant to the matrix probe). Either the *Derivational C-command* approach or the *Head Movement Generalization* approach can help explain why the derivation of (55) does not induce a locality violation in the application of Match/Agree.

(57) Bill swimming was preferred.
a. [$_{TP2}$ [$_{TP1}$ Bill swimming][$_{T'}$ [$_{vP}$ was preferred [$_{TP1}$ ~~Bill swimming~~]…
[~~Case~~/~~EPP~~/~~Case$_{AGR}$~~ [[[~~EPP~~ θ]…

b.



Other instances of CGs in subject position can be handled along the same lines, including CGs as complements of raising verbs:

(58) [Bill swimming here] seems/is [~~[Bill swimming~~] impossible].

One important point shown by this and other remaining cases is that raising the whole CG to the matrix [Spec, TP] is the only way in which both the Case feature of the CG subject and the Case feature of the CG itself can be valued in examples in which the CG is generated as complement of a passive verb or a raising verb (cf. later the ungrammatical (60)-(62a)).[59] In a certain sense, since

[59] Notice, however, that cases such as (i) are impossible. I take the restriction here not to be related to the properties of CGs alone, but to the general impossibility to raise the whole embedded clause to the subject position of the bare raising verb *seem*, as seen also with infinitive (ii) and finite clauses (iii):

(i) * [Bill swimming well] seems ~~[Bill swimming here].~~
(ii) a. * [(For Bill) to swim well] seems ~~[(for Bill) to swim well].~~
b. Bill seems [~~Bill~~ to swim well].
(iii) a. * [That Bill swims well] seems [~~that Bill swims well~~].
b. It seems [that Bill swims well].

there is only one source of Case valuation in the matrix clause (the matrix T head), that head has to value Case within the embedded CG in such a way that both the embedded CG and the embedded subject DP can have their Case feature valued.

The fact that a *to*-infinitive does not carry a Case feature, different from a CG, explains why the same pied-piping process is not possible with infinitives, because it does not allow subsequent Case valuation in the matrix [Spec, TP2] of an overt subject DP (*Bill* in (59)) with *to*-infinitives. Despite its pied piping to the matrix [Spec, TP] the infinitival clause does not have the necessary feature specification to value Case of its own overt subject in (59a,b). Consider the contrast with (59c), in which there is no embedded overt subject DP that needs to have its Case valued, hence the derivation is grammatical with the embedded infinitival:

(59) a. * [TP2 [TP1 Bill to swim here] is preferred].
b. * [TP2 [TP1 Bill to swim here] is/seems impossible].
c. [TP2 [TP1 to swim here] is/seems impossible].

Notice that clausal pied-piping involving all three types of clauses (CG, infinitive and finite clauses) is grammatical with raising adjectival predicates such as *seem impossible*:

(iv) a. [Bill swimming here] seems impossible. (see (58)).
b. [(For Bill) to swim here] seems impossible.
c. [That Bill swims here] seems impossible.

This recurrent contrast shows that there are independent syntactic distinctions between bare raising verbs such as *seem* and a*ppear* and raising predicates such as *seems/appears impossible, is/seems (very) likely*. However, the two sets of cases are still amenable to a common analysis, if in the case of adjectival raising predicates like (iv) the embedded subject clause in fact raises from inside a small clause headed by the adjectival predicate:

(v) a. [Bill swimming here] seems [[~~Bill swimming here~~] impossible]. (see (58)).
b. [(For Bill) to swim here] seems [[~~(For Bill) to swim here~~] impossible].

Given this analysis, the restriction on pied-piping of the whole embedded clause can then be shown to hold across the two different types of raising cases, since it would also apply to the small clauses in (iv)-(v), as shown in (vi):

(vi) a. * [[Bill swimming here] impossible] seems [[~~Bill swimming here] impossible~~].
b. * [[(For Bill) to swim here] impossible] seems [[~~(For Bill) to swim here]~~ impossible].

I put aside here further discussion about the motivation for this general restriction on clausal pied-piping with raising predicates.

Since a *to*-infinitive cannot be assigned Case, it cannot further value the Case of its embedded subject (*John)* in (59a-b), and the derivation crashes.[60]

Consider now other derivations in which each type of CG (with a null or an overt subject) is base generated as the complement of a matrix passive verb. Given the absence of an accusative Case feature on the matrix VP, the CG fails to have its Case valued, and instances such as (60) and (61) are always ungrammatical. Consider the explanation for why (60) is ungrammatical despite the fact that the DP subject *Bill* can have its Case valued in [Spec, TP2] (matrix clause). The DP *Bill* is base generated as the external argument of the CG, and moves to the matrix clause where it has its Case valued as nominative Case. Given this, why should the sentence then be ungrammatical? Under the analysis proposed here, there is only one Case checking/valuing head in the matrix clause (T), as it is standardly assumed for the passive of transitive verbs, and if this T head values the Case of *Bill*, this prevents the Case feature (C_{AGR}) of the CG from being checked/valued.

[60] However, English has alternative cases (i) in which *for* can value the Case of the embedded subject of infinitives in the same position as (59):

(i) [*For* Bill to swim] is/seems impossible.

Assuming that *for* is generated as a complementizer, it is possible to explain why this alternative is not available for CGs in positions in which they would not otherwise have their Case valued, given the fact that they do not project a CP (see section 2):

(ii) a. * It was impossible/preferred [*for* Bill swimming]. (see also (61)).
b. * Bill was preferred [*for* swimming]. (see also (60)).

(60) * Bill was preferred swimming.
[$_{TP2}$ Bill [$_{vP}$ was preferred [$_{TP1}$ ~~Bill~~ [$_{T'}$ AGR [$_{vP}$ ~~Bill~~ swimming]]]...
[ϕ/~~Case~~/~~EPP~~ [~~EPP~~ /***Case$_{AGR}$** [θ]]]…

(61) * It was preferred [Bill swimming].[61]

The existence of these ungrammatical cases provides further support for why T^0 of CG itself needs to enter into Agree with the T head of the matrix clause, pied-piping the whole clausal gerund as in (57) to satisfy the EPP. Since there is only one Case position available in the matrix clause, it has to value the Case feature of the CG, which can in turn value the Case feature of its subject DP.[62] The required pied-piping of the CG for satisfaction of the matrix clause EPP, as in (57) and (58), allows the valuation of both Case features in the clausal gerund (i.e. the one in the head T^0 of CG and the one in its DP subject).

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[61] In (61), it is also assumed that Agree and Case valuation cannot occur in instances in which the category that needs to value its Case does not move overtly, when an expletive *it* could be inserted in Spec, TP of the higher clause. One possible solution to this problem is to assume that, under an Agree approach to expletive-associate structures, expletive *it* is assigned Case and the extraposed clause remains caseless. This provides an explanation for why *it*-extraposition is impossible with CGs (see section 2). The same kind of approach may be necessary to rule out cases such as (i), in which one possibility is that the DP *a man* would not have its Case valued, given that the matrix T can have its feature requirements satisfied and become inactive by insertion of the expletive *it*, which also values its Case in the matrix [Spec, TP]

(i) * It seems [to be a man in the yard].

However, this approach may require more complex mechanisms in order to be compatible with recent analyses of *there*-existential constructions, in which the reason why *there* is licensed in *there*-associate constructions is not taken to be dependent on Case, and the matrix T in *there*-existentials is taken to be available to value Case of the associate DP (see e.g. Chomsky 2000, 2001 and Lasnik 1999, 2001a,b), yielding the grammatical (i) (see fn. 9 for references to alternative approaches attempting to derive the EPP from independent mechanisms, see also fn. 63):

(i) *There* seems [to be a man outside].

[62] The approach to deletion of valued features adopted here is similar to the one in Chomsky (2001:12). Features valued during a cycle remain active for further computation at least until the strong phase level. That is, even though the ϕ-features of AGR (the T of CG) are valued, they can remain active for further computation until the end of their strong phase, corresponding either to matrix *v* (as in the case of (55)) or to matrix C (as in the case of matrix passive and raising verbs ((57) and (58)).

A derivation along the same lines of (60) can account for the ungrammaticality of raising constructions with CGs, if it is assumed that the DP *Bill* in (62a) is also base generated as an argument of the CG and raises to the matrix clause for Case valuation, using up the only available Case feature in the matrix clause. This in turn prevents the CG itself from satisfying its Case requirement (for the alternative grammatical derivation in which the whole CG raises to matrix [Spec, TP] see (57)-(58)). As is well-known, ungrammaticality does not arise with standard raising-infinitive constructions when the embedded subject raises out of the embedded clause for Case valuation, as in (62b). This is due to the fact that infinitives, different from CGs, do not carry a Case feature, under the analysis developed here, and only the embedded DP *Bill* needs to have a Case feature valued in (62b). In this respect, compare examples in which the whole infinitive would raise, yielding an ungrammatical derivation (59a, b), for the same reasons.

(62) a. * Bill seems [~~Bill~~ swimming well]. [63]
b. Bill seems [~~Bill~~ to swim well].

In sum, the restrictive, unified analysis of CGs proposed for the different cases above has the advantage of accounting for a large number of apparently complex restrictions on the distribution of CGs in different syntactic contexts, representing a significant improvement over previous approaches, which did not consider the whole range of distinct cases analyzed here. Second, the complex phenomena analyzed here are reduced to individual feature properties of lexical heads in the derivation. Finally, this approach avoids an appeal to unmotivated tense distinctions in the analysis of CGs, as discussed in section 3.

[63] The restrictions on expletive constructions with CGs (see fn. 61) also extend to raising constructions with CGs, presumably for the same reasons associated with the impossibility of expletives in other cases: Expletive *it* needs to have its Case valued (i), and once that happens in matrix [Spec, TP] of raising constructions, there is no other head that can value the Case feature of the embedded CG. In the case of *there* expletives, if the Case valuation mechanism underlying the *there*-associate DP interaction involves the need for an indefinite DP such as the *there*-associate, (cf. (iii) below), this would explain why the whole CG clause cannot occur in *there*-existentials (ii). That is, the CG itself does not have the semantic properties that indefinite DPs have which allow them to be possible in *there*-existential constructions. This is captured straightforwardly in the current analysis, under which CGs are not even analyzed as DPs:

(i) * It seems [a man swimming well].
(ii) * There seems [a man swimming well].
(iii) * There seems [(Sue) to be (Sue) outside].

5 Overt Case marking and default Case?

One question I have not addressed so far is why the morphological realization of Case of the embedded subject in (55) is apparently accusative (in the case of a pronoun), despite the fact that it does not involve ECM. Consider one possible account of this problem involving an appeal to default Case to account for the morphological form of certain DPs. In this context, any discussion about the issue of the morphological realization of Case in CGs benefits from a contrast between gerunds and infinitives. First, one could suggest that CGs allow overt subject DPs because these subjects receive *default* Case. However, this raises significant problems regarding how a theory of default Case can be restrictive enough to license DPs only in some contexts (e.g. gerunds), but not in others (e.g. infinitives). One of the approaches to default case that is worked out in more detail, Schütze (2001:208-9), argues that "restrictions on the surface position of DPs, usually treated under the Case Filter (Chomsky 1981, following unpublished work by Jean-Roger Vergnaud), cannot be implemented by the same features that underlie case morphology, because morphological case and abstract Case behave as separate systems." Schütze goes on to refer to abstract Case as *structural licensing*, and further argues that: "Default Case can never "save" an otherwise invalid syntactic structure." For him, "there are no default case features in the syntax. If there were, they would render the Case Filter vacuous." Given this, Schütze argues that the possibility of overt subjects of nonfinite clauses in certain languages [among which I include the English CGs above] cannot be attributed to the availability of default Case. For Schütze (2001:210) default case marking can arise only when other mechanisms of Case marking do not apply, including abstract Case (structural licensing in Schütze's terms) that is assigned by a syntactic head — e.g. a verb or Infl (following Chomsky 1995a). Although there are some unclear aspects regarding the interaction between Case theory and Schütze's proposal that there is *default* morphological case, the satisfaction of Case requirements in CGs has relevant properties that fall within the domain of (syntactic) abstract Case, given that the syntactic structure directly determines that CGs (with and without overt DP subjects) are excluded from caseless positions (see more clearly, in section 4, the analysis of ungrammatical examples resulting from the lack of Case valuation in different CGs).

A remaining question is whether the overt subject of CGs can receive only accusative Case (51), identified by Schütze as the morphological default case in English. First, clausal gerunds may at least for some speakers allow limited alternation between an accusative-like form and a nominative form for their overt subjects. Second, more importantly, a specific sub-class of clauses – Absolute CGs, which I discuss next – in fact requires overt subjects marked as nominative, for most speakers I tested. This raises problems for a default Case

approach, and indicates that the determination of specific Case morphology of DP subjects in CGs involves more complex mechanisms than a single *default* case. One of these possible mechanisms may involve the precise ϕ-feature/agreement status of the head T of CG (see fn. 46 regarding ϕ-feature specification of CGs).

CGs that occur as adjunct absolute clauses (63a) have different properties regarding how they satisfy a Case requirement. In these instances the Case marking on the clausal gerund is not clearly dependent on subcategorization of the CG by a Case checking/valuing head. However, a similar possibility also exists for certain topic DPs, which are not realized in a standard structural Case position, as in (63b):

(63) a. Mike expected to win the game, he/him being the best athlete in the school.
b. Mike/him, I never met.

However, in all other respects that I considered, Absolute CGs share properties with other CGs. More specifically, when they display a null subject they consistently display properties of obligatory control. As I showed in section 3.2 for other CGs, in Absolute CGs the null subject is OC PRO. As evidence for this, it must have an antecedent (64a). The antecedent of OC PRO must be local (64b) and must c-command PRO (64c). OC PRO only permits a sloppy interpretation under ellipsis (64d) and cannot have split antecedents (64e). Finally, in cases involving *only NP* constructions (Fodor 1975), the binder of PRO must be the expression formed by *only + NP* (64f).

(64) a. * It was expected to start the concert soon, PRO having turned the lights off.
b. John$_j$ told Peter$_k$ that Mary$_m$ would arrive on time, PRO$_{?j/*k/m}$ being responsible for starting the conference.[64]
c. Peter$_k$'s daughter$_j$ went on to college, PRO$_{j/*k}$ being the best student in the class.
d. Having kissed Mary at the door, Peter left the party with some friends, and Bill did too.(= Bill kissed Mary and left).
e. PRO$_{*j+k}$ understanding the importance of a good education, Peter$_j$ expected his son$_k$ to go to a good college.
f. PRO$_{j,*k}$ Having given the BST speech, [only Churchill]$_j$ was congratulated by everybody.

Absolute CGs may also be taken to behave like other CGs regarding their Binding Theory properties, which I discuss next, supporting the view that they should be analyzed in a similar way. In different respects, the fact that Absolute CGs display nominative Case on their overt subjects further indicates that a default Case approach to case marking in CGs is not sufficient to explain the complex Case properties of CGs.

6 Binding and Clausal Gerunds

In this section I propose additional empirical support that the distinction between obligatory control CGs and non-obligatory control CGs correlates with distinctions in the binding properties of the two classes of gerunds. In general, I show that in all the cases of OC CGs, the matrix clause behaves as the binding domain for the embedded CG. This includes CGs in the complement position of a verb (65a), in the complement position of subcategorized preposition (65b); in adjuncts PPs, as the complement of a preposition (65c), and in absolute constructions (65d). Consider first cases of pronoun binding by a referential expression in the matrix clause:[65]

[64] The fact that *John* in the higher matrix clause is marginally licensed as antecedent of the embedded null subject is related to the fact that the adjunct Absolute CG can attach as an adjunct either to the higher finite clause or to the intermediate one.

[65] Reuland (1983) argues that CGs in PP adjuncts (65c) and Absolute CGs (65d) do not pattern with CGs in V or P complement positions (65a/b) with respect to binding. I show here that all these cases have a common behavior with respect to binding. Still, there is a significant amount of variation among speakers regarding their judgments on binding involving CGs. The judgments I report here correspond to the ones I obtained from the majority of the speakers I tested.

(65) a. The architects$_j$ favored [them$_{*j}$ being placed upon the investigations committee]. (Reuland 1983: (28a)).
b. John$_j$ counted on [him$_{*j}$ being elected] (Reuland 1983: (74a)).
c. John$_j$ left [without him$_{*j}$ having finished the report].
d. [Mike and Paul]$_{*j}$ called for assistance, them$_{*j}$ being unable to fix the computer.[66]

The examples above indicate that the subject pronoun in the embedded CG cannot be bound by the subject of the matrix clause. The four cases of CGs above are exactly the ones that display the interpretive properties of OC PRO, when the CG displays a null subject, and which I argued in section 4 to be the result of A-movement. Recall that the main motivation for A-movement of the embedded subject in the OC PRO cases is the need for the embedded DP subject to check its uninterpretable Case feature in the domain of the matrix clause. In that respect, there is a correlation between movement and binding, since the matrix clause is not only the Case domain for the embedded CG subject, but also its binding domain.

Assuming that cases of OC PRO result from NP movement, the fact that only OC PRO gerunds take the matrix clause as their binding domain supports an approach in which the same domain in which A-movement out of the embedded gerund is possible is also the domain in which a pronoun cannot be bound.[67] This is similar to what one observes in standard cases of A-movement, such as raising (66). The same correlation will be seen below with anaphor binding:

[66] However, notice that many speakers allow coreference between an embedded pronoun and the matrix subject in certain instances of absolute constructions as (i) below:

(i) Mike$_k$ expected to win the game, he$_k$ being the best athlete in the school.

It is not clear why absolute constructions allow this possibility for certain speakers (especially with a nominative subject pronoun), but I assume that specific facts about absolute constructions in general may play a role here. One possibility is that absolute constructions may have a status similar to focalized constituents, allowing their subject pronouns to avoid the restriction on coreference imposed by Binding principles. As I will show in (69e), this distinctive behavior of absolute constructions with respect to Binding Principle B goes away in cases of pronoun binding by a quantifier, indicating that the correlation between pronoun binding and the NP-movement of CG null subjects holds for Absolute CGs as well.

[67] I attempt here to make a connection between the binding properties of gerunds and the possibility that their subject moves to the matrix clause. I attempt to relate these facts to a movement approach to the OC subjects of clausal gerunds.

(66) Frank$_{*k}$ seems [~~Frank~~ to ~~Frank~~ like him$_{j/*k.}$]

In fact, Hornstein and San Martin (2000) argue for a more direct correlation between the possibility of movement and the impossibility of coreference between a pronoun in an embedded non-finite clause and a matrix DP. When there is a derivation where movement of an embedded subject DP is possible (e.g. yielding a null subject), inserting a pronoun in the position of that DP is more costly. The only way for the derivation to take place with a pronoun is if the pronoun is disjoint in reference from the potential antecedent in the matrix clause. The CGs discussed here provide direct evidence for that proposal, given that they allow either a null category (as the result of movement) or a pronoun in the subject position. Since movement is an option, an overt pronoun can only be licensed if it is disjoint in reference from a potential antecedent in the matrix clause. Interestingly, this explains why coreference is allowed in (67). Since adjuncts introduced by *with* require an overt subject, there is no requirement for *him* to be disjoint in reference from *James:*

(67) James$_i$ got beaten at the game, with him$_i$ stupidly letting his rivals score several times. (Adapted from Reuland 1983: (69a)).

Consider now pronoun binding with subject CGs, the only case of CGs that displays the interpretive properties of NOC PRO, which I analyze as not involving A-movement. Crucially, CGs in subject position (68), differently from the other types of CGs in (65), allow for coreference between the embedded subject pronoun and a matrix DP. That indicates that CGs in subject position are the only ones that function as a binding domain independent from the matrix clause, which is again consistent with the movement analysis, since A-movement from these CGs to the matrix clause is not allowed (see also section 3.3):

(68) a. [John$_j$ getting good results at work] encouraged him$_j$ to stay in the company.
b. [Him$_j$ getting good results at work] encouraged John$_j$ to stay in the company.

Facts involving pronoun binding by a quantifier are stronger support for this correlation, as shown below. A universally quantified DP in the matrix clause cannot bind the embedded subject of any CG analyzed here as allowing A-movement:

(69) a. Every player$_k$ favored him$_{j/*k}$ playing in the finals.
b. Every employee$_k$ counted on him$_{j/*k}$ being chosen as the new manager.
c. Every student$_k$ left without him$_{j/*k}$ finishing the report.
d. He/him$_{j/*k}$ being a good actor, every student$_k$ wanted to be in the play.
e. Every student$_k$ wanted to be in the play, he/him$_{j/*k}$ being a good actor.

Embedded subject CGs as in (70a,b) pattern similarly to embedded finite clauses (70c) in that they allow the quantifier in the matrix clause to bind the embedded subject, because subject CGs function as independent domains for binding, similarly to finite clauses and differently from other CGs:

(70) a. [Him$_{j/?k}$ winning the game] was important for every player$_k$
b. Every player$_k$ said that [him$_{j/?k}$ winning the game was important].
c. Every student$_k$ said [that he$_{j/k}$ studied for the exam].[68]

Consider now the licensing of anaphors as subjects of CGs. Consistent with the facts involving pronoun binding, anaphors (reciprocals) are licensed in at least three types of CGs that are also analyzed here as allowing A-movement, namely, in verb complement position (71a); in the complement of a subcategorized preposition (71b); and as the complement of PP adjuncts (71c):

(71) a. The architects$_i$ favored [each other$_i$ being placed upon the investigations committee] (Reuland 1983, (29)).
b. The architects$_i$ counted on [each other$_i$ being placed upon the investigations committee].
c. They$_i$ both disagreed with Bill [without each other$_i$ noticing it].[69]

In the cases above, the binding domain for the anaphor is the matrix clause, which suggests once more that there is a direct correlation between the possibility of A-movement out of a CG and the fact that the matrix clause is the binding domain in such cases. This is again supported by what one finds in a standard case of A-movement:

[68] Binding of the subject pronoun by a matrix DP may not be entirely perfect, but what is crucial is that only subject CGs allow their pronoun subject to be bound by a universal quantifier in the matrix clause, whereas other CGs do not allow this at all.
[69] Reuland suggests that anaphors in the subject position of PP adjunct CGs are in general bad. Although examples such as (71c) are difficult to come up with, they are considered good by most speakers.

(72) The kids$_j$ seemed [___ to like each other$_j$]

Before I discuss Absolute CGs, consider anaphor binding in subject CGs. The examples below show that an anaphor is not licensed in the subject position of a CG that occurs in a subject position. This may be taken as one more piece of evidence for the correlation between binding domains and the analysis of control proposed here. Since subject CGs are cases of NOC, their subject is not the result of A-movement to the matrix clause. Since the embedded CG should be an independent domain for binding, an anaphor cannot be licensed by a DP in the matrix clause, in such cases:

(73) a. * [Himself getting good results at work] encouraged John to stay in the company.
b. * [Each other having to sing the solo] frightened the boys in the extreme. (Reuland 1983:125).

Finally, let us discuss the only case of binding with CGs which does not seem to fit in the picture presented above. Absolute CGs do not license anaphors in their subject position, contrary to what might be expected. However, if there is a consistent correlation between binding domains and the OC/NOC distinction in CGs, Absolute CGs should allow anaphors in their subject position, since they display OC PRO properties. However, that prediction is not borne out:

(74) * They both disagreed with Bill, each other having already noticed (it).

However, a possible explanation for the unexpected behavior of Absolute CGs in this respect is the fact that anaphors are not licensed at all in the subject position of Absolute CGs, independently from the fact that the matrix clause functions as the binding domain for them. This constraint may be related to the *Anaphor Agreement Effect* proposed by Rizzi (1990):

(75) *Anaphor Agreement Effect*
Anaphors do not occur in syntactic positions construed with agreement.

Given the effect above, Woolford (1999) claims that the impossibility of anaphors in certain positions may be used at least as weak evidence for the presence of covert agreement. That suggests that what may rule out the occurrence of anaphors in Absolute CGs is actually the fact that covert

agreement may occur with their subject position, differently from other CGs. As I suggested in the analysis of the case properties of CGs in section 4, there may be a reason to believe that this is possible, given that Case assignment to the lexical subject of an Absolute CG might occur independently from the matrix clause, differently from other types of CGs, and that may be related to a covert agreement property that only shows up in Absolute CGs and maybe in subject CGs,[70] providing a different reason for why anaphors are not licensed with subject CGs either, besides the fact that they should behave as independent domains for binding. However, notice that this is still not without problems, and it does not warrant collapsing Absolute CGs and CGs in subject position, given their differences in other respects. First, CGs in subject position display NOC PRO as subject (section 3.2) and Absolute CGs show OC PRO properties (section 5). Second, the contrast between Absolute CGs (see (65d) and (69e)) and subject CGs (see (68) and (70)) regarding pronoun binding still stands as evidence for their otherwise different behavior regarding binding.[71]

7 Case and agreement in non-finite domains

Before concluding this chapter, I discuss briefly some cross-linguistic data that illustrate phenomena similar to CGs. In different respects, CGs behave like a restricted set of non-finite clauses that occur in other languages, including Basque, Portuguese and possibly Quechua. Basque has a set of non-finite clauses that require overt morphological Case corresponding to the structural position in which these complements occur, including the complement position of a matrix verb and of a preposition. These clauses do not display distinctions in inflection aside from Case, but a subset of them can license either overt subjects or null subjects with control properties, as in the embedded clause in

[70] If agreement features indeed come into play regarding Absolute CGs, their analysis may then bear more similarities to Reuland 1983. Cf. Schütze 1997, 2001 for a less constrained view on the licensing of overt subjects in non-finite domains in general (see section 5).

[71] One might consider that the Anaphor Agreement Effect as proposed by Rizzi may be too strict, if we consider NP-traces as a type of anaphor, under the approach to empty categories in terms of (Binding Theory) functional determination (Chomsky 1982). Given this view, as also pointed out by Jan-Wouter Zwart (p.c. 2005), one potential empirical problem for (75) has to do with NP-movement in the presence of past participle agreement, which would generate an NP-trace. This problem arises more clearly in a GB approach to movement, in which traces are generated as the result of movement. Under Minimalism traces are banned because they do not result directly from lexical insertion, giving place to approaches such as the Copy Theory of Movement (Chomsky 1995a, Nunes 2004) and especially Remerge (Epstein et al. 1998), under which no empty category is generated in the departure site of movement.

(76) (see Ortiz de Urbina 1989:166-8).[72] In fact, non-finite clauses that license a lexical DP as their subjects in Basque have to be structurally Case-marked themselves. These properties correspond exactly to the properties I argued here to hold for CGs, with the only difference that in Basque the abstract Case marking on the head of the clause also has an overt morphological counterpart. Ortiz de Urbina argues that some of these Case-marked non-finite clauses in Basque have an INFL affix *-t(z)e* that is attached to V, as in (76), in which the embedded non-finite clause receives absolutive (A) Case marking:[73]

(76) [__ / Rampalek flauta jotze]-a asko gustatzen zaio Jon-i.
ec / Rampal flute play-A much like aux John-D
'John likes (himself /Rampal) playing flute very much.'

Ortiz de Urbina also points out the difficulty of proposing an appropriate analysis of non-finite clauses that can license either an overt or a control null subject, given that different theories of Case and control argue that overt subjects have to be excluded in positions in which control null subjects are possible, and vice-versa. If an analysis for this kind of alternation along the lines of the one developed in this chapter (see previous section) is on the right track, it may also be considered for Basque. Embedded *-t(z)e* clauses such as (76) carry a Case feature that needs to be valued, and once this Case valuation takes place, the embedded *-t(z)e* clause could presumably also value the Case of its own subject.[74]

Quechua displays non-finite clauses that arguably are also overtly Case marked by a case-ending, represented by *-paq* 'for' (they also show overt realization of person and number ϕ-features). Crucially, these Quechua clauses allow overt subjects. (Ortiz de Urbina 1989:168(55)):

(77) t'anta-ta apamurqan [wawaykuna mikhu-na-nku-paq]
Bread-ACC brought my children eat-NOM-3PL-for
'He brought bread so that my children eat.'

[72] See also Zabala & Odriozola 1996, San Martin 2004 and references therein.

[73] Ortiz de Urbina (1989: 171-3) argues that *–t(z)e* non-finite clauses have properties that are specific to clauses and different from nominals, and provides empirical evidence similar to what I showed for CGs in section 2. For instance, the arguments of *–t(z)e* clauses cannot occur in the genitive case, different from subjects of noun phrases. Also, *–t(z)e* clauses accept adverbial, but not adjectival modification, contrary to DPs.

[74] Embedded subjects of non-finite *-t(z)e* clauses display the same morphological case marking as subjects of tensed clauses and do not present, in this respect, the same problem that arises in the arguably corresponding English CG clauses, in which the embedded subjects are marked either as accusative or, less often, as nominative case (see section 5).

Portuguese displays non-finite clauses that can have either an overt or a null subject. An inflected counterpart of these infinitives displays overt person and number agreement, so it can license overt subjects (78). Crucially, as Raposo (1987) argues, inflected infinitives can appear only in those contexts where the infinitival clause (analyzed as IP by Raposo), is assigned Case by an external Case assigner (although Portuguese does not display overt Case marking, aside from the pronominal system, similar to English). The non-inflected infinitives lack overt agreement morphology and as I will argue in chapter 3 license only null subjects with obligatory control/OC properties (analyzed as PRO in the standard approach to control in infinitives).[75]

(78) Nós lamentamos [eles ter-em recebido pouco dinheiro].
We regret they have-INF-3P received little money
'We regret them having received little money.'

Together with English CGs, the structures above correspond in general to non-finite clauses that have to occur in Case positions, arguably because they need to value their own Case feature (in which case they may display overt Case morphology at least in Basque and possibly in Quechua). Furthermore, these Case-marked structures can value the Case of an embedded overt subject, but may also allow the occurrence of a null subject. The Case requirement on the whole clause may constitute a requirement for the possible occurrence of a lexical subject. These properties suggest that CGs licenses lexical subjects in a way similar to Basque infinitives, and possibly similarly to Portuguese and Quechua infinitives as well. The relevant non-finite structures in these languages would then behave similarly in their syntax, and differ only as to whether they display overt morphological marking for Case and/or overt ϕ-feature distinctions.[76]

[75] In different respects, Portuguese inflected infinitives also behave like clauses, and not like DPs, as observed for English CGs and for Basque *-t(z)e* non-finite clauses. However, assuming that the distinction in the overt realization of agreement features in inflected and non-inflected infinitives requires a parallel distinction in the feature specification of their Tense head, then Portuguese cannot be entirely collapsed with English (and possibly Basque) regarding the possibility explored in this chapter that a Tense head with a single specification for agreement and Case yields the derivation of non-finite clauses with both overt and OC null subjects. See chapter 3 for an independent analysis of the two types of Portuguese infinitives.

[76] It is not clear whether Quechua clearly allows the alternation between null and overt subjects found in the corresponding non-finite clauses in the other languages. Notice also that the Quechua example in (77) may in fact find a correspondent in English *for*-infinitival clauses, which, different from the non-finite clauses discussed here, does not display the possibility of an alternation between an overt and null subject (i). However, notice that such an alternation may be found in Belfast English (see Henry 1992), in a way that is at least partially similar to

In such languages the problem is how to distinguish the feature properties of a non-finite clause with a null subject from the corresponding clause with a lexically overt subject, especially if they are morphologically identical and in general have the same distribution, as it is the case with English CGs and Basque non-finite *–t(z)e* clauses.[77] In this chapter, I proposed an analysis that eliminates the need to distinguish the internal structure of the two types of clauses in English, especially given the absence of empirical distinctions in the feature specification of CGs that allow the alternation between overt and with null subjects.

8 Conclusion

This chapter analyzed the special properties of clausal gerunds (CGs) in English and proposed an analysis that attempted to explain a host of restrictions in their distribution, which had not all been previously analyzed.

The analysis developed here accounts in a unified way for why CGs can license both overt and null subjects, despite the lack of syntactic feature distinctions between both instances. The existence of structures such as CGs which license overt subjects or control null subjects exactly in the same context raises significant problems for theories of Case and of control. The chapter presents in detail empirical problems raised by CGs for null Case/tense-based approaches to control. It addresses these problems by proposing an analysis in which the possibility of the two types of subjects in CGs results from the interaction of the same grammatical mechanisms, the ones involved in Case and agreement valuation. The proposed analysis adopts

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what I discussed here for CGs. Standard English allows this alternation in a much more limited way with *to*-infinitives, in complement position of verbs such as *want* (see e.g. Pesetsky 1991:18, Bošković 1997).

(i) [For Bill/ (**e*) to leave the room] would require calling security.

[77] San Martin (2004) investigates the properties of control clauses in Basque, by also arguing against the null Case approach. However, she adopts the view that control corresponds only to [+tense] clauses whereas raising corresponds to [–tense], a view that I argue is empirically insufficient, as I argued in section 3.1 and also in chapters 2 and 3. Kapetangianni & Seely (2003) propose a movement analysis for OC PRO in *na*-clauses in Greek, which can display both OC and NOC properties, despite their lack of morphological distinction in terms of agreement features (cf. Philippaki-Warburton 1987, Terzi 1992, 1997, Iatridou 1988/1993, Varlokosta 1994, Philippaki-Warburton & Catsimali 1999, and references therein). I return to these issues in chapter 3.

an A-movement analysis of control CGs without appealing to distinctions in the feature specification of the two types of CG.

CHAPTER 2

CLAUSAL VERSUS TP-DEFECTIVE GERUNDS: CONTROL WITHOUT TENSE

In this chapter I explore the idea that there is a class of complement gerunds that do not project a TP, contrary to the clausal gerunds analyzed in chapter 1. I address the consequences of this hypothesis for an approach to restructuring predicates and for theories of control.

1 A Class of Gerunds without a TP

The gerund complements of aspectual verbs (e.g. *start, finish, continue* as in (1)) and of verbs such as *try* and *avoid* (2) seem to belong to a class of gerunds that is distinct from the clausal gerunds found as complements of other verbs. Furthermore, as I will show in section 6, these complement gerunds, which I call TP-defective gerunds from now on, cannot be collapsed with gerunds that are complements to perception verbs.

(1) Mary started/finished/continued reading the newspaper.

(2) a. Bill_j tried [e_j talking to his boss].
b. Philip_j avoids [e_j driving on the freeway].

I present two empirical arguments that support the view that TP-defective gerunds are distinct from clausal gerunds in that they have a defective T(ense)P. I assume here a non-split TP, given that a more fine-grained, split inflectional phrase structure will not bear directly on the points I want to make. I will address the consequences of two alternative analyses of TP-defective gerunds. First, I consider the possibility, which I refer to as the weak hypothesis, that TP-defective gerunds do project a TP, but the head of their TP is specified as [–Tense], in the sense of Stowell (1982). Second, I consider a

strong hypothesis, that TP-defective gerunds do not project a TP at all.[1] In addition, I address the consequences of both alternatives for an analysis of control.

1.1 No independence in terms of tense and aspect specification

The first argument supporting the existence of a distinct class of TP-defective gerunds is the fact that they do not have a tense and aspect specification independent from the matrix clause. First, they do not allow the occurrence of embedded temporal adverbials distinct from the matrix clause (3), a possibility that exists with clausal gerunds (4):

(3) a. * Bill$_j$ tried today [e_j talking to his boss tomorrow].
b. * Philip$_j$ avoided last night [e_j driving on the freeway this morning].

(4) Mary$_j$ worried (yesterday) about Paul/him/e_j coming to dinner (tonight).

The impossibility of independent temporal adverbials with TP-defective gerunds can be explained if temporal adverbials adjoin to TP or are licensed by TP[2] – that is, they still need to have a TP dominate them. If these gerunds do not project a TP, there is no position where a temporal adverbial independent from the matrix clause can be attached.

Second, TP-defective gerunds do not easily allow for perfective morphology (5), differently from clausal gerunds (6)-(7).

(5) a. * Mark tried [having convinced his friends].
b. * John will avoid [having talked to Mary].

(6) a. Mark counted on [having convinced his friends].
b. John will remember [having talked to Mary].

(7) a. Ann counts on [John having finished the exam by now].
b. Paul remembers [having been to Chicago].

[1] Chierchia (1984) entertained a more radical version of the latter hypothesis in a different framework, by attempting to account for the properties of TP-defective gerunds in terms of a syntactic-semantic distinction. I put aside here certain aspects of the semantic distinction and focus on a syntactic account of their defectiveness.

[2] But see Cinque 1999 for a more complex view regarding the projection of adverbials.

1.2 No projection of a lexical subject

The second argument supporting the view that TP-defective gerunds do not project a TP is the fact that they do not allow an overt subject, either a regular DP or an expletive *there* (8), which are both possible with clausal gerunds (9).

(8) a. * Clark tried [Mary taking care of the finances].
b. * Mary avoided [*there* being too many people in the party].

(9) a. David prefers [Mary taking care of the finances].
b. Paul insists on [*there* being many people interested in his inventions].

Consider the two hypotheses I propose here to interpret this fact. Under the weak hypothesis, TP-defective gerunds have a [Spec, TP] position, but it does not license structural Case for an overt DP. That hypothesis accounts for the distinction between TP-defective and clausal gerunds in terms of their structural Case licensing properties. Note that this still argues in favor of some sort of deficiency of the TP projection in a TP-defective gerund. By the strong hypothesis, the impossibility of an overt lexical subject in TP-defective gerunds is the result of their lacking a TP projection altogether, eliminating the position within the TP-defective gerund where Case can be assigned to a subject.

2 Restructuring Gerunds?

Given the facts above, one could take TP-defective gerunds to be a class of restructuring predicates (RPs). This is consistent with the fact that the properties of TP-defective gerunds extend to gerunds in the complement position of aspectual verbs (10), a class of verbs usually analyzed as selecting restructuring predicates.

(10) Mary started/finished/continued reading the newspaper.

There are many different approaches to restructuring predicates in the literature. I consider here the one proposed by Wurmbrand (2001) to restructuring infinitives (RI). Wurmbrand characterizes restructuring infinitives in terms of a cluster of properties. Let us consider them in turn and see whether they extend to TP-defective gerunds.

First, restructuring infinitives lack complementizer properties. This property seems to extend to gerunds in general, and not only to TP-defective gerunds. (I argued for that regarding clausal gerunds in chapter 1). Two pieces of evidence

indicate that there is no CP projection available in CGs. That evidence extends to TP-defective gerunds. First, they do not allow the occurrence of complementizers (11a), unlike *to*–infinitives and finite clauses (11b-c):

(11) a. Ann avoided (*for/*that) working at home.
b. Ann wants very much for Mike to work at home.
c. Mark prefers that Mary travel with him.

Second, TP-defective gerunds can never occur as indirect questions; that is, short wh-movement is always excluded (12b), similarly to clausal gerunds (13b) and contrary to *to*-infinitives (14b).

(12) a. John didn't avoid [buying groceries].
b. * John didn't avoid what [buying *t*].

(13) a. John didn't remember [buying groceries].
b. * John didn't remember what [buying *t*].

(14) a. John didn't remember [to buy groceries].
b. John didn't remember [what to buy *t*].

Consider now an apparent problem for the argument that gerunds do not project a CP. Long wh-movement applies freely out of TP-defective gerunds (15) (see Reuland 1983 for clausal gerunds (16)).

(15) What did you try [reading *t* yesterday]?

(16) a. What do you prefer [studying *t*]?
b. Who do you want [*t* taking care of the company]?

Given that gerunds lack a CP projection, the moved constituent in (15)-(16) raises directly from its base position inside the embedded gerund to the [Spec, CP] of the higher clause. This is consistent with the conception of phases in Chomsky (2000, 2001). If gerunds were phases, the wh-element would need to move to the edge of that phase in order to be able to move later to [Spec, CP] of the higher clause. Chomsky argues that TPs are not phases. This applies straightforwardly to clausal gerunds, argued to be TPs in chapter 1.. The argument extends to TP-defective gerunds, argued here to be even more structurally defective than clausal gerunds. Therefore, an element internal to a gerund is accessible for movement directly to the matrix clause, without landing at any intermediate site, given that the gerund itself projects only up to

a TP. In fact, as a gerund is not a phase, it does not define an edge that could count as an intermediate landing site for purposes of movement.

The second property of restructuring infinitives pointed out by Wurmbrand (1998) is the fact that they carry no tense information independent from the matrix clause. As the tests with temporal adverbials in section 1.1 indicate, TP-defective gerunds seem to behave in a similar way.

Nevertheless, there are three other properties of RIs that do not seem to hold in the case of TP-defective gerunds. First, Wurmbrand (1998) argues that RIs do not have an embedded structural (accusative) Case position. She shows that the object of a RI raises (overtly or covertly) to the higher verbal domain in order to check its accusative Case. For instance, this is supported by long object movement from RIs in German (Wurmbrand 1998:24(5), 2001):

(17) ... weil [der Lastwagen und der Traktor] zu reparieren versucht wurden/* wurde.
since [the truck and the tractor]-NOM to repair tried were /* was
'…since somebody tried to repair the truck and the tractor.'

However, English TP-defective gerunds do not allow the kind of long-distance object movement shown by Wurmbrand for German RIs. This suggests that TP-defective gerunds have an embedded accusative Case position, contrary to Wurmbrand's RIs. In fact, there doesn't seem to exist similar supporting evidence for this property of Wurmbrand's analysis with respect to English *to*-infinitives either, especially considering that object shift is at least optionally attested in English (see Lasnik 1999 and references therein).

Second, Wurmbrand argues that RIs lack [Spec, *v*P] altogether, and are also unable to license a syntactic subject. The absence in a RI of a position for an external argument rules out not only the possibility of an overt lexical subject, but also the possibility of a PRO in the embedded RI. Finally, Wurmbrand argues that *try*-type RIs in languages like German, Dutch and Italian involve semantic control along lines similar to what was proposed by Chierchia (1984). That is, the embedded external argument position is eliminated, preventing the occurrence of either an embedded overt subject or a PRO, as shown in (18) with an English example.

(18) [$_{CP}$[$_{TP}$ John [$_{vP}$ ~~John~~ [$_{VP}$ tried [$_{"VP"}$ to visit [$_{DP}$ his sister]]

In this respect, Wurmbrand argues that non-restructuring infinitives (NRIs) project an embedded PRO subject (syntactic, non-obligatory or variable control), whereas RIs do not involve an embedded syntactic subject (seman-

tic/obligatory control). In support of that distinction, Wurmbrand argues for instance that in German RIs there is no (PRO)-argument available as an antecedent for embedded anaphors (19), differently from NRIs (20) (Wurmbrand 1998:26(7)).

(19) *…weil {sich} der Fisch {sich} vorzustellen versucht wurde. RI
since self the-NOM fish-NOM self to-imagine tried was
'...since someone tried to recall the image of the fish.'

(20) Es wurde versucht [PRO$_j$ sich$_j$ den Fisch mit Streifen vorzustellen].NRI
It was tried [PRO self the-ACC fish with stripes to-imagine]
'People tried to imagine what the fish would look like with stripes.'

On one hand, this contrast does not extend to English TP-defective gerunds, which would be ungrammatical in cases such as (21). TP-defective gerunds show obligatory control PRO, which requires a local, c-commanding antecedent, allowing anaphors to be bound in OC PRO contexts (as I show in section 4).

(21) * It was tried [nominating oneself for the prize].

On the other hand, there seems to be evidence from Theta theory supporting the view that TP-defective gerunds do project an external argument position, given the fact that they assign an external θ-role independent from the matrix clause. A similar argument has been made by Bošković (1994) for RIs (contra Wurmbrand). This indicates that although TP-defective gerunds do not seem to project to a TP, they do project [Spec, *v*P] where the embedded external θ-role and accusative Case obtain. That distinguishes them from the class of RIs discussed by Wurmbrand (1998, 2001) and others. In this respect, the structure of a TP-defective gerund should be as in (22):

(22) [$_{CP}$[$_{TP}$ Mary [$_{vP}$ ~~Mary~~ [$_{VP}$ tried [$_{vP}$ PRO [$_{VP}$ calling [$_{DP}$ her friends]]

Still, if TP-defective gerunds do have their own external argument independent from the matrix clause, why must it not be overt, contrary to what can be the case with clausal gerunds? Furthermore, the null-subject (represented until here as PRO) of TP–defective gerunds can only have obligatory control properties. I account for these facts in section 4.

3 Control and Null Case

As seen in the previous section, TP-defective gerunds do not allow for an overt subject, although they do license their own external argument in the form of a null subject. The alternative that immediately comes to mind given most Principles & Parameters accounts is to treat this null subject as PRO, as in (22) above. I also provided evidence supporting either one of two possibilities: TP-defective gerunds do not project up to a TP at all (strong hypothesis), or if they do project to a TP, this TP does not allow a temporal specification distinct from the matrix clause (weak hypothesis). These properties may be a road-block for a widely accepted P&P account for the distribution of PRO: the null Case theory (originally proposed by Chomsky & Lasnik 1993).

The strong hypothesis poses a major problem for the version of the null Case theory proposed by Chomsky and Lasnik (1993), who argue that non-finite clauses assign null Case to their PRO subjects in [Spec, TP] (see also Chomsky 2000, 2001): If TP-defective gerunds do not project a TP and still need to license PRO, there is no position where null Case can be assigned.

As I discussed in chapter 1 (section 3.1), Martin (1996, 2001) has offered arguments for a revision of the null Case theory that does not eliminate the need for null Case, but restricts its occurrence and the possibility of licensing PRO to non-finite constructions specified as [+Tense] in the sense of Stowell (1982). According to Stowell, the event-time of a control infinitive as in (23a) is unrealized with respect to the event-time of the matrix clause. Bresnan (1972) refers to that tense as a possible future. Stowell argues that raising (23b) and ECM infinitives (23c), on the other hand, do not have an internally specified unrealized tense, and may vary among different tense specifications (past, present or future), as determined by the properties of the matrix verb. Martin emphasizes that distinction, but proposes a slight revision in the tense interpretation of raising/ECM infinitives by arguing that the time/interval denoted by them must actually coincide with the matrix event-time. Given the interpretive distinction that Stowell originally proposed, he argued that control infinitives have a feature [+Tense], which was later taken by Martin to check the null Case of PRO. On the other hand, Martin argued that ECM/raising infinitives would have a feature [–Tense], which for Martin cannot check null Case.

(23) a. John decided [PRO to leave].
b. Ann seemed [*t* to be interested in the new job].
c. Bill believed Mary [*t* to be a good friend].

Given the above, the strong hypothesis for the analysis of TP-defective gerunds is also a problem for Martin's (1996, 2001) revision of the null Case

theory, because TP-defective gerunds (24a) pattern with subject control infinitives in that there are two external θ-roles to be assigned: one in the embedded clause and the other one in the matrix clause. In this respect, the null subject in the embedded clause must be a PRO, given that in Martin's theory the Government & Binding version of the θ-criterion is enforced (see Chomsky 1986), and each θ-role must be assigned to a different argument. Although this pattern also extends to clausal gerunds (24b), TP-defective gerunds would lack a position where null Case can be assigned in order to license PRO (contrary to fact (24a)), under the hypothesis that they do not project a TP.

(24) a. Bill tried/continued [$_{TP}$ PRO talking to his boss].
b. John prefers [$_{TP}$ PRO working at night].

The weak hypothesis also creates difficulties for a tense-based null Case theory. However, in this instance the problem is not be restricted to TP-defective gerunds, and partly extends to the analysis of clausal gerunds, as I also argued in chapter 1. Stowell (1982) argues that the tense of gerunds is completely malleable to the tense of the matrix clause, contrary to control infinitives. That is, instead of having a fixed time frame with respect to the matrix verb, gerunds can vary their tense specification according to the properties of the matrix verb, as in (25). In this respect, (clausal) gerunds differ from control infinitives in that gerunds do not have a fixed event-time with respect to the event-time of the matrix clause.

(25) a. Jenny remembered [bringing the wine]. (Stowell 1982 (8b)).
(= She remembered a past event of bringing the wine).
b. Jim counted (yesterday) on [watching a new movie (tonight)].
(= He counted on a future event of watching).

Given the above, Stowell proposes that gerunds in general carry a [–Tense] specification. This could offer a problem for a version of the null Case theory that relies on a [+Tense] specification in order for PRO to be licensed. First, as I showed in chapter 1 (section 3.2) regarding clausal gerunds, the fact that distinct temporal specifications can occur in the matrix and in the embedded clause (25) may constitute support for the idea that CGs allow a [+tense] specification. The problem I pointed out there for both Government & Binding and null Case approaches to control is that CGs allow both OC PRO and overt subjects to occur in the same domain.

However, the proposal Stowell makes that gerunds are [–Tense] in fact holds for TP-defective gerunds, and that specification would prevent null Case from being assigned to their PRO subjects, under Martin's analysis. The

evidence for [–Tense] with TP-defective gerunds is that they do not allow for any kind of temporal specification distinct from the matrix predicate (26), in contrast to clausal gerunds (25), as already discussed in section 1.1. In this respect, TP-defective gerunds (with PRO subjects) are identical in tense specification – that is, [–Tense] – to what Martin (1996, 2001) takes to be the tense specification of raising and ECM infinitives, under the view that the time/interval denoted by a [–Tense] non-finite clause must actually coincide with the matrix event-time.

(26) * Philip avoided last night [PRO driving on the freeway this morning].

In fact, a restriction in terms of temporal specification also exists for control *to*-infinitives that are complements to restructuring predicates (see Wurmbrand 1998). However, notice that this restriction sometimes is not as strong as it is with a corresponding TP-defective gerund. For instance, a predicate like *try* that usually requires a partial overlap between its own event-time and the event-time of the embedded *to*-infinitive might not allow for examples like (27b). However, (27b) is still possible with a specific reading in which 'Jim took some step yesterday to be able to take a flight today at Dulles'. The corresponding gerund (27c) is significantly degraded under any reading, supporting the argument that TP-defective gerunds do not allow for any independence of tense specification between the matrix and the embedded predicate, contrary to the corresponding *to*-infinitive examples.

(27) a. Jim decided yesterday [to take a flight today at Dulles].
b. # Jim tried yesterday [to take a flight today at Dulles].
c. *? Jim tried yesterday [taking a flight today at Dulles].

The facts above support Stowell's (1982) argument that gerunds can be [–Tense], different from control infinitives (although gerunds such as clausal gerunds are [+tense], as I showed in chapter 1). This is clearly so with TP-defective gerunds, which do not allow for any kind of tense specification distinct from the matrix predicate. Combined with the need for these gerunds to assign an external θ-role, both the weak and strong accounts considered here (lack of a TP or occurrence of a [–Tense] head) argue against versions of the null Case theory that postulate the existence of a PRO whose null Case must be checked in [Spec, TP]. This adds to the empirical problems for a null Case approach to Control that were summarized and discussed in the Introduction (section 2), and in chapter 1 (section 3.1).

Further problems of a more conceptual nature arise with respect to the null Case theory or other theories that rely on the existence of PRO. First, besides

the need to account for the distribution of PRO, extra operations are necessary to identify the antecedent of obligatory control PRO (OC PRO). Second, these theories need specific mechanisms to distinguish OC PRO from non-obligatory control PRO. Finally, certain questions arise with respect to how control relates to Case theory. One may wonder why it is that Null Case is restricted to just one type of null argument (PRO), not even extending to *pro*, a null argument that can co-exist with PRO in many languages other than English, and in certain languages can correspond to both null subjects and null objects. PRO, on the other hand, can only occur in [Spec, TP], where it gets null Case, whereas other overt and non-overt (*pro*) arguments can check different types of structural Case (accusative, nominative) depending on the position where they occur.[3] Such facts indicate that null Case and PRO are extremely specific devices in the grammar, and their existence may be at odds with the goals of P&P and especially the Minimalist Program to devise overarching principles that account for a wide range of phenomena at the same time, without overlapping unnecessarily with other mechanisms of the grammar. In section 4 I apply to gerunds a theory that derives PRO as the result of DP-movement (see also Hornstein 1999, 2001), circumventing most of these conceptual problems and the empirical problems that gerunds pose for the null Case theory. In the next section I address other empirical problems for the null Case approach to Control.

3.1 Problems for a Tense/event binding approach to Null Case

In the analysis of gerunds above I focused on the connection between a [±Tense] specification for non-finite domains in the sense of Stowell (1982) and the null Case theory of Martin (1996, 2001). In Martin's theory only [+Tense, –Finite] T can assign null Case to PRO. According to Stowell, only control infinitives, but not raising and ECM infinitivals, are specified as [+Tense]. For Martin, this explains why only control infinitivals should be able to assign null Case to PRO. As I argued in this and previous chapters, this proposal is undermined by many mismatches in the correlation between tense distinctions and control/non-control domains (see Introduction, section 2 (15)).

Martin, however, follows Enç (1990) and explores a further development in his analysis. Enç argues that eventive predicates project a temporal argument (or variable, in Martin 2001: 150) that needs to be bound by tense or some other operator in order to denote an individuated event. Other possible binders for this temporal argument/variable are modals, aspectual *be* and *have* and quantificational adverbs of frequency. In the absence of the appropriate

[3] One aspect that may weaken this argument is that overt pronominal forms (*he, him*) are restricted with respect to the Case positions where they can occur.

operator, only state denoting or habitual predicates should be possible. If ECM and raising infinitival complements do not have tense features, the ungrammaticality of (28) is explained, because the embedded eventive predicate (which denotes an individuated event) contains an event variable that requires tense or some other (temporal) operator to be bound, which in Martin's terms is not available in these domains (Martin 1996: 59 (82)):

(28) a. * Everyone believed [Rebecca to win the game right then].
b. * The doctor showed [Bill to take the wrong medicine at that exact time].
c. * The defendant seemed to the DA [*t* to conspire against the government at that exact time].

In this respect, the grammaticality of (29) is explained by the fact that the embedded infinitive does not denote an individuated event, and thus does not require an event binder as the examples in (28) do.

(29) a. John believed [Bill to be nice].
b. John seemed [*t* to play tennis well].

Given this account, Martin proposes that the ungrammaticality of an example like (30) is due to the fact that PRO cannot be licensed as the embedded subject, because the infinitival complement of *believe* does not carry an event binder, and thus is not specified as [+Tense], a requirement in his account for a PRO subject to be licensed.

(30) * John believed [PRO to be nice].

Let me consider the behavior of gerunds with respect to Martin's (1996, 2001) revised analysis in terms of event binders. Interestingly, gerunds also present problems for that revised analysis, similar to what I have already shown in the case of the approach restricted to a [± Tense] specification. In Martin's terms, gerunds that license a null subject identified as PRO should not need an overt event binder in order to be able to denote an individuated event. At first one might consider that to be the case in examples like (31). Crucially, in these examples the embedded gerund can be interpreted as an event that took place at a specific time in the past (denoting an individuated event), which can also be shown by the fact that time adverbs such as *yesterday* and *last week* can be added to the embedded clause.

(31) a. Mark hated/ loved talking to Mary.
b. Paul preferred dreaming of sirens.

This would support Martin's analysis, given that gerunds, which license null subjects interpreted as PRO, would then carry a [+Tense] specification by virtue of their possibility to bind an individuated event without the need for an overt event binder. However, as I show below, contrary to the prediction made by Martin's analysis, this individuated event interpretation is possible in the examples above not because of a property internal to the embedded gerund, but because of the past tense used in the matrix clause. This has connections with the discussion about the tense dependence of most (TP-defective) gerunds with respect to the matrix clause, which I analyzed in detail in section 1. Consider the examples in (32). Different from (31), in these examples the embedded gerund cannot denote an individuated event, but can only be interpreted with a habitual reading. Given Martin's approach, one cannot explain why these gerunds that license a control PRO subject cannot have an individuated event interpretation in the absence of a modal/temporal operator.

(32) a. Mark hates/loves talking to Mary.
b. Paul prefers dreaming of sirens.

First, one might take this to be related to the restrictions associated with the use of the present tense in English. However, examples with verbs that take clausal gerunds as in (33) show that the use of the present tense in the matrix clause does not prevent the embedded gerund from having an individuated event interpretation, even in the absence of overt event operators. Different from (32), the embedded (clausal) gerunds in these examples can have an individuated event interpretation even though the matrix clause is in the present tense, as indicated in (34):

(33) a. I remember dreaming of sirens.
b. I count on talking to Mary.

(34) a. I remember dreaming of sirens after taking five aspirins before bedtime yesterday.
b. I count on talking to Mary tomorrow.

Incidentally, an additional aspect that the data I analyze here indicate is that the event binding property of certain embedded gerunds may in fact be dictated by the tense properties of the matrix clause (but see e.g. Rooryck 2000 for a GB proposal that may make different predictions). Consider again the gerunds as complements to psychological verbs such as *hate/love*, now embedded under a matrix future tense (35). In this case again, the individuated event interpretation appears in the embedded gerund, similar to (31) but contrary to

(32). However, given that in (32) the embedded gerund maintains its control properties identically to (31) and (33)-(35), it is unexpected given Martin's theory that the individuated event interpretation is only possible in the latter cases.

(35) Bill will hate/love being evicted at the time he pays the rent.

Therefore, these facts indicate important problems for a tense/event-binding null Case theory of control. Even though the gerunds discussed so far (CGs and TP-defective gerunds) license null subjects with the properties associated with PRO, it is not the case that they consistently display the properties necessary to bind individuated events and to carry a [+Tense] specification, which are required in Martin's (1996, 2001) proposal (also adopted by Bošković 1997) in order to license the null Case assigned to PRO.

Given these and other conceptual problems I analyzed before (see e.g. chapter 1, section 3.1), in the next section I extend to TP-defective gerunds the same approach to control as the result of NP-movement which I applied to clausal gerunds in chapter 1.

4 Deriving control and lack of overt subjects in TP-defective gerunds

I return now to the two other properties of TP-defective gerunds. First, although TP-defective gerunds have an embedded external argument, why is it that they only allow a null subject (36) (PRO in the null Case theory), contrary to clausal gerunds, which allow either an overt or a non-overt subject (37)?

(36) a. John tried [PRO swimming].
b. * I tried [John swimming].

(37) a. I prefer [PRO staying at home].
b. I prefer [Mary staying at home].

Second, the null subject of TP-defective gerunds can have only obligatory-control properties, differently from clausal gerunds (see chapter 1). For instance, the null subject of a TP-defective gerund requires a local c–commanding antecedent (38a) and it does not allow for split antecedents (38b). Furthermore, the interpretation of the ellipsis material in an example like (38c) only allows for a sloppy reading under ellipsis.

(38) a. * $Paul_i$ thinks that Mary tried PRO_i shaving himself.
b. * $Bill_i$ knew that $Mary_j$ hated PRO_{i+j} hurting themselves/each other. [4]
c. * $John_i$ tried PRO_i leaving early and Bill did too (= Bill leaving early).

In order to account for the facts above I adopt a movement analysis of control. The subject of the matrix clause in (39) is first merged in the external θ-role position of the TP-defective gerund, but it cannot be Case marked within the embedded clause. (39) illustrates the strong hypothesis, in which the TP-defective gerund does not project a TP at all, so it has no position where the embedded subject could be Case marked. Under the weak hypothesis discussed before (40), TP-defective gerunds project a [Spec, TP] where Case of the external argument cannot be valued. Under this hypothesis, and given the adoption of the approach to Case valuation in Chomsky (2000, 2001), the embedded gerund T head does not have a full set of ϕ-features that can value the Case of the embedded subject.[5]

(39) $[_{CP}\,[_{TP}$ Mary $[_{vP}$ ~~Mary~~ $[_{VP}$ tried $[_{vP}$ ~~Mary~~ $[_{VP}$ calling $[_{DP}$ her friends]]…

(40) $[_{CP}\,[_{TP}$ Mary $[_{vP}$ ~~Mary~~ $[_{VP}$ tried $[_{TP}$ ~~Mary~~ $[_{vP}$ ~~Mary~~ $[_{VP}$ calling $[_{DP}$ her friends]]…

Given the possibility of multiple θ-marking of an individual DP, as proposed by Bošković 1994, Lasnik 1995, among others, the embedded DP-

[4] As in the split antecedent test with clausal gerunds in chapter 1, here the antecedents appear in different clauses. Since the gerund itself becomes the object of the clause, there is only one argument position in the clause that can be taken by another argument. Given this, the appropriate test with split antecedents and gerunds requires the two antecedents to appear in different clauses. Notice that TP-defective gerunds also do not occur as object control complements. In this respect, they behave differently from gerunds as perception verb complements, which are cases I analyze as object control; see section 6). Other gerund structures that would be closely related to object control fall in fact in the class of gerunds that are complements to prepositions:

(i) Mary tricked Bill into believing that the danger was over.

[5] Notice that TP-defective gerunds raise additional problems for the approach to default Case (Schütze 1997, 2001) discussed in chapter 1, section 5. If default Case were an available option in the Spec, TP of clausal gerunds, it would be mysterious why the same option could not be available for TP-defective gerunds. This is especially the case under the weak hypothesis I consider in the text, by which both CGs and TP-defective gerunds project a TP.

subject (*Mary*) can move to the matrix clause in order to check its Case.[6] It moves through the matrix external θ-role position where it is assigned a second θ-role and lands in the matrix [Spec, TP] where it finally checks its Case and freezes in place. The fact that the different argument positions are occupied by copies of the same DP explains why the embedded subject position can only have an obligatory control interpretation. Although I gloss over some details in this chapter, this approach relates Case marking to ϕ-feature agreement (Chomsky 2000, 2001), and not to Tense, contrary to what is assumed in the null Case theory.

This approach also explains why TP-defective gerunds do not license an embedded overt subject (41). Since the embedded clause does not have a Case position for the embedded external argument, the derivation crashes because *John* didn't have its Case checked.

(41) * I tried [John leaving early].

Notice that in this respect the clausal gerunds (CGs) analyzed in chapter 1 behave differently from TP-defective gerunds in that they allow either an overt subject or a null subject (42). In chapter 1 I proposed a movement analysis for this optionality. According to this analysis, the distinction between CGs and TP-defective gerunds relies crucially on the properties of the head of the clause, which I argued to be T in the case of CGs.

(42) a. Mary favored PRO/Bill taking care of her land.
b. Susan worried about PRO/John being late for dinner.

Turning back to TP-defective gerunds, it is relevant to discuss a set of cases ((43a)-(46a)) that neither consistently contrast nor pattern with the relevant CG examples analyzed in chapter 1 and repeated below (43b)-(46b).

(43) a. * John swimming was tried.
b. John swimming was preferred.

(44) a. * I tried John swimming. (36b).
b. I prefer John swimming.

[6] Bošković and Takahashi 1998 also argue in favor of the possibility of movement into θ–positions.

(45) a. * John was tried ~~John~~ swimming.

b. * John was preferred ~~John~~ swimming.

(46) a. John tried ~~John~~ swimming. (36a)
b. John preferred ~~John~~ swimming.

At the beginning of this section I proposed an analysis of TP-defective gerunds that explored the strong hypothesis that TP-defective gerunds do not project a TP, and accounted for the impossibility of an overt subject in TP-defective examples such as (44a) and (46a) (the corresponding CG examples were analyzed in detail in chapter 1). However, the pairs in (45) and (46) indicate that at least in some respects TP-defective gerunds pattern with CGs. One possible way to capture that similarity is to reconsider the weak hypothesis about the status of TP-defective gerunds, showing that they are structurally more similar to CGs than it may appear at first. Consider the hypothesis that both TP-defective gerunds and CGs have a Case feature that needs to be checked (extending to TP-defective gerunds the hypothesis that was developed for CGs in chapter 1). That would explain why not only CGs but also TP-defective gerunds cannot occur as complements of passive verbs in cases such as (45).

However, the alternative analyses of TP-defective gerunds considered in (39) and (40) need to be further refined in order to be able rule out the ungrammatical TP-defective gerund in (43a) (and to explain why the TP-defective gerunds in (43a) and (44a) behave differently from the CGs in (43b) and (44b), respectively). There are two alternative ways of doing this. The first one, under the strong hypothesis, is that although the head of the TP-defective gerund (*v*P in the representation in (39)) does have a Case feature that needs to be checked, it does not project a TP,[7] preventing the embedded subject DP in (43a) and (44a) from having its Case checked inside the embedded TP-defective gerund, contrary to what happens to the clausal gerunds in (43b) and

[7] Notice that for this alternative to be possible the Case feature of the TP-defective gerund would have to be assigned to a lexical head (other than T) that does not usually carry Case, extending what was proposed for the T head of CGs. Under the strong hypothesis considered here (i.e. TP-defective gerunds only project a vP) the Case feature would have to be proposed for a v-head of the T-less TP-defective gerund. Given this problem, cases like (44a) and (45a) make the strong hypothesis more complex and the weak hypothesis more attractive in this respect.

(44b), as I proposed in chapter 1.The second alternative is to have TP-defective gerunds project a TP similar to clausal gerunds (the weak hypothesis), as shown in (40). In this case, their TP would not be able to check the Case of a subject DP. Under this option, given the Case-agreement system in Chomsky (2000, 2001), the TP-defective T would not have the ϕ-features necessary to enter into Match/Agree with a subject DP, preventing it from checking the Case of that subject DP. Furthermore, either alternative can account for the ungrammaticality of (45a). Given that both the TP-defective gerund and the subject DP require Case, the derivation crashes because the matrix clause T can check Case of only one of them (in this instance *John)*.

In other words, TP-defective gerunds cannot be entirely collapsed with CGs, given the contrastive pairs in (43) and (44). Interestingly, the corresponding CGs in (43b) and (44b) are exactly the ones whose derivation involved Case checking/valuation of the embedded subject in two steps: the head of the CG had to have its own Case feature checked before it could check the Case feature of its own embedded subject. This two-step mechanism of Case checking/valuation has some similarity to the two-step Case checking proposal in Watanabe 1993, and to the notion of Case transmission or Case percolation proposed in GB (see, for instance, Ortiz de Urbina 1989). This process of Case checking in two steps is then expected not to be available for TP-defective gerunds, given the ungrammaticality of (43a) and (44a). In sum, like CGs, TP-defective gerunds may have a Case feature that needs to be checked, but they are unable to Case mark an embedded subject in the two-step way which I proposed in detail for CGs in chapter 1. This analysis explains a contrast that is emphasized in the course of this chapter: only CGs, but not TP-defective gerunds, can check/value Case of an overt subject. After all, the impossibility of Case transmission for TP-defective gerunds should be related to the deficiency of their TP properties, as shown earlier by their impossibility of carrying independent temporal specification or perfective morphology, contrary to CGs.[8] Given that T is missing or defective in TP-defective gerunds, Case checking/valuation of an overt subject in the embedded TP-defective gerund cannot apply.

[8] I further elaborate on the relationship between tense and agreement defectiveness and Case checking/valuation in chapter 3, where I review several related proposals made for other languages (Terzi (1997), Mensching (2000), Landau (2004), and Kapetangianni & Seely (2003).

5 Properties of gerunds as complements of perception verbs

In this section I turn to the behavior of gerund complements of perception verbs (henceforth PVC). Some properties of gerunds as PVCs indicate that they are structurally different from CGs (see also Akmajian 1977). I argue that these complements are even more structurally defective than CGs (especially under the weak hypothesis that TP-defective gerunds project a TP, as considered in earlier sections) and should be analyzed as bare *v*Ps. This is supported by the properties below. I leave as an open question whether PVC gerunds project simply as *v*Ps or display an aspectual projection above *v*P. Notice that many of these properties are shared by bare infinitives, which supports the idea that both types of constructions have closely related structures:

i. Like CGs, PVCs never contain any overt complementizer (*that*, *for-to*).

ii. PVCs do not accept modals nor perfective *have–en* (47a) although they can occur in the passivized form (47b). CGs, on the other hand, accept both perfective morphology (47c) and passives.

(47) a. * I heard Francis having talked to Silvia.
b. Ana saw Silvia being kissed by Paul.
c. Mark regrets Susan having moved to Chicago.

iii. PVCs allow their subject to raise to the subject of matrix passive verbs (48b), differently from CGs (49b), which indicates that PVCs do not need to occur in a Case-marked position.

(48) a. Mary saw Paul leaving the house.
b. Paul was seen leaving the house.

(49) a. Mary favored Paul taking care of the house.
b. * John was favored taking care of the house.

iv. PVCs do not allow for null subjects as CGs do:

(50) a. * I heard talking on the phone. (=I heard myself talking on the phone).
b. I like talking on the phone.

v. PVCs do not allow a pure expletive as their subject, contrary to CGs, which indicates that they do not have an EPP requirement:

(51) a. * Bill saw there being many people at the party.
b. He counts on there being many people in the harbor.

The facts above indicate on one hand that gerund PVCs are structurally more defective than CGs, and on the other that they do not carry any of the special properties associated with CGs and discussed before. The fact that PVC gerunds do not display such special properties is accounted for if they do not project up to TP. This further supports the derivational account I proposed for CGs in chapter 1, which relies on the special status of the CG clausal head (T^0).

6 TP-defective Gerunds vs. gerunds as complements of perception verbs

Consider now how TP-defective gerunds relate to complements of perception verbs. PVCs lack tense specification the same way as TP-defective gerunds do (52).

(52) a. * This morning Francis will see Bill leaving tonight.
b. * This morning Francis will try leaving tonight.

As I have shown in section 1, TP-defective gerunds also block perfective morphology and *there* expletives (53), exactly like PVCs.

(53) a. * I tried having talked to Mary.
b. * Tim tried there being many men in the room.

This similar behavior of TP-defective gerunds and PVC gerunds supports the view that these two types of gerunds share some TP-defective properties. However, two other facts also show that they are structurally different. First, PVCs license non-expletive overt subjects under what appears to be ECM (54a). This ECM behavior is confirmed by the fact that the embedded subject DP may raise to the subject position of a matrix passive verb (54b). Neither strategy is available for TP-defective gerunds (55), a fact for which I proposed an explanation in section 4.

(54) a. Mary saw Paul leaving the house.
b. Paul was seen leaving the house.

(55) a. * Mary tried Paul leaving the house.
b. * Paul was tried leaving the house.

In addition, the behavior of PVC gerunds raises important questions for the analysis of control. First, one may raise the question whether PVC gerunds should in fact be treated as cases of object control, instead of ECM complements. As possible evidence for this, voice transparency does not seem to hold between the PVC examples in (56), in that one may see only the doctor in (56a), but not Paul. The opposite holds of (56b). If so, these cases are similar to object control cases as in (57), in which voice transparency is absent (that is, the doctor is the patient/theme of *forced* in (57a), but not in (57b).

(56) a. I heard/saw the doctor examining Paul.
b. I heard/saw Paul being examined by the doctor.

(57) a. I forced the doctor to examine Paul.
b. I forced Paul to be examined by the doctor.

Under a movement analysis of control, if it is the case that PVC gerunds are in fact instances of object control, they would still be instances in which the embedded gerund cannot Case mark its DP subject, which then needs to raise to the matrix clause in order to be Case marked. However, from the perspective of the null Case analysis of control, problems would arise if PVC gerunds were treated as object control. If it is indeed the case that they do not project a TP, as I argue above, then they have no case position where PRO could be assigned null Case, under Martin's (1996, 2001) approach. In addition, independently of their structural analysis, PVC gerunds display a [−tense] interpretation, in that they cannot represent an event that is temporally independent from the perception event in the matrix clause (52). This is even more puzzling under the tense/event binding approach to control, considering that PVC gerunds are in most cases [+eventive], and indicate individuated events, despite the fact that they are systematically [−tense]. Notice that they allow an eventive interpretation without the need of any temporal operators, as in (58). In both respects, PVC gerunds are similar to TP-defective gerunds, with the difference that they would instantiate object control.

(58) Frank saw Sue breaking the vase.

As I showed in chapter 1, CGs also license overt subjects, not through ECM but through a process of Case checking in two steps.. Since neither ECM nor this two-step Case checking is available for TP-defective gerunds, they cannot license overt subjects. The special status of TP-defective gerunds in this respect is related to the fact that although they share certain properties either

with CGs or with PVC gerunds, they are neither as structurally defective as PVC gerunds (which I analyze as bare *v*Ps) nor as complex as CGs.

7 Conclusion

This chapter has focused on gerunds that appear to be more structurally defective than the clausal gerunds analyzed in chapter 1: complements of perception verbs and a class of TP-defective gerunds that appear to share properties either with the clausal gerunds or with complements of perception verbs. Most of the similarities and contrasts discussed here hinge on the level of structural complexity each of these gerunds displays.

The facts I analyzed here also allow for an evaluation of recent theories of control. The absence of a TP projection in certain gerunds challenges null Case theories of Control, in which null Case is checked in [Spec, TP]. Furthermore, the lack of a tense specification in some gerunds presents specific problems for versions of a null Case theory of control that assume [+Tense] checks null Case. I have also presented evidence that gerunds do not display a uniform behavior with respect to the possibility of licensing individuated events, contrary to what would be expected in a tense/event-binding approach to control. An analysis of control as the result of A-movement captures the facts above by allowing the θ-marked argument of TP-defective gerunds to be generated in the embedded clause and move to the matrix clause to check its Case.

CHAPTER 3

AGREEMENT, CASE, CONTROL AND MOVEMENT IN INFINITIVES

1 Introduction

In this chapter I analyze the properties of Portuguese infinitives taking into account the same empirical perspective considered for the English clausal gerunds in chapter 1: the licensing of null and overt subjects. Portuguese infinitives are especially relevant in the context of this book because they behave in ways similar to English clausal gerunds, but unlike the latter and unlike non-finite constructions in many languages, they may display overt morphological marking for person and number agreement.

Section 2 provides evidence that non-inflected infinitives display interpretive properties of obligatory control (OC) and inflected infinitives show non-obligatory control (NOC) properties. In section 3 I argue in favor of an A-movement analysis of different kinds of OC structures in Portuguese: control by the matrix subject, control by the object and adjunct control. One important advantage of this analysis is that it accounts straightforwardly for the morphological split in the inflectional morphology of infinitives and its syntactic effect in different dialects of Portuguese, offering a principled explanation for the control interpretive contrasts discussed in section 2. In section 4 I address the case of non-overt subjects of inflected infinitives, arguing that what licenses these (NOC) subjects are the ϕ-features (agreement features) that map into the inflectional morphology of the inflected infinitives. Section 5 provides independent evidence from binding to support the movement approach defended here. In section 6 I briefly address cases of arbitrary control PRO, distinguishing them from the OC PRO cases analyzed here as the result of A-movement. Section 7 addresses the special case of *believe*-type verbs in Brazilian Portuguese, and related cases of propositional verb complements in English, which raise problems for the null Case approach to control. In section 8 I review briefly several alternative approaches to control and to infinitives in other Romance languages and in Greek.

In the following sections I consider primarily data from three dialects of Portuguese: European Portuguese (**EP**), Standard Brazilian Portuguese (**StdBP**, which is represented by the language used in the media) and Colloquial Brazilian Portuguese (**ColBP**).[1, 2]

2 Control in dialects with inflected infinitives

Infinitives in Portuguese come in two varieties: non-inflected or inflected for person/number. Standard Brazilian Portuguese in general displays the person/number paradigm for inflected infinitives shown in (1), where the plural forms display overt inflectional morphology for person/number:

(1) StdBP

SG	1 *(eu) fala-r*	'(I) speak-INF-**ø**'[3]
	2 *(você) fala-r*	'(you) speak-INF-**ø**'
	3 *(ele/ela) fala-r*	'(he/she) speak-INF-**ø**'
PL	1 *(nós) fala-r-**mos***	'(we) speak-INF-**1PL**'
	2 *(vocês) fala-r-**em***	'(you-PL) speak-INF-**3PL**'
	3 *(eles/elas) fala-r-**em***	'(they) speak-INF-**3PL**'

EP differs from the paradigm in (1) only by the fact that it has specific inflected forms for 2nd person singular and 2nd person plural, given the possible use of different pronouns with those forms (see details in chapter 4). Since only 1st and 3rd person plural verb forms display the same overt morphology for person/number in both EP and StdBP, I will restrict my examples of inflected infinitives to those forms.

How do Portuguese infinitives behave with respect to control? I show below that only non-inflected infinitives consistently show properties of obligatory control (OC). This can be seen when one applies to them the diagnostics for

[1] Parts of this chapter appeared in an earlier version in Pires 2001b, and have now been modified and extended. I thank John Benjamins for allowing me to include that material here.

[2] When I use BP alone I refer to both dialects of Brazilian Portuguese discussed here. Quicoli (1996) refers to an "official dialect" of Brazilian Portuguese, and claims that many Brazilians are native speakers of this dialect, whereas many others are not, although they end up learning it at school, with varying degrees of success. To my knowledge, there are no systematic studies of pre-school age children to establish to what degree Standard Brazilian Portuguese is acquired or learned. At any rate, it is possible to find speakers that have intuitions about its properties which do not always match the properties described in school grammars, and I rely on those judgments throughout this book.

[3] INF stands for the infinitive morpheme, followed in the plural forms by the overt inflection for person + number (1PL/3PL).

obligatory control I applied to English clausal gerunds in chapter 1 (diagnostics based on Lebeaux 1985 and used for control in Hornstein 1999) as follows.

2.1 Need for a local c-commanding antecedent

First, consider the need for a local c-commanding antecedent in examples (2a) and (3a). PRO in the embedded infinitive clauses in (2a) from EP and (3a) from StdBP must have a local antecedent in the matrix clause. That antecedent must also c-command PRO. So, both in (2a) and (3a) the entire bracketed DP in the matrix clause is the only possible antecedent for PRO in the embedded clause.

(2) a. [Os pais do $\text{Paulo}_j]_k$ lamentam $\text{PRO}_{*j/\,k}$ chegar tarde.(EP)
[The parents of-the $\text{Paulo}_j]_k$ regret $\text{PRO}_{*j/\,k}$ arrive- **INF** late.
'[Paulo_j's parents]$_k$ regret $\text{PRO}_{*j/\,k}$ to arrive late.'

b. [Os nossos_j pais] lamentam *pro*$_j$ chegarmos tarde.
[The our_j parents] regret *pro*$_j$ arrive-**INF-1PL** late.
'Our parents regret our arriving late.'

(3) a. [Nossos_j amigos]$_k$ detestam $\text{PRO}_{*j/\,k}$ perder as coisas deles. (StdBP)
[Our_j friends]$_k$ hate $\text{PRO}_{*j/\,k}$ lose- **INF** the things of they.
'Our friends hate losing their belongings.'

b. [Nossos_j amigos] detestam *pro*$_j$ perdermos as coisas deles.
[Our_j friends] hate *pro*$_j$ lose- **INF -1PL** the things of-they.
'Our friends hate when we lose their belongings.'

However, a local c-commanding antecedent is not needed for the subject of the embedded infinitives in (2b) and (3b), which are inflected. With inflected infinitives, the null subject *pro* can also be disjoint in reference from any DP in the sentence, especially with 1st person plural inflection. This and the other contrasts below show that inflected infinitives display NOC properties, whereas OC properties are restricted to non-inflected infinitives.

2.2 Sloppy reading under ellipsis

The ellipsis material in the non-inflected infinitive cases in (4a) and (5a) (indicated between parentheses) only allows a sloppy reading. For instance, when the ellipsis material (*regrets to have lost*) is interpreted in (4a) it can only mean that *Silvia herself regrets her own losing*. This contrasts directly with examples (4b) and (5b). Take (4b), where the second conjunct must be interpreted as *Silvia regrets our losing*, corresponding to a strict interpretation of the ellipsis site.

(4) a. O Paulo$_j$ lamenta PRO$_{j/*k}$ ter perdido e a Silvia também.(= Silvia lamenta ter perdido) (EP)
The Paulo$_j$ regrets PRO$_{j/*k}$ have-INF lost and the Silvia too. (= Silvia regrets to have lost)
'Paulo$_j$ regrets PRO$_{j/*k}$ to have- INF lost and Silvia does too. (= Silvia regrets to have lost) '

b. O Paulo$_j$ lamenta *pro*$_k$ termos perdido e a Silvia também. (= lamenta nós termos perdido) (EP)
The Paulo$_j$ regrets *pro*$_k$ have-INF-1PL lost and the Silvia too (=Silvia regrets our losing)
'Paulo regrets our losing and Silvia does too. (=Silvia regrets our losing).'

(5) a. O Pedro$_j$ aceita PRO$_{j/*k}$ votar todas as propostas hoje e a Ana também. (=Ana aceita votar todas as propostas hoje) (StdBP).
The Pedro$_j$ accepts PRO$_{j/*k}$ vote-INF all the proposals today and the Ana too. (=Ana accepts to vote all the proposals today)
'Pedro accepts to vote all the proposals today and Ana does too. (=Ana accepts to vote all the proposals today).'

b. O Pedro$_j$ aceita *pro*$_k$ votarmos todas as propostas hoje e a Ana também. (=Ana aceita que nós votemos todas as propostas hoje). (StdBP)
The Pedro$_j$ accepts *pro*$_k$ vote-INF-1PL all the proposals today and the Ana too. (=Ana accepts that we vote all the proposals today)
'Pedro accepts that we vote all the proposals today and Ana does too. (=Ana accepts that we vote all the proposals today).'

Finally, the next section presents a third test distinguishing the OC properties of non-inflected infinitives from the NOC properties.

2.3 Impossibility of split antecedents

Notice how the two types of infinitive behave with respect to the possibility of split antecedents for the embedded clause null subject. PRO in the non-inflected infinitive in (6a) rejects an interpretation in which both *I* and *a Maria* form a set that behaves as the antecedent for PRO. (6b) is clearly distinct in that respect. Here *pro* is co-referential with a set of elements that can include both *I* and *a Maria*.

(6) a. Eu_j convenci a $Maria_k$ $PRO_{k/*j+k}$ a viajar com o Paulo. (EP & STBP/some informants)
I_j convinced the $Maria_k$ $PRO_{k/*j+k}$ to travel-INF with the Paulo.
'I_j convinced $Maria_k$ $PRO_{k/*j+k}$ to travel with Paulo.'

b. Eu_j convenci a $Maria_k$ pro_{j+k} a viajarmos com o Paulo.
I_j convinced the $Maria_k$ pro_{j+k} to travel-INF-1PL with the Paulo.
'I_j convinced $Maria_k$ that we_{j+k} (should) travel with Paulo.'

None of the properties discussed above holds for the subject of an embedded inflected infinitive. However, they must apply to non-inflected infinitives.

Hornstein (1999, 2003) used these different properties as arguments for an analysis of control in English as the result of DP movement. Take for instance the impossibility of split antecedents. If PRO is the result of DP movement from the embedded clause to an appropriate position in the matrix clause, split antecedents are not possible, because a DP cannot move to two different positions at the same time. In the next section, I extend to Portuguese an analysis of obligatory control as the result of A-movement.

3 Null subjects of uninflected infinitives as the result of DP-movement

In the analysis below I follow one aspect of the proposals by Bošković (1994), Lasnik (1995), Bošković and Takahashi (1998) and Hornstein (1999), and assume that multiple θ-roles can be discharged on DPs, as the result of movement, contra Chomsky (1995a, 2000, 2001). If one denies the existence of a D-structure level (Chomsky 1993, 1995a), there seems to be no strong argument against the possibility of having multiple thematic roles assigned to the same DP in the course of the derivation. As in chapter 1, I put aside here the question whether θ-roles should be treated as features, even though the latter is consistent with the idea that movement is motivated by feature checking/valuation. What is crucial is that either θ-role checking or assignment is sufficient to motivate movement.[4]

[4] This is clearly so under a conception of movement that requires Greed, if the probe (the θ-assigning head) is responsible for triggering the movement of the DP that will be assigned a θ-role. One important point is that the notion of activation that applies in the probe-goal system of Chomsky 2000, 2001 can be only partially extended to multiple θ-assignment, given that after a DP is assigned a first θ-role, it does not need to receive further θ-roles to satisfy its thematic properties.

I follow the approach to feature checking proposed in Chomsky (2000, 2001).[5] A T carries a set of [–interpretable] ϕ-features that needs to be checked by an agreeing DP that the T c-commands. Only a T that carries a complete set of ϕ-features (i.e. which is ϕ-complete) can check the Case of a DP. Finally, any T carries a ([–interpretable]) EPP feature that can be checked by the categorial feature of a DP. Therefore, a DP is allowed to check the EPP and the ϕ-features (that is, at least person and number) of more than one T. That is consistent with Chomsky's (2001) view that an embedded (non-inflected) infinitive has a defective head T, that is, it doesn't have a complete ϕ-set, although it carries a [–interpretable] EPP-feature.[6] Therefore, this defective T is unable to determine Case-agreement. Since it has an EPP feature, a DP can merge in its Spec, but it cannot delete the [–interpretable] Case feature of the DP.

3.1 Subject control

Consider a case such as (7) where only a non-inflected infinitive is licensed in Portuguese:

(7) [$_{TP2}$Nós$_j$ [$_{VP2}$ ~~nós~~ conseguimos [$_{TP1}$ ~~nós~~$_{j/*k}$ [$_{VP1}$ ~~nós~~ sair]]]].[7]
[$_{TP2}$We$_j$ [$_{VP2}$ ~~we~~ managed [$_{TP1}$ ~~we~~$_{j/*k}$ [$_{VP1}$ ~~we~~ leave]]]].
'We managed to leave.'

The subject of the matrix clause in (7) is first merged in the embedded clause, where it is assigned a θ-role in VP1 and the EPP-feature in the Spec of TP1, but cannot have its Case checked/valued, because [Spec, TP] of a non-inflected infinitive clause is not a Case-checking position. Therefore, the *subject* nós 'we' must raise to the matrix clause where it is assigned a θ-role in VP2, the EPP-feature of T2 and its own Case feature, after which it becomes inactive for further feature checking/valuation involving Case and agreement. This also prevents it from raising to a higher position after it lands in [Spec,

[5] The analysis adopted in this chapter is in principle compatible with the valuation approach adopted in chapters 1 and 2. However, in what follows I make reference primarily to a checking approach.

[6] However, see chapter 1 for references to alternative proposal that attempt to eliminate appeal to the EPP.

[7] I represent Portuguese infinitives as TPs to simplify the notation. However, they may in fact be CPs, although that is not crucial here. I do not address here the optional fronting of the verb and facts about wh-movement discussed in Raposo (1987), who argues for a distinction between TP and CP for inflected infinitives in EP. Galves (1991) proposes that they are always CPs.

TP2]. Once all the features have been checked the lower copies are deleted and the derivation converges.[8]

3.2 Object control

In this section I derive a case of object control assuming the movement analysis used above. In example (8) *a Maria* is assigned a θ-role in the embedded VP and then moves to [Spec, TP] of the embedded clause, where it checks an EPP feature. According to Hornstein (1999), this kind of movement violates the principle *Procrastinate* (according to which movement should apply as late as possible), since *I*, which is still in the numeration, could have been inserted in [Spec, TP] of the embedded clause. *A Maria* then moves to the VP of the matrix clause, which is another violation of *Procrastinate*, given that *I* is still in the numeration. Both violations are possible because otherwise the derivation would not converge.

(8) [$_{TP2}$ Eu convenci a Maria [$_{TP1}$ ~~a Maria~~ a viajar hoje]].
[$_{TP2}$ I convinced the Maria [$_{TP1}$ ~~the Maria~~ to travel-INF today]].
'I convinced Maria to travel today.'

Notice that invoking violations of *Procrastinate* above may not be necessary, if other restrictions come into play.[9] The first violation above holds only if one assumes that an argument in the numeration can first merge in a non-thematic position. However, even if 'first merge' of arguments is restricted to thematic positions, eliminating the first violation of *Procrastinate*, *eu* 'I' can still merge into the object position of *convenci* 'convince', a θ-position, and block object control in the case of the second violation. Let us instead assume that the restriction on 'first merge' does not hold (which would make both illicit merges of *eu* 'I' possible), in order to consider a couple of consequences. If it is correct that Merge is more economical that Move, as stated in the *Merge over Move* principle (see Chomsky 2000:104), the violations described as necessary above still hold, now as the result from *Merge over Move*, and even under the elimination of *Procrastinate*. How to avoid this problem? In one alternative, if one adopts Hornstein (1999), *a Maria* is inserted in the derivation with an accusative Case feature, and *eu* 'I' with a nominative Case feature. This prevents *I* from merging into the accusative Case position of the matrix clause, forcing *a Maria* to move to that position. Nevertheless, if we assume that nominative and accusative Case features are

[8] The derivations represented here assume the existence of copies, but this point is not crucial for the current analysis (see chapter 1, fn. 71 for relevant references).
[9] The existence of *Procrastinate* as an independent principle has been challenged in Chomsky 2001.

specified by ϕ-feature agreement in the course of the derivation (Chomsky 2000, 2001), another explanation is necessary for the violation of *Merge over Move* in (8). However, the same alternative explanation based on a Case distinction can not be extended to account for the first violation of *Procrastinate* or *Merge over Move*.

Given the above, I appeal instead to the Minimal Link Condition to account for both violations. If *eu* 'I' is merged in [Spec, TP] of the embedded clause (satisfying *Merge over Move*), instead of moving *a Maria* from the embedded VP, *eu* 'I' would block the movement of *a Maria* to the matrix clause, given that *I* c-commands *a Maria* and both are c-commanded by the matrix V and T, making *eu* 'I' closer than *a Maria* to either one of the probes. Therefore, the Case of *a Maria* wouldn't be checked and the derivation would crash. This indicates that although principles such as *Procrastinate* and *Merge over Move* play a role in issues involving economy, they may be overruled if necessary for convergence.

3.3 Adjunct control

I present in this section a derivation for a case of adjunct control. In order to adopt a movement analysis of control into adjuncts (see also Hornstein 1999, 2001), it is necessary to start with two different assumptions: movement should be allowed from inside the adjunct to the control position in the matrix clause. However, since movement from adjuncts is not possible after the adjunct has been merged in the main clause (which would yield an island violation), it is necessary to adopt an analysis by which movement of the control DP from inside the adjunct takes place before the adjunct is merged with the matrix clause (that is, at the point movement from inside the adjunct applies, it correspond to movement to a non c-commanding position).

Let us consider the application of this analysis. In a sentence such as (9) below, the adjunct PP *antes de o Pedro sair* 'before Pedro leaving' is built first in the derivation. At the point at which TP1 is built, the main clause starts out as a separate derivation, in a parallel workspace. *A Maria* merges with *called* in VP2. *O Pedro*, which is in the parallel derivation of the non-finite clause, can then move into the matrix external θ-role position (by sidewards movement, see Nunes 1995, 2004, or interarboreal movement, in the terms of Bobaljik & Brown 1997). That is, movement applies between two independent structures that are not yet part of the same syntactic object. Given that, movement is to a position that does not c-command the departure site of movement at the point movement applies. That is possible only because at that point in the derivation the two initial separate syntactic objects (the adjunct clause and the matrix clause) have not yet merged. After moving into the matrix clause, *o Pedro* is assigned the external θ-role of *called* and moves to [Spec, TP2] where it checks the EPP feature and its own Case feature:

(9) [$_{TP2}$ O Pedro [$_{VP2}$ chamou a Maria [$_{PP}$ antes de [$_{TP1}$ ~~o Pedro~~ [$_{VP1}$ ~~o Pedro~~ sair]]]]].
[$_{TP2}$ the Pedro [$_{VP2}$ called the Maria [$_{PP}$ before of [$_{TP1}$ ~~the Pedro~~ [$_{VP1}$ ~~the Pedro~~ leave-INF]]]]].
'Pedro called Maria before leaving.'

Three points need to be explained with respect to the derivation above. First, if *a Maria* had been inserted in [Spec, TP] of the embedded clause instead of moving *o Pedro* to that position, *o Pedro* would have never checked its Case feature, by virtue of the Minimal Link Condition (MLC), similar to what I considered in the previous section. Second, if *o Pedro* moved to the matrix object position instead of merging *a Maria*, there would be a violation of *Merge over Move*, which would hold given that the alternative derivation without this violation is convergent, as shown above. However, moving *o Pedro* by sidewards/interarboreal movement to the external θ-role position of the matrix over *a Maria* does not involve a violation of *Merge over Move*, since both DPs are already in the derivation. Also, the MLC does not play any role in this case. Neither *o Pedro* nor *a Maria* c-command each other before movement of *Pedro* to matrix spec, *v*P applies. Since the MLC and locality can only be measured in terms of c-command, both DPs are equidistant from the target. However, if *a Maria* moved to the external θ-role position, *o Pedro* would never be able to check its Case, yielding a non-convergent derivation. This provides an explanation for why the derivation I propose for (9) is the only possible alternative.

4 Non-overt subjects of inflected infinitives

Inflected infinitives in Portuguese, contrary to uninflected ones, carry a complete ϕ-set. That way, their T can delete the nominative Case feature of a DP, forcing it to freeze in the embedded clause subject position. Consider example (10):

(10) [$_{TP2}$ A Maria$_j$ [$_{VP2}$ ~~a Maria~~ chegou [$_{PP}$ antes de [$_{TP1}$ *pro*$_k$ [$_{VP1}$ ~~*pro*$_k$~~ sairmos]]]]].
[$_{TP2}$ the Maria$_j$ [$_{VP2}$ ~~the Maria~~ arrived [$_{PP}$ before of [$_{TP1}$ *pro*$_k$ [$_{VP1}$ ~~*pro*$_k$~~ leave-INF-1PL]]]]].
'Maria arrived before we left.'

I keep the standard analysis for the null subject of inflected infinitives in Portuguese, by arguing that it is a *pro* (see Raposo 1987 and references

therein). Under this view, in combination with the movement analysis of PRO subjects of non-inflected infinitives I presented in section 3, the morphological distinction between inflected and non-inflected infinitives correlates directly with the contrast between a movement analysis of the control cases, possible only with the non-inflected infinitives, and a non-movement analysis of inflected infinitive cases such as (10).[10] T of an inflected infinitive clause carries a full set of ϕ-features (as indicated by the overt person/number morphology), which can check the Case feature of a *pro* or overt DP occurring in the subject position of the infinitival clause, blocking any further movement (cf. Chomsky 2000, 2001). In (10) *pro* merges in VP1 where it is assigned one θ-role. It then moves to [Spec, TP1], where it checks the EPP-feature in [Spec, TP]. T, which is ϕ-complete in this case, also deletes the Case feature of *pro*. That way, *pro* is frozen in the embedded clause, and the derivation converges.

Now consider (11), which is ungrammatical in EP and StdBP. Since T of a non-inflected infinitive cannot check the Case feature of an overt subject or *pro*, the derivation crashes:

(11) * [$_{TP2}$ Maria$_j$ [$_{VP2}$ chegou [$_{PP}$ antes de [$_{TP1}$nós/*pro*$_k$ [$_{VP}$ sair]]]]].
[$_{TP2}$Maria$_j$ [$_{VP2}$ arrived [$_{PP}$ before of [$_{TP1}$ we/ *pro*$_k$ [$_{VP}$ leave-INF]]]]].
'* Maria arrived before we/he/they to leave.'

Given that T of a non-inflected infinitive does not have a complete set of ϕ-features, Case cannot be checked in the embedded [Spec, TP1], forcing the embedded subject DP to move to the matrix clause to satisfy its Case requirement. However, if the embedded DP subject (*nós* 'we' or *pro*) moved to the matrix clause,[11] the DP *a Maria* would remain in the numeration, that is, it wouldn't enter the derivation although it had already been selected from the lexicon, and the derivation would be cancelled, yielding ungrammaticality. If, on the other hand, *nós* 'we' (or *pro*) did not raise to the matrix clause (allowing *a Maria* to merge in the matrix clause as shown in (11)), *nós* 'we'/*pro* would never have its Case feature checked/valued, and the derivation would crash, also yielding ungrammaticality.

[10] San Martin (1999, 2004) analyzes cases of control in Basque that display a contrast similar to the one in Portuguese, involving a split in terms of Case marking instead of inflection.

[11] This is what happens in (9), which corresponds to a different numeration, in which no additional DP exists beyond the DP subject of the embedded clause, allowing the numeration to be exhausted, as required for the derivation to be convergent.

5 Evidence from binding

In this section, similar to what I proposed for English clausal gerunds in chapter 1, I offer additional empirical support that the distinction between obligatory control in non-inflected infinitives and non-obligatory control in inflected infinitives correlates with distinctions in the binding properties of the two classes of infinitives. In general, I show that in all the cases of OC infinitives (non-inflected ones) the matrix clause behaves as the binding domain for the embedded infinitive, providing additional empirical support for an analysis of control as the result of movement. Consider example (12). The non-inflected infinitive constructions where a null subject with OC properties (analyzed as the result of movement above) is required are also cases where the matrix clause is the appropriate domain for binding an anaphor that occurs in the embedded infinitive clause:

(12) Eles$_j$ aceitaram se$_j$ barbear(*em) sem espelho. (BP)
They$_j$ accepted self$_j$ shave-INF-(*3PL) without mirror.
'They$_j$ managed to shave (themselves$_j$) without a mirror.'

Inflected infinitive clauses as in (13), on the other hand, behave as independent domains for anaphor binding, forcing an anaphor to be bound by *pro* or a lexical DP in the subject position of the embedded clause:

(13) O diretor$_j$ começou a cerimônia antes de nós/*pro*$_k$ nos$_k$ apresentarmos. (StdBP).
The director$_j$ started the celebration before of we/*pro*$_k$ ourselves$_k$ introduce-INF-1PL.
'The director$_j$ started the celebration before we introduced ourselves.'

These facts support the argument that the null subjects with OC properties are the result of movement, if we assume that in the cases where the embedded subject raises to the matrix clause (12) the matrix clause is also the binding domain for an embedded anaphor.[12]

Cases of pronoun binding in Portuguese can also be used as evidence for a movement analysis of OC PRO. For some informants at least, in BP an overt pronoun in an infinitive clause can be co-referential with an antecedent in the

[12] Notice that in Minimalism movement is not allowed to yield traces as in GB, and even if one adopts a copy theory approach to movement (Chomsky 1995a), the copy of a moved item is not supposed to be treated as an independent lexical item from the moved item. This supports an analysis in which the lower copy of a moved element is not supposed to be treated independently for purposes of Binding Theory. See also chapter 1, section 6.

matrix clause, as shown in examples (14) and (15). If these examples correspond to standard BP, then the embedded infinitive is inflected (even if the inflection does not appear overtly), in order to license the overt subject:[13]

(14) A Regina$_j$ vai esperar ela$_{(?)j,\ k}$ vender o carro. (BP)
The Regina$_j$ will wait her$_{(?)j,\ k}$ sell-INF the car.
'Regina$_j$ will wait for her$_{(?)j,\ k}$ to sell the car.'

(15 [O Pedro e o Paulo]$_j$ saíram depois deles$_{(?)j/\ k}$ lerem o jornal. (BP).
[The Pedro and the Paulo]$_j$ left after of-they$_{(?)j/\ k}$ read-INF-3PL the paper.
'[Pedro e Paulo]$_j$ left after they$_{(?)j/\ k}$ read the paper.'

These cases support the view that in the case of embedded inflected infinitives, the matrix clause does not function as the binding domain for anaphors/pronouns in the embedded clause, since coreference is at least marginally acceptable. In the case of pronouns, they can have an antecedent in the matrix clause because they have already satisfied the requirement that their antecedent cannot be inside their binding domain, which is the embedded clause in the inflected infinitive examples above. However, the possibility of pronoun coreference with the matrix subject DP is not accepted by all the speakers, as indicated by (?) in (14) and (15), and by (??) in (16), where the restriction is even stronger. For these speakers, there is a requirement for disjunction in reference between the embedded pronoun and the matrix subject.[14]

(16) [O Pedro e o Paulo]$_j$ vão esperar eles$_{(??)j/\ k}$ vender(em) o carro. (ColBP/some informants)
[The Pedro and the Paulo]$_j$ will wait they$_{(??)j/\ k}$ sell-INF-(3PL) the car.
'[Pedro e Paulo]$_j$ will wait for them$_{(??)j/\ k}$ to sell the car.'

I assume that this restriction exists not because the matrix clause should function as the binding domain for the embedded pronoun. If there is person/number agreement in the embedded clause, it should actually function as

[13] I consider in chapter 4 the loss of inflected infinitives in BP, which yielded the possibility of non-inflected infinitives with an overt subject and without ECM.

[14] In case this restriction only holds in BP, I suspect that it is related to the current status of inflected infinitives in ColBP, which are disappearing in favor of non-inflected forms (see chapter 4 for an analysis). If so, EP speakers may not have the same restriction.

an independent domain for binding, as already shown in example (13) for anaphor binding. Rather, in cases like (16), other factors are at play, causing an obviation effect: obligatory disjunction in the interpretation of the embedded pronoun with respect to the matrix clause. The disjunction effect shown in (16) and similar cases is very much like what happens to subjunctives in several Romance languages.[15] Kempchinsky (1986) and Terzi (1991) proposed accounts for such effects in subjunctives in other languages, and Hornstein and San Martin (2000) tried to account for similar facts using an economy approach.

6 A Note on Arbitrary PRO

Non-obligatory control (NOC) properties occur not only with inflected infinitives, but also with non-inflected infinitives that allow an arbitrary PRO interpretation (PRO_{arb}, so called in Control Theory in GB; see Chomsky 1981 and also Martin 1996 and references therein). There is no need for an antecedent in PRO_{arb} constructions such as (17). Other diagnostics discussed here for OC PRO do not hold either, as a consequence of the lack of an antecedent.

(17) É impossível PRO_k bater esse record. (EP and BP)
is impossible PRO_k beat- INF this record.
'It is impossible to beat this record.'

This might suggest that subjects of non-inflected infinitives with PRO_{arb} interpretation should be conflated with arbitrary plural subjects as in (18), which also display NOC properties. Another similarity between the two cases is that they both allow either a singular or a plural interpretation for the null arbitrary subject.

(18) É impossível pro_k baterem esse record. (EP and BP)
is impossible *pro*$_k$ beat- INF-3PL this record.
'It is impossible to beat this record.'

[15] As pointed out by J. W. Zwart (p.c. 2005) this obviation/disjunction effect is reminiscent of an effect originally pointed out by Montalbetti (1984) – the "Overt Pronoun Constraint", according to which in languages where there are both overt and null pronouns, the bound variable reading is restricted to the null pronoun. Although the distinction may also extend to strong vs. weak overt pronouns, the contrast between strong and weak pronouns is less marked in Portuguese than e.g. in Italian.

However, there are several distinctions between (17) and (18). For instance, whereas in (17) the speaker can be included in the reference set for the null arbitrary subject, in (18) the speaker is excluded from that reference set. Jaeggli (1986) investigated this and other distinctions between both types of arbitrary subjects. What is relevant to the discussion here is that whatever properties distinguish these arbitrary subjects from the non-arbitrary subject *pro* of inflected infinitives discussed in section 4, they all share the non-obligatory control interpretation properties discussed in section 2. This sets all of them apart from obligatory control PRO, which has been analyzed here as the result of DP movement.

7 Believe-type verbs in Brazilian Portuguese

7.1 Background: Propositional infinitives in English and French

In this section I focus on the properties of *believe*-type infinitival complements in Portuguese and how they may be a problem for the null Case theory of control as proposed by Martin (1996, 2001) and Bošković (1997). I have already indicated similar problems with English gerunds in chapter 2. As I summarized there, in Martin's (1996, 2001) theory only [+Tense, –Finite] T can assign null Case to PRO. According to Stowell (1982), only control infinitives, but not raising and ECM infinitivals, are specified as [+Tense]. For Martin that explains why only control infinitivals should be able to assign null Case to PRO. Martin follows Enç (1990) and explores a further development in the Null Case analysis. Enç argues that eventive predicates project a temporal argument that needs to be bound by tense or some other operator (e.g. aspectual *be* and *have* and quantificational adverbs of frequency) in order to denote an individuated event. In the absence of the appropriate operator, only state-denoting predicates should be possible. If ECM and raising infinitival complements do not have tense features, the ungrammaticality of (19) is explained, because the event-denoting embedded predicate contains an event variable that requires tense or some other (temporal) operator to be bound, which in Martin's terms is not available in these domains (Martin 1996: 59 (82)):

(19) a. * Everyone believed [Rebecca to win the game right then].
b. * The doctor showed [Bill to take the wrong medicine at that exact time].
c. * The defendant seemed to the DA[*t* to conspire against the government at that exact time].[16]

Bošković (1997) proposes a slightly revised version of the null Case theory developed by Martin (1996). For him the contrast between ECM complements of *believe*-type verbs (20a) and control complements of *try*-type verbs (20b) can best be stated in terms of s-selection.

(20) a. * John believed [PRO to be nice].
b. John tried [PRO to win].

Bošković argues that *believe* s-selects propositional complements, whereas *try* s-selects nonpropositional ones, which he refers to as Irrealis. As support for this distinction, he points out that truth and falsity can be predicated only of the complement of *believe*, and not of *try*, as he shows with the contrast in (21):

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[16] However, Hornstein (2003) presents similar examples of raising (i) which are grammatical with embedded eventive predicates, suggesting at first that the contrast pointed out by Martin is restricted only to control versus ECM verbs (but see section 8):

(i) a. Rebecca seemed to win the game right then.
b. John appeared to take the wrong medicine.
c. John is likely/certain/sure to eat a bagel.

Martin (1996:91) discusses similar facts and argues that such cases do involve control rather than raising. However, Hornstein argues that if this were the case three different phenomena would be barred: raising of idiom subjects, contrary to what is shown by the contrast in (ii); expletives in the matrix subject position, which is in fact possible (iii), voice transparency in raising constructions where the embedded predicate has an eventive predicate, which is again contrary to fact, as shown by the fact that (iva) maintains for *Mary* and for *the doctor* the same thematic interpretation they have in (ivb):

(ii) a. The shit appeared to hit the fan then.
b. * The shit tried to hit the fan then.
(iii) It seemed to start to rain exactly then.
(iv) a. The doctor seemed to then examine Mary.
b. Mary seemed to then be examined by the doctor.

In section 8 I discuss additional evidence showing that ECM complements in English also violate the proposed one-to-one correlation between [+tense/+eventiveness] and null Case/control.

(21) a. John believed Peter to have played football, which was false.
b. * John tried to play football, which was false.

According to Bošković, if one assumes that the defining property of irrealis complements to *try*-type verbs is that the truth of the complement is left unspecified at the utterance time, that explains the impossibility of predicating truth or falsity of the complement of *try*. He claims that the presence of Stowell's (1982) unrealized Tense ([+Tense] in the terms of Martin 1996) may result from the s-selectional properties of *try*. Conversely, in the case of *believe*-type verbs, s-selection of a proposition as a complement should require the presence of a [–Tense] specification for T.

Bošković (1997) then proposes an account for a systematic difference pointed out by Kayne (1981) between English *believe*-type and the corresponding French *croire*-type infinitivals with respect to the licensing of PRO and ECM subjects. In contrast to English, infinitival complements of French *believe*-type verbs allow a PRO in their subject position (22) (example (22a) from Bošković 1997:63 (29a)). Conversely, French infinitival complements reject an overt DP in the same position, while this possibility exists in English (23).

(22) a. Marie croît [PRO avoir convaincu son auditoire].
Marie believes have convinced her audience.
b. * Mary believes [PRO to have convinced her audience].

(23) a. * Marie croît [Jean avoir convaincu son auditoire].
Marie believes Jean have convinced his audience.
b. Mary believed [John to have convinced his audience].

As Bošković points out, if the propositional complements to *believe*-type verbs in French behaved as their English counterparts, they would be specified as [–Tense], and (22a) would be ruled out, contrary to fact. As a solution to this problem, he argues that French propositional infinitival complements are in fact specified as [+Tense], based on the fact that they can receive a non-habitual interpretation even in the absence of other operators, such as an auxiliary or an adverb of quantification. As the examples from Bošković (1997:64) in (24) indicate, French event-denoting propositional infinitives are grammatical on the non-habitual reading even in the absence of an auxiliary or of adverbs of quantification, supporting the view that they are specified as [+Tense], assuming that the tense feature is enough to bind the temporal argument and denote an individuated event:

(24) a. Paul croît rêver.
Paul believes dream-INF
'Paul believes that he is dreaming.'
b. Anna croyaît arriver en retard hier alors qu'en fait elle était à l'heure.
Anna believed arrive-INF late yesterday although in fact she was at the.hour.
'Anna believed that she arrived late yesterday, although in fact she was on time'.

This contrasts with English *believe*-type infinitival complements, which cannot license individuated events in the absence of an auxiliary or other operator, due to their [–Tense] specification in the terms of Martin and of Bošković (25):

(25) * John believed Peter to arrive late yesterday. (Bošković 1997:64)

Although the contrast between English and French follows from the individuated event account presented by Bošković along the lines of Martin's proposal, it is not clear how such a contrast can be reconciled with the revision of the account in terms of s-selection as proposed by Bošković (1997), given that both English *believe*-type and French *croire*-type verbs should select for propositional complements, which would wipe out the relevant contrast under the s-selectional view proposed by Bošković and summarized above. In this respect, the French sentences in (26), corresponding to the distinction between propositional and irrealis complements proposed by Bošković, reproduce the English pattern in (21), although French *croire*-type verbs license PRO, whereas English *believe*-type ones do not, as I reviewed above.

(26) a. Jean croyaît [bien jouer au football], ce qui est faux.
Jean believed well play-INF soccer, this that is false
'Jean believed [that he played soccer well], which was not true.'
b. * Jean essayait de [bien jouer au football], ce qui est faux.
Jean tried of well play-INF soccer, this that is false
'Jean tried [to play soccer well], which was not true.'

Given this, we are left only with the event/tense distinction to account for the English vs. French contrast regarding *believe*-type verbs. However, complications arise when we attempt to extend the latter approach to Portuguese, as I show in the next section.

7.2 Contrast: Propositional infinitives in Brazilian Portuguese

Turning now to Brazilian Portuguese, at first one may take it to behave identically to French, regarding *believe*-type verbs.[17] This is initially supported by the fact that the class of verbs corresponding to *believe/croire* in Portuguese takes PRO infinitival complements (27) but not ECM complements (28), the same way as in French (22a)-(23a), and contrary to English (22b)-(23b):

(27) A Maria acredita [PRO ter convencido a platéia].
The Maria believes PRO have convinced the audience.
'Mary believes that she convinced her audience.'

(28) * O Jonas acreditou [o Pedro ter jogado futebol].
The Jonas believed the Pedro have played soccer.
'Jonas believed Pedro to have played soccer.'

However, the relevant distinction in the behavior of propositional infinitives in Brazilian Portuguese (BP) is that they cannot denote individuated or punctual events in the absence of an auxiliary verb (29), contrary to what one finds in French (24), but similar to English (19a):

(29) a. * O Paulo imagina sonhar.
The Paulo imagines dream-INF
'Paulo thinks that he is dreaming.'
b. * Eu acredito sair de casa amanhã.
I believe leave-INF of-home tomorrow.
'I believe that I will go out tomorrow.'
c. * A Ana julgou chegar atrasada ontem, mas ela chegou na hora.
The Ana believed arrive- INF late yesterday, but she arrived on time
'Ana believed that she arrived late yesterday, but she arrived on time'.

Corresponding examples with auxiliary *estar* 'be', a modal verb or auxiliary *ter* 'have' are perfectly fine in BP. Crucially, they allow for the eventive/non-habitual reading impossible in the sentences in (29):

[17] Bošković (1997:196n21) gives examples suggesting that European Portuguese, Spanish and Italian behave like French in the relevant aspects.

(30) a. O Paulo imagina estar sonhando.
The Paulo imagines be- INF dream- INF
'Paulo thinks that he is dreaming.'
b. Eu acredito poder sair de casa amanhã.
I believe can- INF leave- INF of-home tomorrow.
'I believe that I can go out tomorrow.'
c. A Ana julgou ter chegado atrasada ontem, mas ela chegou na hora.
The Ana believed have arrived late yesterday, but she arrived on time
'Ana believed that she arrived late yesterday, but she arrived on time'.

Similarly, propositional infinitival complement are perfect with stative verbs or with a habitual reading (31), in which case they do not need an auxiliary or another operator, given that there is no event variable to be bound:

(31) a. O Paulo acredita ser mais alto que a Maria.
The Paulo believes be- INF taller than the Maria
'Paulo believes that he is taller than Maria.'
b. A Maria julga saber de tudo.
The Maria judges know- INF of-everything
'Maria thinks she knows about everything.'
c. O Paulo alega sonhar com sereias toda noite.
The Paulo claims dream- INF with sirens every night.
'Paulo claims to dream of sirens every night.'[18]

[18] Also notice that similarly to French, BP presents ECM-like instances of *wh*-questions with propositional infinitives, but one also needs an operator to bind the event variable under an individuated-event reading, as shown by the contrast in (i).

(i) a. * Quem você imagina sonhar?
Who you imagine dream-INF?
'Who do you believe to be dreaming?'
b. Quem você imagina estar sonhando?
Who you imagine be-INF dreaming?
'Who do you believe to be dreaming?'

I assume that Case checking of the embedded subject can proceed in the same way as proposed by Bošković (1997:66) for the corresponding French cases, where the embedded subject checks its Case in an A'-position while undergoing *wh*-movement. (ia) is then ruled out not because of Case checking reasons, but because the embedded infinitive lacks an operator to bind the event variable.

These different facts indicate that the one-to-one correlation between null Case/control and [+eventiveness/+tense] fails with respect to *believe*-type infinitival complements in Brazilian Portuguese, given that these complements do license control PRO, but fail to display the [+eventive]/[+tense] interpretation in the absence of an overt operator, contrary to what would be predicted in the null Case theory of control as reviewed above.

Bošković (1997:196, fn21) points out that the English verb *claim* is also a problem for the null Case account, given that it allows for PRO (as it can be seen in the gloss of (31c) above) even though it does not seem to carry a [+Tense] specification, as shown by the ungrammatical **Anna claimed to arrive late yesterday*, which has an ungrammatical counterpart also in BP (32). This contrasts with (31c), which allows PRO but is grammatical despite the [–tense/ –eventive] interpretation of the embedded infinitive, both in Brazilian Portuguese and in English.

(32) * A Ana alegou chegar tarde ontem.
The Ana claimed arrive- INF late yesterday.
'* Ana claimed to arrive late yesterday.'

In sum, the facts above indicate that the event/tense based null Case theory of control does not fare well with respect to propositional infinitives, especially in Brazilian Portuguese, given that they license PRO as in French, but they carry the same restriction as in English with respect to the occurrence of eventive predicates; that is, they require an overt operator to license the occurrence of an eventive predicate. Similar problems also extend to complements of verbs such as *claim* in English, as pointed out above.[19] If the connection between tense and eventive predicates is as proposed in the null Case approach based on tense, the fact that certain propositional infinitival complements (as in Brazilian Portuguese and in English) license PRO is left unexplained, given that they are specified as [–Tense]/[–eventive], a specification that would block control PRO, according to the null Case approach but contrary to fact.

[19] See chapter 1, end of section 3.1, for a related problem regarding certain ECM infinitival complements in English, which do display a [+tense/+eventive] interpretation but fail to allow control PRO.

8 Other analyses of control

The contrast in the properties of infinitives I analyzed above for Portuguese has at least a partial parallel in other languages. I discuss in this section several approaches that have been proposed for other languages (see also discussion regarding Basque and Quechua in chapter 1), although I do not intend to review all the details of such approaches in this book. I extend the discussion in this section primarily to the case of Greek subjunctives, regarding the empirical data.

A relevant example from Greek is (33), in which *na* corresponds to a subjunctive marker (and is taken to be a Mood marker in some of the relevant literature):[20]

(33) I Maria$_i$ prospathise *ec*$_{i/*j}$ na diavasi. (Terzi 1997:338 (7))[21]
Mary tried-3SG PRT read-3SG
'Mary tried to read.'

Terzi (1997:338) following Iatridou (1988/1993) and Felix (1989), argues that the subject of the subjunctive complement of verbs like *try* is PRO, and an overt subject is not allowed in the same position, similar to what I showed for English TP-defective gerunds in chapter 2. Summarizing the relevant literature on control in the Balkan languages, Landau (2004:827) states that constructions such as (33) (which he refers to as C subjunctives, henceforth control subjunctives) display all the relevant properties of obligatory control PRO: the embedded subject must be null and coreferential with a c-commanding matrix antecedent.[22] Control by a distant antecedent, or a discourse referent, is impossible. The embedded null subject also behaves as OC PRO in that it only permits a sloppy reading under ellipsis, and supports a *de se* but not a *de re* interpretation.[23]

Terzi (1997) proposes that the subjunctive marker *na* checks null Case and licenses PRO in its specifier position, in control subjunctives in Greek

[20] See e.g. Philippaki-Warburton 1987, Terzi 1992, 1997, Iatridou 1988/1993, Varlokosta 1994, Philippaki-Warburton & Catsimali 1999, and references therein.

[21] Notice that examples in this section from Terzi and other authors are glossed exactly the way they were glossed in the original.

[22] Landau also argues that embedded subjects are excluded in this case. However, Spyropoulos (2005:6 (15)) provides examples with *prospaθo* 'try', in which an overt DP-subject/pronoun can also be licensed in the embedded subjunctive, leading to what Spyropoulos takes to be cases of backward control or controlled overt pronouns.

[23] For other relevant analyses of control in different Balkan languages consider Comorovsky (1985), Farkas (1985), Zec (1987), Turano (1994), Roussou (2001), Krapova & Petkov (1999), Krapova (2001), Dobrovie-Sorin (1994, 2001).

(subjunctive *na*-clauses). Notice, however, that if embedded clauses such as in (33) carry [–Tense], then the null Case approach to control based on tense specifications (Martin 1996, 2001), which I discussed in detail in this and other chapters, cannot be adopted for such cases, because the null Case approach incorrectly predicts that [–Tense] complements can not license control. Nevertheless, Terzi attempts to revise the null Case approach to control in Greek by proposing that M, a Mood head hosting the subjunctive particle *na*, is the functional head responsible for null Case checking, instead of the inflectional head (T) carrying tense specification. A limitation of her approach is that it eliminates the possibility of a unified mechanism triggering control properties across different languages, given that the dependency of control on a (subjunctive) mood marker cannot be extended to languages such as English and Portuguese in which only infinitives license control. However, at least in the case of Greek, Terzi argues that this eliminates certain problems, involving for instance empirical cases such as (35) and (36) discussed below, for proposals that relate null Case to tense distinctions.

Relevant to Terzi's analysis are cases parallel to control subjunctives, and which also display null subjects, although they do not display OC PRO properties. Landau (2004:827) cites Terzi and other relevant work on control in the Balkan languages to argue that these non-control subjunctives pattern with indicative clauses, in that no constraint applies to the embedded subject, which can be either null or overt. Landau initially argues that in such cases, if the subject is null, it does not display OC PRO properties, in that it can be disjoint from any matrix argument (34), can be coreferential with a non-c-commanding antecedent, can carry a strict reading under ellipsis and can have a *de re* interpretation (we will return below to a more complex treatment of cases such as (34)):

(34) I Maria$_i$ elpizi *ec*$_{i/j}$ na diavasi. (Terzi 1997:347 (45b))
Mary hopes-3SG PRT read-3SG
'Mary hopes (for him/her) to read.'

Terzi (1992, 1997:348) provides some evidence to suggest that the contrast between (33) and (34) cannot be merely one involving a difference in tense properties. For Terzi, the verb corresponding to 'want' in Greek takes embedded subjunctive clauses (35) that license subjects with the same control properties as 'hope' in (34), but the two verbs select complements with different tense dependencies, as shown by the contrast between (35) and (36) below:

(35) O Yiannis theli na erthi /* irthe. (Terzi 1997:348 (50)).
John want-3SG PRT come-3SG/ came-3SG
'Mary wants (that he/she) comes/* has come.'

(36) O Yiannis elpizi na erthi/irthe. (Terzi 1997:348 (51)).
John hopes-3SG PRT come-3SG /came-3SG
'Mary hopes (that he/she) comes/has come.'

Given cases such as these, according to Terzi, "while it is certainly true that the Tense of Greek subjunctives is defective in several respects, it is not exactly clear how defective Tense correlates with null Case checking and licensing of PRO" (Terzi 1997:349), raising an additional question for a tense-based approach to control such as the null Case theory, in addition to the problem of the apparent [–Tense] character of the OC PRO case in (33). This adds to the problems for tense-based approaches to null Case I presented in previous chapters.

In addition, Terzi points out that tense dependencies such as the ones found in control subjunctives in Greek are found in subjunctives in languages other than the Balkan languages, such as Romance, as indicated by the Spanish example in (37) below, yet a null subject with OC PRO properties is not licensed in their environment (38):

(37) Juan trata de que coma/*comiera. (Terzi 1997:349 (54-5))
John try-3SG of COMP eat-3SG-SUBJ-PRES/ *PAST
'John tries for him to eat.'

(38) Juan_i trata de que $ec_{j/*i}$ coma.
John try-3SG of COMP eat-3SG-SUBJ-PRES
'John tries for him to eat.'

Terzi points out that the [–Tense] T of Romance subjunctives has instead been considered responsible for the opposite referential properties of their subjects, namely for the fact that matrix and embedded subjects cannot be coreferent.

However, by rejecting a tense-based approach to control, Terzi needs to provide a different explanation for why the subject of *na*-clauses in the complement of 'want' and 'hope' verbs, such as in (34) and (35), can display non-control properties. Terzi therefore proposes that the *na*-clauses that are complements to 'want' and 'hope' verbs instantiate two types of null-subject complements, one licensing only PRO, corresponding to the coreferential interpretatation in (34) (in a similar way to (33), according to Terzi) and the other one licensing *pro* (the disjoint interpretation in (34)) or an overt subject, as in (40). The two alternatives are respectively represented in (39) (adapted from Terzi 1997:354 (67-68)):

(39) a. $V_{want/hope}$ [$_{CP}$ [$_{C'}$ Ø [$_{MP}$ PRO Ø [$_{IP}$ [$_{I'}$ V…]]]]]
b. $V_{want/hope}$ [$_{CP}$ [$_{C'}$ M+V [$_{MP}$ *pro*/DP [$_{M'}$ e_{M+V} [$_{IP}$ [$_{I'}$ e_{V} …]]]]]]

(40) I Maria theli na agorasi o Yiannis tin efimerida. (Terzi 1997:355 (69)).
Mary want-3SG PRT buy-3SG John the newspaper
'Mary wants John to buy the newspaper.'

For Terzi (1997:354), what distinguishes the *na*-clauses represented in (39b), corresponding to *pro* (33) and overt subjects (40), from the OC control cases illustrated in (39a) is that the complex Mood+V in (39b) moves to C, from where a postverbal (null or overt) subject is licensed (with nominative Case) in a manner comparable to Rizzi's (1982) Aux-to-Comp mechanism (see also a related proposal in Varlokosta 1993, building on Iatridou 1988/1993). According to Terzi, this is supported by the unmarked verb-subject order in the *na*-clause in (40). However, Terzi does not explain how Rizzi's Aux-to-Comp approach can be made compatible with a Minimalist approach to control. Second, assuming V adjoins to Mood before Mood+V raises to C, this requires right adjunction, which may not be desirable in an approach that attempts to restrict the mechanism by which adjunction takes place (e.g. Kayne 1994).[24]

Finally, Terzi argues that all subjunctive *na*-clauses are inflected for Agr and Tense (notice we will return to a more fine-grained approach to this matter below). However, given this, she needs to explain why nominative Case is not licensed across the board, unexpectedly extending also to control *na*-clauses ((33) and the coreferential case in (34)) the same Case properties of examples such as (40) with an overt subject, and of (34) with the EC interpreted disjointly as *pro*. In order to explain why PRO (which for Terzi receives null Case) is licensed in the same environment as overt subjects and *pro*, she considers two alternatives: (i) PRO cannot move to a nominative Case position (after checking null Case) or (ii) nominative Case position is not even available in the corresponding control *na* subjunctives, as represented in (39a). In alternative (ii), it is not clear how examples such as (34) and (40) with

[24] In addition, the prediction of Terzi's approach is that no element can intervene between *na* and a verb. Finally, it is not clear that an analysis in which V raises to Mood and then to C is ruled out in control *na*-clauses in Greek. The latter cannot be easily shown because there is no embedded overt subject that could clearly indicate the position of the verb in control clauses. This is especially relevant if V movement to (Mood and then) to C can be shown not to be motivated by nominative Case checking, as pointed out by Kapetangianni & Seely (2006), who present additional criticism of a related V-to-C approach to nominative Case in Greek as proposed by Varlokosta (1993).

nominative subjects should be allowed, if nominative Case is not available as the result of the feature specification of the lexical items present in *na*-clauses such as (34) (especially if this feature specification is the same both in the control and non-control counterparts of (34)). In the first alternative, Terzi does not seem to provide a clear explanation for why only some *na*-subjunctives license nominative (*pro*/overt) subjects, provided a nominative Case position is present in all *na*-clauses (as indicated by the Agr and Tense features she argues are present across the board in these clauses) or at least in the two types of *na*-clause represented in (39). An additional problem here is to explain why PRO is licensed in these *na*-clauses, if they can also check nominative Case, different from finite clauses, which can only check nominative Case subjects. This problem relates closely to the one I analyzed in chapter 1, involving the availability of both OC PRO and of overt subjects in clausal gerunds.[25] Terzi addresses this problem by arguing the only the *na*-clauses that license PRO have an additional Case feature, null Case, but this faces problems regarding null Case of the sort I pointed out above.

Kapetangianni & Seely (2003, 2006, henceforth K&S) propose an alternative analysis for *na*-clauses in Greek, dispensing both with null Case and with a tense-based approach to control in *na*-clauses (similar to what Terzi does). K&S distinguish *na*-clauses as being of two types, obligatory control (OC) *na*-clauses and non-obligatory control (NOC) *na*-clauses, as proposed by Terzi and others. They also adopt a movement approach to obligatory control PRO, following aspects of Hornstein (1999, 2001), in an analysis that has some parallel to the analysis I developed in this chapter for OC in non-inflected infinitives in Portuguese (and also adopted in Pires 2001a, b). On the one hand, K&S propose that control *na*-clauses such as (33) and the coreferential counterpart of (34) are defective in their abstract specification of ϕ-features, despite their lack of overt morphological distinction from non-control *na*-clauses regarding their agreement feature specification. This is similar to what I proposed for non-inflected infinitives in my analysis of Portuguese in this chapter. Given their ϕ-defectiveness, control *na*-clauses such as in (33) and in the coreferential case of (34) cannot check nominative Case, but instead require movement of the embedded subject to the higher clause, where it checks Case, yielding in the embedded clause a copy of the moved subject with OC PRO properties. On the other hand, non-control *na*-clauses such as in (40) and in the non-coreferential case in (34) are argued by K&S to be

[25] One might consider here the possibility of an analysis similar to the one I developed in chapter 1 for clausal gerunds, which license both control null subjects and overt subjects, despite the fact that the feature specification of the two types of clausal gerunds is exactly the same. However, one potential distinction from the analysis I proposed for clausal gerunds is whether there is a Case feature associated with the embedded *na*-clause in Greek.

ϕ-complete, which allows them to check/value nominative Case of an embedded subject.

8.1 Tense, agreement and control

Landau (2004) also explores the properties of control in subjunctive complements in Greek and in other Balkan languages, as part of an attempt to propose an overarching crosslinguistic approach to different control and non-control complement clauses. As I discuss below, although Landau's approach addresses many important aspects of a broad range of cases crosslinguistically, it faces potential empirical problems. He argues, in a way partially similar to the null Case approach to control, that OC PRO is an independent lexical item in the lexicon which needs to be case marked (although he does not adopt null Case, nor discusses in detail how a general approach to Case checking/valuation interacts with his analysis). For him, obligatory control is an instance of Agree, interacting with feature checking and deletion. This is not in principle incompatible with a movement approach to OC PRO, along the lines I adopted in this book, although the specific technical apparatus proposed by Landau is substantially different in certain respects. In the approach I have adopted here Agree is also necessary for Case checking/valuation (following Chomsky 2000, 2001), but the crucial difference from Landau's approach is that Agree in the current proposal interacts with overt movement without the need to propose the existence of OC PRO as an independent lexical item, in accounting for obligatory control. Landau (2004:811) proposes instead that PRO is in general the "elsewhere" case of referential subjects, even though he clarifies that his R-assignment rule, the rule in which an "elsewhere" condition is stated, "is an honest stipulation; it does not pretend to be derived from deeper principles, although such a possibility obviously exists." (Landau 2004:842).

Some specific problems arise for Landau's approach regarding his treatment of different empirical cases, given other aspects of his approach. He proposes that the licensing of PRO must be sensitive to the distribution of [Tense] and [Agr] features both on the Complementizer and on the Inflectional heads (he adopts a non-split IP projection).[26] For him there are three different specifications of T on the C head and on the Inflectional head. If C is specified for Tense, its feature specification simply matches the Tense specification of the Infl head. The two specifications he proposes that are relevant for the current discussion are in (41):

[26] Various aspects of the approach to tense adopted by Landau benefits from insights of proposals independently developed by Pesetsky & Torrego (2001), although their analysis does not focus on control phenomena and is not the source of the potential difficulties for Landau's analysis.

(41) Landau's specification of T on the C and Infl heads:
a. untensed complements: [–Tense] on both C and Infl.
b. dependent tense complements: [+Tense] on both C and Infl.

As for the specification of the [Agr] feature, there is an important mismatch in Landau's approach. He associates [+Agr] on Infl with overt morphology: "the simplest assumption is that [+Agr] is present iff there is agreement morphology. This means that the I^0 head of infinitives is [–Agr], whereas the I^0 head of subjunctives and indicatives is [+Agr]." (Landau 2004:839). However, he makes a completely different assumption in the case of the C head, by eliminating any direct connection between abstract agreement features and overt agreement morphology.[27] For Landau the specification [+Tense] on C forces the specification [+Agr], independently of a correlation to overt morphology:

(42) "It would greatly simplify our system to assume that any kind of agreement on C^0, visible or not, is represented as [+Agr]. For the cases under consideration, I will assume that [+Agr] is parasitic on [+T], but only in the sense that the latter is a necessary condition for the former." (Landau 2004:840).

(42) alone would not necessarily be a problem, since in many generative approaches to a wide range of phenomena (including the one developed in this book) abstract feature specifications are proposed in the absence of corresponding overt morphology, provided there is independent motivation especially in the syntax. However, the main complication regarding the [+Agr] specification on C in (42) is that it is in opposition to what Landau needs to adopt for the [+Agr] specification on Infl, which follows from the actual presence of overt agreement morphology, rather than from the specification of [+Tense] (as he proposes for C and which in this case is simply a match of the [+Tense] feature on Infl, as I pointed out in (42)). In addition, one empirical issue raises a problem for this approach: when Landau considers the case of Hungarian inflected infinitives in his analysis (following Tóth 2000), he runs into an apparent contradiction regarding (42), given that he is forced to propose that Hungarian inflected infinitives have a C that is specified as [–Tense, +Agr] (Landau 2004:869 (69)). The contradiction here is that C now has a

[27] In fact, although there is cross-linguistic morphological evidence for the overt specification of Agreement features on both complementizers and inflectional heads, Landau does not show direct evidence for an overt distinction in agreement in complementizers, in the empirical cases he analyzes.

[+Agr] specification, but it does not follow from a [+Tense] specification, contrary to what Landau proposes in (42).

Following Reinhart & Reuland (1993) and Reuland & Reinhart (1995), Landau adopts the view that DPs capable of independent reference are endowed with the feature [+R], whereas anaphoric DPs are [–R]. However, he goes on to suggest that "PRO in OC is a null SE-anaphor of sorts (see Martin 1996 for a related proposal). Lacking any inherent specification of ϕ-features, PRO is [–R]." (Landau 2004:841). A difficulty here is that Landau argues, as I summarized above, that "PRO is case-marked just like any other DP." (Landau 2004:811). Although Landau does not specify the approach to Case checking/valuation he is adopting, the latter two arguments are incompatible with an approach to Case checking/valuation that is dependent on the lexical specification of interpretable ϕ-features on a DP, especially along the lines of Chomsky 2000, 2001. If PRO is an independent DP that needs to check/value Case, as Landau argues, it needs to be inherently specified with interpretable ϕ-features in order to enter into Agree/Match with a Case checking/valuing head, contrary to the assumption made by Landau that PRO is an independent lexical item that lacks any inherent specification of ϕ-features. If PRO lacks ϕ-features, it is not clear how it can enter Case checking/valuation (especially under an approach to Case checking/valuation involving *Agree*, as summarized in the Introduction and chapter 1).[28]

Consider now an empirical case from Greek which raises problems for Landau's analysis. First, here is some additional background on his analysis. Landau proposes that control and non-control subjunctives in the Balkan languages need to be distinguished on the basis of the Tense specification of C. First, Landau assumes that all Balkan subjunctives are specified as [+Agr] both in the C and in the Infl head (Landau 2004:840 (38)).[29] Second, for him all Balkan subjunctives that display [+Agr] and [+Tense] specification on both C and I carry dependent tense (41b). Crucially, Landau initially argues, partially following previous proposals, that obligatory control in the Balkan languages is found only with subjunctive complements that are semantically untensed (Landau 2004:825) as in (41a). He then summarizes Varlokosta (1993) (which also builds on Iatridou 1988/1993), and considers the case of non-control subjunctives such as (34) to (36), pointing out that these non-control subjunctives define their own (dependent) [+Tense] domain, separate from the matrix tense domain. He also builds on Varlokosta to argue that, by contrast, control

[28] Similar problems have been pointed out in detail by Holmberg (2005) regarding the licensing/identification of *pro*, given a Minimalist approach to Case checking/valuation.

[29] If one adopts instead the proposal by K&S that control subjunctives in Greek are in fact ϕ-defective, one may consider the possibility that their inflectional head could carry a [–Agr] specification, or at least not [+Agr] in the sense proposed by Landau.

subjunctives fall within the matrix tense domain, hence are untensed and cannot introduce temporal modifiers incompatible with the matrix tense.

However, Kapetangianni & Seely (2006) provide examples such as (43) in which the subjects display the properties of control subjunctives but in which the embedded control clause takes a temporal adverbial distinct from the matrix, indicating that the *na*-subjunctive is [+Tense], and corresponds to dependent tense, thus cannot license control under the aspects of Landau's analysis above. Under his initial analysis (43) is incorrectly predicted not to allow control properties because the subjunctive *na*-clause has [+Tense] and [+Agr].

(43) hthes o Yanis entharine ti Maria
na erthi avrio sta genethlia tu.
Yesterday the-NOM john-NOM encourage-3SG/PAST the-ACC mary-ACC
NA come-3SG/PRES tomorrow to.the-ACC birthday-ACC his.
'Yesterday, John encouraged Mary to come to his birthday party tomorrow'. (K&S 2006, ex. (10))

Some of the empirical evidence K&S present for the obligatory control treatment of *na*-clauses such as (43) includes the fact that their empty subject cannot refer deictically (44a), and it must have a (local) c-commanding antecedent (44b) (K&S, ex. (11b, c)).[30]

(44) a. *o Yanis entharine ti Maria$_1$ *na ec*$_2$
erthi sta genethlia tu
the-NOM John-NOM encourage-3SG/PAST the-ACC Mary-ACC NA
come-3SG/PRES to.the-ACC birthday-ACC his
'* John encouraged Mary$_1$ *ec*$_2$ to come to his birthday party.'
b. * o Yanis entharine to filo
tis Marias$_1$ *na ec*$_1$ erthi sta genethlia tu
the-NOM John-NOM encourage-3SG/PAST the-ACC friend-ACC
the-GEN Mary-GEN NA come-3SG/PRES to.the birthday-ACC his
'* John encouraged Mary$_1$'s friend *ec*$_1$ to come to his birthday party.'

Given that Cases such as (43) display [+Tense] in the embedded clause, they are initially predicted by Landau to fall into the class of non-control

[30] K&S point out other object control verbs that take *na*-clauses specified for [+Tense] and [+Agr]), but which also display OC: *leo* 'tell', *epitrepo* 'allow', *afino* 'let', *ipochreono* 'oblige', *diatazo* 'order', *vazo* 'put', *simvulevo* 'advise'.

subjunctives (his F-subjunctives). However, Landau's (2004: 837 (34aii) and 840 (38)) initial prediction that they should display no control is not satisfied. He proposes the following generalizations, which are not supported by the empirical facts in (43) and (44):

(45) Finite control in the Balkan languages (Landau 2004:833(23))
a. F-subjunctives carry dependent tense; C-subjunctives carry anaphoric tense (i.e. they are untensed).
b. *pro* is licensed in tensed subjunctives, PRO in untensed subjunctives.

In sum, Greek Cases such as (43) and (44) correspond to control subjunctives and their embedded subject carries OC PRO properties. However, contrary to Landau's prediction (following Varlokosta 1993, in the case of Greek), they are not untensed (i.e. they do not carry anaphoric tense in Landau's sense).

Only later does Landau attempt to deal with the fact that [+Tense] *na*-subjunctives (his F-subjunctives) in fact correspond to at least two classes of complements — control and non-control [+Tense] subjunctives, an observation going back at least to Terzi (1991, 1997:354). First, Landau then proposes that the [+Tense, +Agr] specifications of both C and Infl in [+Tense] *na*-subjunctives each yield an uninterpretable [+R] feature. The [+Agr, +R] on both Infl and C are then each checked in turn, as the result of the presence of a lexical DP or a *pro* in the non-control *na*-subjunctive (such as (40) or the disjoint counterpart of (34)). The problem arises with the parallel control case (e.g. (43) or the *coreferential* counterpart of (34)). Landau is forced to propose for these cases that "PRO is licensed precisely because the two occurrences of uninterpretable [+R] feature – on I^0 and on C^0 – cancel out by checking each other off." (Landau 2004:844 (41b)). Here he does not clarify how this cancellation mechanism takes place, and how an uninterpretable feature can be eliminated by the presence of another uninterpretable feature.

In addition, the prediction seen from Landau's analysis above is that the [+Tense] *na*-subjunctives also need to allow an overt DP or a *pro* as the embedded subject. Crucially, although this is true for examples such as (35), as in (40), discussed by Terzi (1997), it is impossible for [+Tense] *na*-subjunctive clauses corresponding to (43) to display an embedded overt subject (46), as shown by K&S 2006 (their ex. (11a)):

(46) * o Yanis entharine ti Maria *na* erthi o Vassilis sta genethlia tu
the-NOM John-NOM encourage-3SG/PAST the-ACC Mary-ACC NA come-3SING/PRES the-NOM Bill-NOM to.the-ACC birthday-ACC his
'* John encouraged Mary that Bill come to his birthday party.'

The latter is also contrary to the prediction that the independent tense in Varlokosta's (1993) analysis ([+Tense, +Agr] in Landau's analyses) should allow nominative Case to be assigned to an overt or *pro* subject in the embedded *na*-clause, although in fact this cannot take place in cases such as (43) and (46).

In sum, adding to the various mismatches between tense specification and control properties I discussed in previous chapters, the issues discussed in this section indicate that tense properties, even in close conjunction with agreement properties, do not seem to determine control properties in as straightforward a way as one should expect from various analyses, considering specifically evidence from Greek from the discussion above.[31]

8.2 Overt subjects of infinitives in other Romance languages

One issue I have not yet discussed is the way in which the licensing of overt subjects and PRO in Portuguese infinitives may relate to the limited occurrence of overt subjects with infinitives in other Romance languages. A broad recent investigation of this phenomenon is found in Mensching (2000), who examines how overt subjects are licensed in infinitives clauses in general, in various Romance languages and dialects, at different historical periods.[32] He deals in detail with the cases of overt subjects of infinitives in Romance languages that do not display inflected infinitives, including Modern French, Italian and Spanish. Among these are cases in which verb-subject inversion takes place in the infinitive clause, such as the Spanish example in (47) (Mensching 2000:6 (8a)):

[31] Spyropoulos (2005) reviews other aspects of Landau's (2004) approach to finite control regarding Greek. Landau's proposal also considers partial control and exhaustive control, which I have not addressed here, given that I did not address the details of this distinction regarding Portuguese infinitives and English gerunds.

[32] Miller (2002) presents another overarching crosslinguistic investigation of nonfinite structures, both from a synchronic and from a diachronic perspective. See also Vinet (1985) for French, Piera (1987) for Spanish, Rochette (1988), Torrego (1998) for a recent account of nominative subjects of infinitives in Spanish, and Salles (2005) and references therein for overt subjects in exceptional Case marking contexts in Brazilian Portuguese. It is not my intention to address the multiple implications of these and many other important proposals here (see additional references in the works I cite here).

(47) [Haberse Julia presentado a las elecciones] fue un error.
[have-INF-self Julia presented at the elections] was a mistake
'The fact that Julia presented herself at the elections was a mistake.'

Mensching argues that most of the underlying syntactic mechanisms that were developed to account for these and other phenomena especially in the Government & Binding approach can be derived from a Minimalist approach to Case checking. Earlier approaches to examples such as (47) involved different analyses of Infl/V(-to-C) raising, proposed as early as Rizzi (1982) in his Aux-to-Comp analysis.[33] However, contrary to most early approaches to Case checking, Mensching (2000:ch. 6) initially proposes to license the Case of overt subjects in infinitives by appealing to Government, despite the fact that different problems have been pointed out in the literature for the incorporation of Government into Minimalism, starting with Chomsky 1995a. Mensching instead proposes a hybrid approach, by appealing to two independent mechanisms of Case checking: Case checking under Government in combination with the Minimalist [Spec, head] approach to Case checking developed in Chomsky (1995a), in which the abstract Case feature on a DP is taken to be checked in the specifier of the inflectional head that can check Case. In addition, Mensching proposed that the Case-checking inflectional heads Agr and/or T (and in some cases also C, as in Italian) of the infinitive needed to be specified either with an abstract [+Tense] feature or, otherwise with a [+Agr] feature, in order to be able to check nominative Case of a DP (Mensching 2000:ch.6).[34] Several questions arise regarding this approach. First, Mensching argues that AgrS can assign nominative Case under a [Spec, head] relation, whereas T can assign nominative under a Government relation (Mensching 2000:188), but it is not clear why the two projections that form the inflectional domain should participate in completely different mechanisms of Case assignment/checking.[35] In an attempt to deal with this problem, Mensching (2000:7.3.1) considers the possibility of avoiding appeal to Government by making use a distinction between strong and weak features in the feature specification of the lexical items involved in Case checking (adopting the approach to feature strength in Chomsky 1995a). In this way,

[33] See discussion in section 8 of a related approach proposed by Terzi (1997) and others to Greek subjunctives. See also Ambar 1994 and Raposo 1987 for European Portuguese.

[34] Mensching adopts a split-IP, making use of both an AgrsP and a TP projection in the inflectional domain.

[35] Mensching makes reference to Case assignment and Case checking in different instances. Throughout this book I have adopted Case checking/valuation interchangeably as the structural mechanism by which Case properties are satisfied. However, as I mentioned in chapter 1, I have not explored the relevance of the distinction between Case checking and Case valuation for the phenomena I have investigated.

weak features would not trigger overt movement of a subject DP to the specifier of the Case checking head (this is the same intended result in the part of Mensching's proprosal that appeals to Case checking under Government, so that no overt movement of the Case-checking DP is necessary).

Second, Mensching initially makes use of a [+Tense] feature to check nominative Case (assuming in most cases that there is no [+Agr] feature in the Inflectional domain that can check Case in non-inflected infinitives). However, he apparently does not appeal to a [+Tense] feature as an actual semantic specification of the tense properties of the infinitives, but simply as a way to provide infinitives with a formal feature specification that can play a role in Case checking.[36] Mensching (2000:ch. 7; 200) subsequently argues that what allows an infinitive inflectional head T to check nominative Case is the fact that it carries a [Nom] feature (assuming the symmetric approach to Case feature specification in Chomsky 1995a, by which the inflectional head and the DP involved in Case checking both carry a Case feature). Under either formulation of his approach to Case checking by non-finite T, it is not clear how the feature specification of finite clauses can be clearly distinguished from the feature specification of standard infinitive clauses in French, Italian and Spanish and from non-inflected infinitives in EP and StdBP, if one assumes that any non-finite inflectional head in Romance carries a feature specification that can trigger nominative Case checking, making them identical to finite clauses in this respect. This is especially relevant given that the identity between finite and non-finite clauses is not perfect, regarding specifically the position in which overt subjects need to occur in order to check Case, in finite and in non-finite clauses. Mensching (2000:199) points out, in this respect, that "the syntactic configurations in which specified subjects are licensed also vary considerably. In the varieties that allow both preverbal and postverbal subjects in infinitive constructions, the choice of either position is usually not arbitrary but rather depends on syntactic properties. This is a fundamental difference compared to finite constructions, where the position of subjects is largely dependent on semantic and pragmatic factors."

Finally, given that the [Spec, head] approach to Case checking adopted by Mensching is in fact abandoned within a Minimalist approach in which Agree is the only mechanism involved in Case checking/valuation (Chomsky 2000, 2001), it is possible to consider an alternative possibility to account for the phenomena addressed by Mensching. This approach also eliminates any appeal to Government by a c-commanding head as a necessary mechanism to

[36] However, Mensching (2000:194) does acknowledge the existence of potential problems related to this: "A problem that I overlooked in the preceding sections, but which the reader may have noticed, is that the correlation of certain features is not sufficiently explained."

check/value the Case of an overt DP, when the DP remains in the command domain of the Case checking/valuing head and does not move to its specifier. Under Agree, if there is no EPP-feature or requirement driving overt movement, Case checking/valuation can take place in-situ. This approach has a similar effect to the weak-feature checking approach adopted by Mensching, in his attempt to avoid appeal to Government. Under either approach, the issue regarding the feature specification (in terms of [Agr], [Tense] and possibly Case features) of the CP and IP projections remains, since the heads involved in Case checking/valuation need to be appropriately specified with features that are relevant for Case, but they also need to be distinguished across different types of clauses, especially finite and non-finite clauses. I address certain aspects related to the latter issue in chapter 4.

9 Conclusion

In this chapter I analyzed obligatory control in infinitives in three Portuguese dialects, extending to them an analysis of obligatory control as the result of A-movement. First, the proposal presented above has the advantage of providing visible morphosyntactic evidence supporting this kind of analysis. Obligatory control PRO is eliminated as an independent element in the grammar. This provides support for dispensing with the PRO Theorem and the Control Module. The minimalist reasoning is that all things being equal, the fewer modules the better. Furthermore, the current analysis captures in a straightforward way the contrast between obligatory and non-obligatory control, and its connection to the inflectional morphology of infinitives in Portuguese. I additionally addressed the specific case of *believe*-type verbs, especially in Brazilian Portuguese, which do not pattern with their corresponding class either in English or in other Romance languages, presenting significant problems for a tense/event-binding version of the null Case Theory. Finally, I reviewed several proposals that explore the role of agreement and tense in the licensing of overt and null subjects in defective domains in other languages, specifically in Modern Greek and in Romance languages other than Portuguese, and discuss empirical problems related to the ones I considered in this book regarding English gerunds and Portuguese infinitives.

CHAPTER 4

SYNTACTIC CHANGE: THE DEVELOPMENT OF INFLECTED AND NON-INFLECTED INFINITIVES

1 Introduction

This chapter analyzes two major instances of morphological change with syntactic effects in the behavior of infinitives in Portuguese, and proposes an account for these changes in terms of a theory of acquisition that emphasizes the interaction between properties of universal grammar and the primary linguistic data. This chapter considers phenomena related to those discussed in previous chapters, but here I focus especially on the connection between syntactic theory and language change. One further relevant aspect is that it discusses the historical connection between the inflected infinitives analyzed in chapter 3 and non-inflected infinitives that display properties similar to those discussed for the English clausal gerunds in chapter 1. First, I address the origin of inflected infinitives in Old Portuguese and provide a new argument supporting one of the two major proposals for their origin, arguing that inflected infinitives developed from a previously finite verb form, and not from uninflected infinitives. Second, I analyze the seemingly unexpected syntactic effects of the loss of inflected infinitives in contemporary Colloquial Brazilian Portuguese, explaining why the loss of verbal inflection blocked the licensing of *pro* but not of overt subjects.

2 Inflected versus non-inflected infinitives

There are two varieties of infinitives in Portuguese: non-inflected or inflected for person/number. As shown in chapter 3, Standard Brazilian Portuguese (StdBP) in general displays the following person/number paradigm for inflected infinitives:

(1) Standard Brazilian Portuguese: Inflected Infinitive

Singular:		ROOT-**INF**	
syntax		morphology	
1SG	(eu)	fala-**r**	'(I) speak- **INF** -ø'
2SG	(você)	fala-**r**	'(you) speak- **INF** -ø'
3SG	(ele/ela)	fala-**r**	'(he/she) speak- **INF** - ø'

Plural:		ROOT-**INF** -**INFL** (person+number)	
syntax		morphology	
1PL	(nós)	fala-**r**-**mos**	'(we) speak- **INF** -**1PL**'
2PL	(vocês)	fala-**r**-**em**	'(you) speak- **INF** -**3PL**'
3PL	(eles/elas)	fala-**r**-**em**	'(they) speak- **INF** -**3PL**'

In StdBP only plural forms of the inflected infinitive display overt morphology for person/number. European Portuguese differs from StdBP in that it has overt inflection for second person singular as well, and a different form for the second person plural.

(2) European Portuguese (EP): Inflected Infinitive[1]

Singular:		ROOT-**INF**-**(INFL)** (person+number)	
Syntax/morphology			
1SG	(eu)	fala-**r**	'(I) speak- **INF** -ø'
2SG	(tu)	fala-**r**-**es**	'(you) speak- **INF** -**2SG**'
3SG	(ele/ela)	fala-**r**	'(he/she) speak- **INF** - ø'

Plural:		ROOT-**INF**-**INFL** (person+number)	
Syntax/morphology			
1PL	(nós)	fala-**r**-**mos**	'(we) speak- **INF** -**1PL**'
2PL	(vós)	fala-**r**-**des**	'(you) speak- **INF** -**2PL**'
3PL	(eles/elas)	fala-**r**-**em**	'(they) speak- **INF** -**3PL**'

Inflected infinitives share properties with both finite forms and uninflected infinitival forms of the verb. Like finite forms, they license overt subjects with overt agreement. Like uninflected infinitives, they occur only in embedded contexts and reject the complementizer *que* 'that'. These characteristics will be relevant throughout this chapter.

[1] The singular forms of the inflected infinitives in European Portuguese have overt inflection only for 2nd person.

3 Theories about the origin of inflected infinitives in Portuguese[2]

The debate about the origin of inflected infinitives in Portuguese revolves around two major hypotheses. The first is that inflected infinitives developed from simple infinitives. The second hypothesis is that inflected infinitives came from the Latin imperfect subjunctive. Maurer (1968) gives an overview of earlier attempts to defend each hypothesis. The debate about the origin of inflected infinitives in Portuguese has been especially controversial due to the fact that the oldest records of Portuguese already show forms corresponding to inflected infinitives.

According to the hypothesis that the simple infinitive gave rise to the inflected infinitive, regular person/number affixes were added to regular infinitives, yielding the inflected forms. For Meyer-Lübke (1890) and Bourciez (1946) this might be the result of confusion between the form of the inflected infinitive and the subjunctive future, suggesting a process of analogy between the two forms. I argue against this analysis in this chapter.

Martins (1999) discusses several possible arguments in favor of the infinitive-based hypothesis. First, certain Romance languages in which inflected infinitives appeared developed other inflected non-finite forms. Old Neapolitan developed inflected gerunds and (more rarely attested) inflected participles (Loporcaro 1986, Vincent 1996, 1998). Inflected gerunds appeared in some modern dialects of Galician and Portuguese (Longa 1994). Lobo (2001) points out that the most complete paradigm of overt inflection with gerunds in Portuguese was identified the person/number forms in (3) (examples from Lobo 2001)[3]:

(3) a. (tu) vindo+s
'(you) coming-AGR.2SG'
b. (nós) víndo+mos (Dialectal EP)
'(we) coming-AGR.1PL'
c. (vós) vínd (o)+eis
'(you) coming-AGR.2PL'
d. (eles) vind (o)+em
'(they) coming-AGR.3PL'

[2] Parts of the material that follows appeared in an earlier version in Pires 2002 and 2005, and have been significantly revised and extended. I thank Oxford University Press for allowing me to include that material here.

[3] This paradigm was identified by Martins (1954) in Póvoa de Atalaia, Beira Baixa, Portugal.

However, Martins (1999) argues that inflected gerunds and participles in these languages only appeared after the development of inflected infinitives (see also Lobo 2001 for detailed discussion about inflected gerunds in dialectal European Portuguese). This seems to be the case in Galician and Portuguese, since inflected gerunds have not been found in early stages of the language. If other non-finite inflected forms were to be related to the existence of inflected infinitives, it would be the inflected infinitives that contributed to their development rather than the other way around. Second, the functions of the Latin imperfect subjunctive were taken up by the pluperfect subjunctive, the dominant form by the 3rd century CE. Therefore, Maurer (1968) raised doubts about the persistence of the imperfect subjunctive in the Vulgar Latin of the Luso-Romance area. Wireback (1994) has presented evidence to the contrary, as I will indicate in the discussion below about the subjunctive-based hypothesis. Finally, nominative subjects are possible in certain uninflected infinitival clauses of different Romance languages (Ledgeway 1998), which would have created the appropriate environment for the appearance of inflected infinitives. Later I will focus on that argument and propose an account that rules out that possibility and supports the subjunctive-based hypothesis, which I now turn to.

According to the hypothesis that the inflected infinitive originated from the Latin imperfect subjunctive, clauses without a subordinating conjunction and with imperfect subjunctive were reanalyzed into infinitival subordinate clauses. The early attempts to derive the Portuguese inflected infinitives related them to the occurrence of Latin imperfect subjunctives in volitional clauses, because this was a context in which the subordinating conjunction *ut* was often dropped in Latin; for instance *placuit ut traderet* 'it was agreed that he would bequeath', could become *placuit traderet*. However, as pointed out by Maurer (1968), volitional constructions where *ut*–ellipsis was common in Latin do not have a corresponding form with an inflected infinitive in Portuguese. Wireback (1994) proposes a revision of this theory by locating the origin of inflected infinitives in purpose clauses, rather than in complement clauses of volitional predicates. First, Wireback cites Medieval Latin evidence (11th century) from Portuguese territory indicating that a Latin imperfect subjunctive form could be found in purpose clauses, although it had already been replaced by the pluperfect subjunctive in other syntactic contexts (4).

(4) Et intrarunt in placito testimoniale pro in tertio die
dar**ent** testes sicut et fecerunt.
'And they began the hearing in order to, on the third day,
provide-**3PL** witnesses, and they did this.'

Verb forms like *darent* in (4) showed clearly the morphology of the Latin imperfect subjunctive (Rodrigues 1932:3-4), although they have also been

interpreted as inflected infinitives (Piel 1944:399, Martins 1999), since there was no other factor except for the subjunctive morphology that still linked them to the Latin subjunctive. Second, Wireback (1994) also refers to the plausibility of a link by means of phonological change between the Latin imperfect subjunctive and the Portuguese inflected infinitives.

Martins (1999) also explores the subjunctive-based theory for the origin of inflected infinitives and focuses on subsequent changes in the behavior of inflected infinitives from Old Portuguese (hereafter OP) to Modern Portuguese (MP). In particular, she analyzes a type of independent inflected infinitive that became ungrammatical in Modern Portuguese. In Martins' terms, independent OP infinitives were more finite-like than in MP, thus explaining why they could occur in matrix contexts only in OP. She views that as a gradual change that turned a finite form, the imperfect subjunctive, into a non-finite one, the inflected infinitive. In the next section, I will rely on some of the arguments made by Wireback (1994) and Martins (1999) with respect to the subjunctive-based theory, but I will propose an explanation for the origin of inflected infinitives that depends on the interpretation of the primary linguistic data by children from different generations.

4 A learnability explanation for the origin of inflected infinitives

Here I address the issue of the origin of inflected infinitives from the perspective of language acquisition: which specific changes in the primary linguistic data (PLD) led Old Portuguese speakers to incorporate inflected infinitives into their grammars. The path I pursue emphasizes the importance of the PLD for language change. Whatever properties a particular language has depend on the setting of parameters that are part of Universal Grammar (UG). These settings have to be appropriately triggered by properties identified by children when they are exposed to the PLD of a particular language, which I will refer to here as the input. If the input does not have the necessary information for the parameters to be appropriately set, a child fails to set the parameters the same way as in the grammar of his/her parents, yielding a change of grammars. This change extends to a larger population insofar as other children fail to identify in the input the information necessary to set the properties of their grammars the same way as previous generations.

Lightfoot (1999: chapter 6) proposes a model of acquisition in which children scan the input in order to identify certain cues provided by UG, which allow the children to set up the specific properties of their native language. Similar models have been proposed by Fodor (1998), and by Dresher (1999) in the domain of phonology. Cues are pieces of linguistic structure that define properties whose specification is left open by UG. Identifying a cue (or

"structural trigger" in Fodor's terms) plays a role similar to parameter setting in the Government & Binding framework. However, Lightfoot reinterprets the role played by parameters in previous theories. Some cues are found in most (if not all) grammars, and some are found only in certain grammars, and that is the source of language variation. For instance, the cue that allows German–speaking children to converge on a V2 grammar is as in (5), where XP identifies any non-subject maximal projection and C identifies the V2 position, which can be occupied by a complementizer or by V in C. Children attaining a non–V2 language also have the ability to identify this cue in the input. If it is not found, they do not converge on a V2 grammar.

(5) $[_{SpecCP}$ XP$[_{C'}$ C]
(adapted from Lightfoot 1999:153)

Turning now to the origin of inflected infinitives in Portuguese, one can ask what cues led Old-Portuguese-speaking children to interpret the input in a novel way, changing from a system that did not have inflected infinitives to one that did. From this perspective, let us consider the two major hypotheses for the origin of inflected infinitives.[4]

If inflected infinitives originated from Latin imperfect subjunctives, how could the input have changed to yield them? Martins (1999) points out two important properties that distinguish inflected infinitives from subjunctives in Old Portuguese. First, subjunctive clauses take an overt complementizer (*que* 'that') whereas inflected infinitivals never do. Second, according to Zanuttini (1997: 127), infinitives (but not subjunctives) may be taken to lack a specification for mood. This is further supported by the first property, if it is an overt element in the complementizer position clearly carries a [+Mood] feature, thus partially incompatible with infinitives, since they lack an overt complementizer. Therefore, in order for children exposed to Portuguese to learn that their language has subjunctive forms distinct from indicatives and infinitives, it is crucial that they identify a complementizer head that carries a subjunctive mood specification or that they interpret the sentence as carrying a subjunctive

[4] Miller (2003) proposes an analysis of the rise of inflected infinitives (conjugated infinitives – CIs, in his terms) in various languages. He adopts a view similar to the one developed here, by proposing that "Even in languages with obligatory agreement, CIs require salient triggers." However, he considers triggers different from the ones proposed here for the rise of inflected infinitives across different languages.

mood specification.[5] Therefore, the overt cue for specifying the Mood of a clause is:

(6) $[_{CP}$…..+Mood……]

In addition, in order for children to set up the inflectional properties of finite clauses in their language, they need to identify whether the language carries overt verbal inflection. Thus, in scanning the PLD they need to find one of the cues in (7) or (9), depending on whether a verb form carries overt agreement or not: [6]

(7) Cue for overt verbal agreement:
$[_T$ [+Agr]]
Where [+Agr] is overt inflection for person and/or number.

This cue is necessary for the acquisition of finite clauses such as (8), in which the auxiliary verb (in T) carries overt 3Psg (3rd person singular) inflection:

(8) Sue has slept well.

(9) Cue for lack of verbal agreement:
$[_T$ [−Agr]]
Where [−Agr] represents T without overt inflection for person and/or number.

This cue can be found in cases such as the past tense in English, which does not carry distinctive person/number morphology:

(10) Sue call-ed yesterday.

In the cues in (7) and (9) [+Agr] simply indicates overt inflectional morphology, which can be found separately from the main verb, in an auxiliary or a modal verb (in complex verb forms). It is not crucial that this overt morphol-

[5] This opens up that the possibility that the C position can be identified not by the presence of an overt complementizer, but also by the presence of another overt element in C, such as in the case of V to C, as it happens in the case of V2 in languages such as German.

[6] For simplicity, I assume here a non-split inflectional domain (but cf. for instance Pollock 1989, Rizzi 1997 and Cinque 1999 for inflectional domains with multiple projections). The discussion here abstracts away from cues for tense and aspect morphology, also necessary in the acquisition of verbal morphology.

ogy appears in T, although this is possible even in English, in the case of negative sentences:

(11) Sue does not like tomatoes.

The cues in (6), (7) and (9) should be independent from each other in the acquisition process, if one wants to account for the different ways they interact across different verb forms. Portuguese provides clear evidence for that. In the case of indicative and subjunctive, children find both the cues for mood and overt inflection in the input. As for inflected infinitives, even though Portuguese-speaking children do not find a cue for mood, they clearly identify the one for overt agreement morphology (7). In the case of non-inflected infinitives, they only find the cue for lack of overt agreement (9).

That is exactly what should have happened with the first generations that incorporated inflected infinitives in their grammars. If Wireback (1994) is right in saying that the Latin imperfect subjunctive survived in purpose clauses like (4), these clauses offer the appropriate context for a *misinterpretation* of the input. The corresponding Classical Latin clauses were introduced by an overt complementizer *ut*, which was often dropped. Once these clauses could occur without an overt complementizer, new generations no longer had an overt cue to identify them as subjunctive clauses. Even though they were not able to identify the subjunctive mood in the imperfect subjunctives with missing complementizers, they still had clear evidence in the input for the overt agreement morphology found first in the imperfect subjunctive and later preserved in the inflected infinitives.

In fact, a more restrictive situation may have in fact taken place, in that it was only by means of the elimination of the CP projection that the agreement properties of the infinitive could be accessed directly by new generations, not indirectly as the result of being subcategorized for by an embedded C, which was no longer recognized in the input. [7] In sum, what ultimately led to the rise

[7] This addresses certain implications of degree-0 learnability for this analysis, assuming that the approach proposed here is compatible with the existence of a constraint on acquisition and change along these lines (see Lightfoot 1989, 1994). On the one hand, the existence of subjunctives as verbal forms highly restricted to embedded clauses may present a challenge for degree-0 learnability, if subjunctives are analyzed as CPs restricted to embedded domains in a language. In this case, some mechanism is necessary to make the embedded CP-domain of a subjunctive accessible for degree-0 learnability. Alternatives to this effect may be the raising of T to C or a distinction in terms of strong/weak phases in the terms of Chomsky 2000, 2001. I have discussed related issues elsewhere (Pires 2001d). On the other hand, under the current analysis, the fact that the complementizer was dropped would have led new generations to identify the relevant clauses as not projecting a CP, thus eliminating the problems that the presence of an embedded CP would potentially raise for degree-0 learnability. In fact, there is

of inflected infinitives was the incomplete identification of the cues necessary for setting up the subjunctive properties.

One issue I have put aside so far concerns the tense interpretation of the imperfect subjunctive. This is a further element that should have prevented an OP-speaking child from mistaking these forms for inflected infinitives. However, there is evidence that the Latin imperfect subjunctive had a weakened tense specification by imperial times. First, as pointed out by Harris (1978), it could be used in both past and non-past contexts. Second, the pluperfect subjunctive eventually took over the uses of the imperfect subjunctive as the primary past tense subjunctive form (Ernout and Thomas 1953:244). This indicates that the imperfect subjunctive had already lost its past tense specification by the time it was identified as an inflected infinitive by new generations.

Turning now to the infinitive-based hypothesis, it is possible to explain why it is not tenable in the light of a cue-based theory of acquisition and change. Let us assume for a moment that OP did develop inflected infinitives on the basis of non-inflected infinitives. Clearly, the child would have to find in the input the cue for verbal agreement in (7). However, since Latin and early Romance infinitives did not display any overt agreement morphology, it is difficult to see how later generations would be able to identify agreement in the infinitive forms available in the input.

Defenders of the infinitive-based hypothesis have often claimed that infinitives developed overt inflectional morphology in OP partly because they displayed overt subjects. New generations would have felt the need to repair the form of the infinitive on the basis of the rest of the verbal paradigm, extending the overt verb morphology to all forms that displayed an overt subject. In a sense, when children scanned the input and found an overt subject, they would automatically postulate overt verbal morphology for the corresponding verb, if it was a non-finite verb. Therefore, the cue for overt verbal morphology would not be (7), but just the occurrence of a lexical subject. However, the cue-based theory advocated here rules out that possibility for several reasons. First, it emphasizes the need for cues to be locally identified, given the fact that they have to be identified in the input in the same syntactic domains in which they will occur in the acquired grammar (see Lightfoot 1999: chapter 6 for additional discussion). So, this restricts the place for overgeneralizations on the basis of analogies across different syntactic

empirical motivation suggesting that access to at least part of an embedded non-finite clause is possible for learnability purposes, for instance in the account proposed by Lightfoot (1989, 1994) for what counts as an accessible domain for language learnability. Lightfoot argues that at least the head of a non-finite embedded clause and its Spec are still part of a degree-0 learnability domain, which he defines in terms of binding domains.

contexts found in the input, such as the analogy between finite and non-finite forms that would be necessary for an analogy-based explanation for the rise of inflected infinitives in Portuguese.[8]

One can alternatively grant the infinitive-based hypothesis the need to repair the structure of non-inflected infinitives' overt subjects on the basis of a requirement of Universal Grammar (UG), namely that DPs need to be assigned Case. However, if it were so, it would be difficult to understand why overt subjects were possible at all in Latin and in Early Romance, if they were not Case-checked by other mechanisms such as Exceptional Case Marking (ECM), which would presumably have remained in the transition from Late Latin to OP. Furthermore, non-inflected infinitives with non-ECM overt subjects (personal infinitives) are possible in certain contexts across languages (for Spanish, Rumanian, and several Italian dialects, see Ledgeway 1998; see also chapter 3, section 8.2) and there is no record of other languages where the occurrence of lexical subjects within infinitive domains clearly led to the development of inflected infinitives. If there is any strategy common across these languages for assigning Case to overt subjects of infinitives, it appears to involve I-to-C movement. Interestingly, that strategy was available in OP (Ribeiro 1995) and is currently found in European Portuguese inflected infinitives, suggesting that although the overt inflection of infinitives is instrumental in assigning Case to infinitive subjects (see chapter 3), the presence of verb inflection should not be the result of a repair operation required by UG in the transition from Latin to OP. Even if it were so, one crucial aspect necessary for the infinitive-based hypothesis to go through should be a high occurrence of lexical subjects with infinitives in OP. However, Wireback (1994) shows exactly the opposite pattern for the use of inflected infinitives in a set of texts dated up to the early 15th century:

(12) Inflected infinitive subjects (Wireback 1994:549, table 2):

subject status	occurrences	percentages
no lexical subject	138	90.2
with lexical subject	15	9.8

[8] This raises questions regarding which mechanisms would have given rise to inflected gerunds and inflected participles, in the dialects that developed them. If indeed analogy played a role in the rise of such forms, the analogy would at least have been limited within the paradigm of non-finite forms found in the language, in that inflected gerunds or participles would appear in grammars that already had inflected infinitives. Under these circumstances, at least some restriction is necessary to prevent analogy between finite and non-finite forms.

Other Romance languages that developed inflected infinitive forms appear to have taken a path similar to the one suggested here for Portuguese. The inflected infinitives of Old Neapolitan have been argued to derive from the Latin pluperfect indicative (Loporcaro 1986), whereas those found in the Logudorese-Nuorese dialects of Sardinian have also been said to derive from Latin imperfect subjunctives (Jones 1992).

Now let me address one further aspect in the history of inflected infinitives that might be taken to represent a problem for the approach proposed here. As argued by Martins (1999), unlike its modern counterpart, OP did not allow inflected infinitival clauses as complements of causative and perception verbs (ECM verbs). They become common as complements of ECM verbs only in the 16th century. According to Martins, this was so because ECM complements in OP had a more impoverished structure, which did not support agreement, negation or syntactic cliticization within the infinitive clause. Martins argues that a change in the selectional properties of ECM verbs yielded the possibility of a less defective structure for their complements, allowing later for the occurrence of inflected infinitives as complements of causative and perception verbs. What is relevant with respect to this further change is that the late appearance of inflected infinitives as complements of causative and perception verbs may be taken to be a counterargument to the view proposed here that inflection could not have developed within non-inflected infinitives with a lexical subject. However, this change is clearly different from the one that originally gave rise to inflected infinitives in Portuguese. First, in the case of complements of causative and perception verbs, the use of inflected infinitives constituted just an extension to another context of the use of an inflected infinitive form that was already present in the language, and not an innovation by which an inflected infinitive would have appeared in new grammars without any relevant trigger on the PLD, as proposed in the analogy-based view that I attempt to restrict here. Second, as argued by Martins, the use of inflected infinitives seemed to parallel the appearance of object clitics and negation within embedded infinitive complements of causative and perception verbs. These two properties already applied to inflected infinitives in other contexts in the language, and did not need to be postulated as innovations in causative and perception verb contexts.

In sum, the arguments above strongly support the hypothesis that inflected infinitives developed from another inflected verbal form (imperfect subjunctives from late Latin) that already existed in the primary linguistic data new generations were exposed to. In the case of the hypothesis that inflected infinitives in OP grew out of uninflected infinitives, the necessary steps would be much more complex in terms of acquisition, since it would actually be

necessary to postulate that infinitives developed a person/number inflection system that was not found in any other non-finite context.[9]

5 Explaining the effects of the loss of inflected infinitives

In this section I turn to the analysis of a second major change in the history of inflected infinitives in Portuguese: their ongoing loss in Colloquial Brazilian Portuguese (hereafter ColBP). The loss of the inflected infinitive morphology might be taken to turn inflected infinitives entirely into non-inflected infinitives, with respect to their syntactic properties. However, that loss affects only the licensing of null subjects, not the licensing of overt subjects. First, I summarize the analysis presented in chapter 3 for the licensing of null subjects in dialects that still have the contrast between inflected and non-inflected infinitives, and show how ColBP follows a similar pattern. Finally, I address the licensing of overt subjects in infinitives and provide a cue-based account of how the properties of the PLD allow for the licensing of overt non-ECM subjects with the now uninflected infinitives of most ColBP dialects, a possibility that is not available outside ECM contexts in dialects where inflected infinitives are productive.

5.1 Licensing of null subjects in dialects with inflected infinitives

As I discussed in chapter 3, In European Portuguese (EP) and Standard Brazilian Portuguese (StdBP) only null subjects of non-inflected infinitives consistently show properties of obligatory control (OC), whereas subjects of inflected infinitives display properties of non-obligatory control. For instance, obligatory control null subjects, standardly represented by PRO (but see chapter 3 for a different analysis of these phenomena), must have a local c-commanding antecedent (13a). So, the entire bracketed matrix DP in (13a) is the only possible antecedent for PRO in the embedded clause. A local c-commanding antecedent is not needed for the subject of the embedded infinitive in (13b), which is inflected. Besides the possibility indicated in that example, in which *pro* is co-referential with a non c-commanding antecedent (*nossos* 'our'), *pro* could also be disjoint in reference from any DP in the sentence, at least with a 1st person plural inflected infinitive.

[9] Similar problems arise with respect to the development of inflected gerunds in dialects of Western Iberian languages. However, it has been observed that these forms were found in languages that already had another inflected non-finite form, suggesting a process similar to the one that took place with infinitives as complements of causative and perception verbs in Portuguese. See also fn. 8.

(13) a. [Os pais do Paulo$_j$]$_k$ lamentam PRO$_{*j/\,k}$ chegar tarde.(EP)
[The parents of-the Paulo$_j$]$_k$ regret PRO$_{*j/\,k}$ arrive-**INF** late.
'[Paulo$_j$'s parents]$_k$ regret PRO$_{*j/\,k}$ to arrive late.'

b. [Os nossos$_j$ pais] lamentam *pro*$_j$ chegarmos tarde.
The our$_j$ parents regret *pro*$_j$ arrive-**INF-1PL** late.
'Our parents regret our arriving late.'

Second, OC PRO only allows a sloppy reading under ellipsis. For instance, when the elided material — 'accepts to vote all the proposals today' — is interpreted in (14a), it can only mean that 'Ana herself accepts to vote all the proposals today'. This contrasts directly with (14b), where the second conjunct must be interpreted as 'Ana accepts that we vote all the proposals today', corresponding to a strict interpretation of the ellipsis site.

(14) a. O Pedro$_j$ aceita PRO$_{j/*k}$ votar todas as propostas hoje e a Ana também. (=Ana aceita votar todas as propostas hoje (StdBP).
The Pedro$_j$ accepts PRO$_{j/*k}$ vote-INF all the proposals today and the Ana too. (=Ana accepts to vote all the proposals today)
'Pedro accepts to vote all the proposals today and Ana does too. (=Ana accepts to vote all the proposals today).'

b. O Pedro$_j$ aceita *pro*$_k$ votarmos todas as propostas hoje e a Ana também. (=Ana aceita que nós votemos todas as propostas hoje) (StdBP).
The Pedro$_j$ accepts *pro*$_k$ vote- INF -1PL all the proposals today and the Ana too. (=Ana accepts that we vote all the proposals today).
'Pedro accepts that we vote all the proposals today and Ana does too. (=Ana accepts that we vote all the proposals today).'

Second, consider the impossibility of split antecedents with OC PRO. PRO in the non-inflected infinitive in (15a) does not allow an interpretation in which both 'I' and 'Maria' form a set that behaves as the antecedent for PRO. (15b) is clearly distinct in that respect. Here *pro* is co-referential with a set of elements that can include both 'I' and 'Maria'.

(15) a. Eu_j convenci a $Maria_k$ $PRO_{k/*j+k}$ a viajar com o Paulo. (EP & StdBP/some informants)
I_j convinced the $Maria_k$ $PRO_{k/*j+k}$ to travel- INF with the Paulo.
'I_j convinced $Maria_k$ $PRO_{k/*j+k}$ to travel with Paulo.'

b. Eu_j convenci a $Maria_k$ pro_{j+k} a viajarmos com o Paulo.
I_j convinced the $Maria_k$ pro_{j+k} to travel- INF -1PL with the Paulo.
'I_j convinced $Maria_k$ that we_{j+k} (should) travel with Paulo.'

Chapter 3 presents a detailed analysis of the contrast between inflected and non-inflected infinitives in Portuguese with respect to properties including the ones mentioned above. Following a proposal by Hornstein (1999), OC PRO in the non-inflected infinitive was analyzed as the result of NP-movement for Case-checking reasons. That analysis allowed multiple θ-roles to be discharged on DPs, as the result of movement (following proposals in Bošković 1994, Lasnik 1995, and contra Chomsky 1995a, 2001). A movement analysis explains, for instance, why split antecedents are not possible in (15a),[10] if we consider that the embedded DP cannot move into two different positions in the matrix clause. Consider the analysis for (16).

(16) a. $[_{TP2}$Nós$_j$ $[_{VP2}$ ~~nós~~ conseguimos $[_{TP1}$ ~~nós~~$_{j/*k}$ $[_{VP1}$ ~~nós~~ sair]]]].[11]
$[_{TP2}$We$_j$ $[_{VP2}$ ~~we~~ managed $[_{TP1}$ ~~we~~$_{j/*k}$ $[_{VP1}$ ~~we~~ leave-INF]]]].
'We managed to leave.'

The subject of the matrix clause in (16) is first merged in the embedded clause, where it is assigned a θ-role in VP1 and the EPP-feature in the Spec of TP1, but cannot have its Case checked. That is because [Spec, TP] of a non-inflected infinitive clause doesn't have a complete ϕ-set (at least person and number; Chomsky 2000, 2001), so it is not a Case-checking position, although it carries a [–interpretable] EPP-feature. Therefore, the embedded subject must be raised to the matrix clause where it is assigned a θ-role in VP2, the EPP-feature of TP2, and its own Case feature, freezing in [Spec, TP2].

[10] The judgments reported in this case correspond to speakers who consider split antecedents to be ungrammatical. This is also what I observed for clausal gerunds in chapter 1, although in other obligatory control domains split infinitives have been taken to be acceptable (see e.g. Landau 2003).

[11] As in chapter 3, I analyze Portuguese infinitives as TPs. This is supported by the analysis of obligatory control subjects as involving A-movement to the matrix clause, which I adopted in chapter 3. A-movement out of a CP might face additional complications. I do not address here the optional fronting of the verb and facts about wh-movement discussed in Raposo (1987), who argues for a distinction between TP and CP for inflected infinitives in EP. Galves (1991) proposes that they are always CPs.

Once all the features have been checked the lower copies are deleted and the derivation converges.

Recall now why inflected infinitives allow either an embedded overt subject or a null subject with non-obligatory control interpretation. T of the inflected infinitive in (17) carries a full set of ϕ-features (as indicated by the overt person/number morphology), which can check the Case feature of a null subject or overt DP occurring in the subject position of the infinitival clause, blocking any further movement.

(17) [$_{TP2}$ A Maria$_j$ [$_{VP2}$ ~~a Maria~~ chegou [$_{PP}$ antes de [$_{TP1}$ nós/*pro*$_k$ [$_{VP1}$ ~~nós/*pro*~~$_k$ sairmos]]]]].
[$_{TP2}$ the Maria$_j$ [$_{VP2}$ ~~the Maria~~ arrived [$_{PP}$ before [$_{TP1}$ we/*pro*$_k$ [$_{VP1}$ ~~nós~~/ ~~*pro*~~$_k$ leave-INF-1PL]]]]].
'Maria arrived before we left.'

Notice that in (17) the adjunct is built first in the derivation separately from the matrix clause, allowing for extraction out of the adjunct (by sidewards/interarboreal movement) before it is merged with the matrix clause. See chapter 3 for further details. So, what blocks movement of the embedded subject is not the fact that the infinitive is an adjunct, but the fact that the embedded subject cannot move further after having its Case checked. Movement is blocked in the same way in instances of an inflected infinitive complement selected by the matrix verb.

I refer to the null subject in (17) as *pro*, which is understood as an independent lexical item in most accounts (see chapter 3). It stands for a null subject that is not the residue of further movement of the subject to the matrix clause, which explains why it is not subject to the obligatory control properties I discussed before.

However, both in EP and StdBP, T of a non-inflected infinitive cannot check the Case feature of a lexical subject in (18a) or of *pro* in (18b). These examples are parallel to (17), but they are ungrammatical because the embedded infinitive is not inflected. Since the non-inflected infinitive T does not have a complete set of ϕ-features in (18), the derivation crashes because the embedded subjects have not been able to check their Case.

(18) a. * [$_{TP2}$ A Maria$_j$ [$_{VP2}$ligou [$_{PP}$ antes de [$_{TP1}$ nós$_k$ [$_{VP}$ ~~nós~~$_k$ sair]]]]].
[$_{TP2}$ A Maria$_j$ [$_{VP2}$ called [$_{PP}$ before [$_{TP1}$ we [$_{VP}$ ~~we~~ leave-INF]]]]].
* 'Maria called before we to leave'

b. * [$_{TP2}$ A Maria$_j$ [$_{VP2}$ligou [$_{PP}$ antes de [$_{TP1}$ *pro*$_k$ [$_{VP}$ ~~*pro*~~$_k$ sair]]]]].
[$_{TP2}$ A Maria$_j$ [$_{VP2}$called [$_{PP}$ before [$_{TP1}$ *pro*$_k$ [$_{VP}$ ~~*pro*~~$_k$ leave- INF]..
* 'Maria$_j$ called before pro$_k$ to leave'

Nevertheless, as I will analyze next, the loss of inflected infinitives in Colloquial Brazilian Portuguese has yielded unexpectedly opposing results with respect to the licensing of non-ECM subjects in infinitive examples like (18). Whereas (18b) is ungrammatical in ColBP, (18a) is grammatical, contrary to what happens in the dialects with inflected infinitives. In the remainder of this section I will explain these two dissimilar effects in terms of a cue-based theory of language acquisition and change.

5.2 Loss of verbal agreement in Colloquial Brazilian Portuguese

Different dialects of ColBP have lost the overt inflectional morphology for person/number in inflected infinitives, because of two different factors. First, there has been a general reduction in the number of distinctive verb forms due to the changes in the pronominal system shown in (19).

(19) Changes in the pronominal system in ColBP:

a. The new 2nd person form (*vocês)* 'you(pl)') requires the 3rd person verbal form, also used for 3rd person with names and with 3rd person pronouns (*ele(s), ela(s)* 'he, she (they)').[12]

b. The form *a gente* 'the folks' has replaced the 1st person plural pronoun *nós* 'we' in subject position in most dialects, and its agreement morphology corresponds to 3rd person singular, although it refers to 1st person plural in the discourse, as shown in the gloss in (20).

Second, there was a general reduction in the verbal inflection of Brazilian Portuguese since the 18th century, partially due to independent factors but also to the elimination of the inflectional distinctions among the different persons in the verbal paradigm, as shown in (19). Its effects for inflected infinitives are seen in (20), which shows that the loss of inflectional morphology has caused inflected infinitives to become identical to non-inflected infinitives. Only two distinct inflectional forms exist in Standard Brazilian Portuguese inflected infinitives (1st person plural and 3rd person plural), but in ColBP the 3rd person plural marking for person/number is used less and less, and has disappeared entirely from some dialects, together with the 1st person plural marking even in dialects that still license the form *nós* 'we'. For these reasons, one might just say that inflected infinitives have been completely wiped out from ColBP. Although that is true from a morphological point of view, the fact that infinitives in ColBP still license overt non-ECM subjects indicates that the

[12] These changes in the verbal forms resulting from change of overt pronouns carried over to the choice of verbal person forms used with null subject *pro.*

syntactic properties associated with inflected infinitives in previous stages of the language were not entirely eliminated.

(20) Loss of inflected infinitive morphology in ColBP:

SG	1	(eu) **falar**	'(I) **speak-INF-ø**'
	2/3	(você/ele/ela) **falar**	'(You/he/she) **speak-INF -ø**'
PL	1	(nós) **falar~~mos~~**	'(We) **speak-INF-~~1PL~~**'
	1	a gente **falar**	'(We) **speak-INF-ø**'
	2/3	(vocês/eles/elas) **falar~~em~~**	'(You/they) **speak-INF-~~3PL~~**'

The widespread loss of verbal agreement is discussed in Lemle and Naro (1977), who looked at the frequency of verbal agreement for speakers from different social classes, and found that certain speakers may drop verbal agreement almost entirely, depending on the position of the subject (21). These results cover all different verbal contexts.

(21) Frequency of verbal agreement in BP according to position of subject (from Lemle & Naro 1977):

Informant	Distant or elided subject	Local preverbal subject	Post-verbal subject
AD	22/35 = 62.9%	45/107 = 42.1%	1/18 = 5.6%
TI	27/136 = 19.9%	22/222 = 9.9%	1/24 = 4.2%
CE	50/64% = 78.1%	63/115 = 54.8%	1/8 = 12.5%

The more severe loss of verbal inflection when there is no local preverbal, subject, as shown in (21), suggests that the loss of verbal agreement in Brazilian Portuguese correlates with the occurrence of overt subjects in the language, and the position in which the subject is realized. In general, post verbal subjects do not trigger overt agreement, whereas preverbal, non-local or elided subjects do, especially for speakers who still use verbal agreement frequently.[13]

[13] The factors that determine the occurrence of overt agreement may be of two kinds: (i) overt agreement arises when the overt lexical subject raises overtly to Spec, TP, in the case of preverbal subjects; (ii) in the absence of a local overt subject, overt inflection itself may be required to satisfy certain features of the clause. These may involve identification of a null subject, in dialects that preserve null referential subjects.

5.3 Null subjects of infinitives in Colloquial Brazilian Portuguese

The loss of inflectional morphology in infinitives in ColBP as described in the previous section has a clear syntactic effect: properties of NOC are not licensed with the now uninflected infinitives of ColBP. Therefore, the possibility of a null subject (*pro*) with non-obligatory control properties is blocked in an embedded infinitive example like (18b), repeated here in (22).

(22) * [$_{TP2}$ A Maria$_j$ [$_{VP2}$ligou [$_{PP}$antes de [$_{TP1}$ *pro*$_k$ [$_{VP}$ ~~*pro*~~$_k$ sair]]]]].
[$_{TP2}$ A Maria$_j$ [$_{VP2}$called [$_{PP}$before [$_{TP1}$ *pro*$_k$ [$_{VP}$ ~~*pro*~~$_k$ leave-INF]]]]].
* ‘ Maria called before we to leave’

Consider another example (23) from ColBP, in which the 1st person plural verb form for the inflected infinitive can no longer be used. As we saw in the previous section, in ColBP the 1st person plural pronoun *nós* ‘we’ has in general been replaced by the form *a gente* (literally ‘the folks’, but interpreted as ‘we’).

(23) Eu$_j$ convenci a Maria$_k$ [PRO$_{k/*j+k}$ a viajar(*mos) hoje].(ColBP)
I$_j$ convinced the Maria$_k$ [PRO$_{k/*j+k}$ to travel-INF-(*1PL) today].
‘I$_j$ convinced Maria$_k$ PRO$_{k/*j+k}$ to travel today.’

Although the verbal morphology of the embedded infinitive above is compatible with the current 1st person plural form *a gente*, the null subject of the embedded infinitive in (23) cannot receive the interpretation associated with 1st person plural. That is, only obligatory control properties are possible in such cases, and the only possible interpretation for the null subject of the embedded infinitive has *Maria* as its antecedent. As we saw in the previous section, this is explained if the null subject of an infinitive without inflection is just the residue of movement of the DP *Maria* to the matrix clause.

In this respect, ColBP behaves like the other Portuguese dialects that still preserve inflected infinitives, since its now morphologically uninflected infinitive licenses null subjects exactly like the non-inflected infinitive found in other dialects. However, ColBP now has only the form corresponding morphologically to non-inflected infinitives, so it can only license an infinitive null subject that has obligatory control properties, which I analyzed in section 5.1 as the result of A-movement to the matrix clause. In this respect, ColBP has become like other languages that do not have an inflected form for the

infinitive (English, French, Spanish), which usually license in infinitives only null subjects with obligatory control properties.[14]

From the perspective of language acquisition and change, the facts above suggest that the licensing of *pro* (a null subject with non-obligatory control properties) in a language with verbal agreement is dependent on the occurrence of overt verbal agreement in the sentence.[15] Therefore, EP children have to identify a cue like (24) in the input in order to internalize *pro* as part of their grammars.

(24) $[_{TP} \varnothing [_{T}$ [+Agr]…]]
Where [+Agr] is overt inflection for person and/or number.

Crucially, the child has to be able to identify clearly that there is no overt subject in the relevant input, as indicated by ∅ in (24). Agreement itself may be realized directly on the Tense head, or it may be realized on a verbal head locally subcategorized for by T, even if this verbal head does not raise overtly to T. Any verbal forms that contain person/number agreement, including auxiliaries, modals, and main verbs, will be relevant for the identification of the cue (24) by the child. With respect to ColBP (and other languages without inflected infinitives, for that matter), if children of new generations are exposed to input where (24) is not available in infinitives, they do not allow for *pro* in that context in their grammars. This provides a cue-based explanation for the observations made by Rodrigues (2002), who argued that there was a general weakening of verbal inflection in ColBP, blocking the possibility of a null subject with non-obligatory control properties (*pro*) in embedded finite contexts. It is necessary to add that the cue (24) is just one possible way to allow children to identify *pro* as part of their grammar. Since languages with impoverished agreement systems such as Chinese also license *pro* (see Jaeggli and Safir 1989), other mechanisms must be available in UG to trigger the occurrence of a null subject with non-obligatory control properties.

[14] But see Mensching 2000 for discussion of a wide range of cases of overt subjects in infinitives in Romance, and Torrego 1998 specifically regarding overt subjects of infinitives in Spanish.

[15] This has some connection to various theoretical proposals regarding the licensing of *pro* in languages with overt verbal agreement (see e.g. Rizzi 1986 for some early work on this), even though I put aside certain issues such as the hypothesis that uniformity of agreement may also play a relevant role (see Jaeggli and Safir 1989). Alexiadou & Anagnostopoulou 1998 make a proposal to eliminate at least expletive *pro*, arguing that there is an EPP requirement which can be satisfied by the inflection on the verb, instead of having a DP merge in Spec, TP.

In sum, a cue-based account for the loss of inflectional morphology in inflected infinitives in Portuguese provides a straightforward explanation for why ColBP has lost its ability to license *pro* in these contexts.

Finally, from the perspective of learnability, one actually expects the child to look for the cue in (24) not in embedded non-finite domains, but in unembedded domains such as simple matrix clauses. In case null subjects (*pro*) are identified in matrix clauses on the basis of overt agreement, they can also occur in embedded contexts that display overt verbal inflection.[16]

5.4 Licensing of overt subjects in non-inflected infinitives

I turn now to the seemingly unexpected effect of the loss of inflectional morphology in ColBP inflected infinitives: they did not lose their ability to license overt subjects, which indicates that the morphological loss didn't simply turn them into the usual kind of non-inflected infinitives, which do not license overt non-ECM subjects in other dialects. Therefore, examples like (18a), turn out to be grammatical in ColBP, as in (25a) (also with the possibility of full DPs as overt embedded subjects), even though the infinitive no longer has the inflectional morphology associated with Case checking in other dialects. Furthermore, the impossibility of an oblique or accusative pronoun[17]

[16] Notice, however, that non-obligatory control null subjects may only occur in a restricted way in matrix clauses in Brazilian Portuguese, without extending to embedded clauses. It is possible to have a null 1st person singular subject in the matrix clause in (ib), but not in the related (ic). Given that these cases of null subjects do not extend automatically to embedded subjects, something else needs to be said about the mechanism that licenses them. Rodrigues (2002, 2004:82-93) analyzes cases such as (ib) as topic deletion restricted to matrix clauses, following Huang 1984, and not as involving the mechanisms required for licensing referential *pro* on the basis of agreement, and which would be related to the cue in (24).

(i) a. O que você fez?
The what you did?
'What did you do?'
b. *pro* li um livro.
pro read-1SG a book.
'I read a book.'
c. Todo mundo pensa que eu/**pro* li um livro.
Everyone thinks that I/*pro* read-1SG a book.
'Everyone thinks that I read a book.'

[17] Oblique pronouns are the pronominal forms that also occur as complements of prepositions in different dialects of Portuguese. They are distinct from accusative and dative pronouns used as direct or indirect objects of verbs, and which behave as clitics, as shown by the contrast in (i). Notice that the accusative and dative forms of pronouns are morphologically distinct only in the 3rd person:

in the subject of the infinitive in (25a) indicates that this does not correspond to an instance of ECM, which licenses accusative Case in combination with clitic climbing in Portuguese, as shown by (25b):

(25) a. [$_{TP2}$ A Maria$_j$ [$_{VP2}$ ligou [$_{PP}$ antes de [$_{TP1}$ nós /eu / *mim-OBL/ *me.ACC sair]]]]]. (ColBP)
[$_{TP2}$ A Maria$_j$ [$_{VP2}$ called [$_{PP}$ before of [$_{TP1}$ we.NOM/ I.NOM/ *me.OBL / *me.ACC leave-INF]]]]].
'Maria called before we/I/*me left.'

b. [$_{TP}$ A Maria$_j$ [$_{VP2}$ me.ACC viu [$_{VP1}$ ~~me~~ sair]. (BP)
[$_{TP}$ A Maria$_j$ [$_{VP2}$ me.ACC saw [$_{VP1}$ ~~me~~ leave-INF]
'Maria saw me leaving.'

Notice that the occurrence in ColBP of similar examples embedded in the subject position of the matrix clause (26) shows that the subject of the infinitive does not have its Case checked directly by an element of the matrix clause.

(26) [O Carlos e o Pedro/eu.NOM/*mim.OBL/*me.ACC chegar cedo] não surpreendeu ninguém. (ColBP)
[The Carlos and the Pedro/I.NOM /*me.OBL /*me.ACC arrive late] not surprised noone.
'[Carlos and Pedro/I/*me arriving late] did not surprise anyone.'

Examples like (25) and (26) do not occur in dialects with inflected infinitives, where an inflected infinitive is required in the embedded clause in order for the non-ECM embedded subject to have its Case checked. It has been argued that (inflected and non-inflected) infinitive clauses need to occur in a Case-checking position in dialects with inflected infinitives (EP, see Raposo 1987). That requirement also holds for the now uninflected infinitives of ColBP, where the relevant distinction is only that an overt non-ECM subject can occur without overt morphology in the infinitive. Given the dependence between overt subject licensing and overt inflection in non-ECM infinitives in other dialects, it is puzzling that although ColBP lost the overt morphology of

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(i) a. Ele me falou da Maria.
He me-DAT talked of-the Maria.
'He talked to me about Maria.'

b. Ele falou de mim.
He talked of me-OBL
'He talked about me.'

inflected infinitives, it didn't lose the possibility of overt subjects with non-ECM infinitives.[18]

I turn now to an explanation of this puzzle in the light of a cue-based theory of acquisition and change. Children exposed to EP will clearly be able to identify the cue for overt agreement introduced in (7) and repeated below. That cue is also crucial in learning other languages that have overt agreement in finite domains, such as Italian, Spanish and German:

(27) Cue for overt verbal agreement:
[$_T$ [+Agr]]
Where [+Agr] is overt inflection for person and/or number.

Before we consider the status of ColBP let us consider a possibility that is opposite to EP: that of a language that does not have overt agreement either in matrix or in embedded clauses. That appears to be the case of Chinese. Chinese children do not find the cue for overt agreement in their PLD. The question then is how overt subjects have their abstract Case checked in Chinese. In the Minimalist Program (Chomsky 1995a, 2000, 2001) even though there is no overt agreement morphology, there is still a syntactic operation involving person and/or number feature agreement, which is necessary for structural Case checking. That operation, referred to as Agree in Chomsky 2000, 2001, is taken to be a property of UG that applies to any language. So, Chinese seems to instantiate only the syntactic counterpart of agreement, whereas EP displays both syntactic and morphological agreement. Hence, morphological agreement can be taken as a language specific morphological realization of a universal syntactic relation Agree. In this respect, a Chinese child finds the cue for lack of agreement morphology, introduced in (9) and repeated below:

(28) Cue for lack of verbal agreement:
[$_T$ [−Agr]]
Where [−Agr] represents T without overt inflection for person and/or number.

[18] Notice that ColBP examples (25a) and (26) contrast with (i), in which some speakers accept or prefer an oblique pronoun as subject of the infinitive, indicating that these speakers may analyze infinitives as instances of ECM only when selected by the preposition *para* 'for', but not in other positions:

(i) Isso é para eu / mim fazer. (ColBP)
This is for I.NOM/ me.OBL do.
'This is for me to do.'

Turning now to overt subject licensing, it seems to be a general fact about languages that they may have overt subjects at least in matrix domains and, usually, also in embedded domains. Languages vary with respect to the structural conditions under which abstract Case checking takes place. For some languages, it depends on the occurrence of overt inflection in non-ECM contexts. With respect to Portuguese, once the person/number agreement system is in place in EP, we expect the child not to produce overt non-ECM subjects in contexts where overt verbal agreement does not occur. EP speakers learn that nominative Case is checked in the presence of overt verbal inflection. In terms of a cue-based theory of acquisition and change, the appropriate cue EP children need to find in their PLD should roughly be just an extension of the overt morphology cue (27), as shown in (29). I simplify the representation of the cue here, putting aside the possibility of structural Case checking when the DP that needs to check its Case does not move overtly to the Spec of the Case-checking functional head, as is argued to happen for instance in the case of postverbal subjects in Romance languages such as Italian and Spanish and in *there*-expletive constructions in English.[19]

(29) Cue for structural Case checking in the presence of overt morphology:
[$_{TP}$ DP [$_{T'}$ [+Agr]…]]

As for Chinese children, they need to find a different cue for the acquisition of structural Case checking, one that allows for Case checking in the absence of overt morphology, thus an extension of cue (28):

(30) Cue for structural Case checking in the absence of overt morphology:[20]
[$_{TP}$ DP [$_{T'}$ [–Agr]…]]

One question arises with respect to the setting of both verb inflection and the structural Case-checking properties of individual languages. Why can't one assume the existence of a default setting for both of them? Let us see why a default setting is not possible in the latter case, given the facts from ColBP

[19] Notice as well that structural Case can optionally be realized morphologically, and that should be also part of the cue-based system, although this issue is not relevant here.

[20] One may consider here also the case of English gerunds, recalling that from a cue-based perspective [Agr] in (28) corresponds to the specification of overt morphology. That is, [–Agr] indicating lack of overt agreement morphology may or may not correlate with a full set of ϕ-features (see chapters 1 and 2 regarding exactly the possibility of this contrast with English gerunds).

with respect to overt subject licensing. In ColBP neither the cue in (29) nor the one in (30) can be eliminated in favor of a default setting for the Case-checking system. ColBP speakers identify the cue in (29) for Case checking given the presence of overt morphology in finite domains. However, when it comes to infinitives, children also learn that non-ECM subjects of infinitives can occur in the absence of inflectional morphology, which corresponds to the cue of (30). So, two settings that might be taken to be the opposite settings of a single parameter (in a binary parameter system) can co-exist in the same language. This is only possible because they are actually due to different cues found in specific domains. The same reasoning explains why both cues (27) and (28) are necessary to set the inflectional properties of EP, especially with respect to the possibility of both an inflected and a non–inflected infinitive, although in a parameter-based system those two cues might be taken to be just the positive and negative setting of a parameter. On one hand, parameter-based acquisition models have usually been understood as all-or-nothing systems, in which a language can have only one setting extending to different contexts. On the other hand, cues are proposed to apply here on a more local basis, and that allows divergent cues to be found in different domains in the same grammar, providing a straightforward account for the data at hand.[21] Therefore, this constitutes a direct empirical argument in favor of cue-based systems, given their more local application in the acquisition of individual grammars, and an argument against parameter-based systems, insofar as they have a more global character that does not allow for the co-existence within the same grammar of the properties associated for instance with both (29) and (30).

Let us return now to the puzzling effect presented at the beginning of this section. The loss of overt inflection in ColBP infinitives didn't lead to the impossibility of overt subjects in that domain because new generations could find in the input only the cue corresponding to lack of overt morphology (28). That was possibly due to changes in the pronominal system mentioned in section 5.2, which led to the elimination of all but one distinct overt form for

[21] Raposo 1987, George and Kornfilt 1981, and Quicoli 1996 propose the existence of a Tense-Agr parameter in order to handle the properties of inflected non-finite domains in different languages. However, the possibility for non-finite domains to be specified as [±Tense] and [±Agr] in the same language (see for instance chapters 2 and 3) creates further complications for these approaches, given that there is no clear way to distinguish the range of non-finite domains from finite domains in certain languages based only on these specifications, depending on the number of different finite and non-finite domains one needs to distinguish.

the infinitival inflection, the one marking 3rd person plural.[22] However, the occurrence of overt non-ECM subjects remained very robust even in infinitive domains, so that new generations were led to interpret the occurrence of overt subjects in the input as manifesting the cue for structural Case marking in the absence of overt verbal agreement (30). This situation yielded the puzzling effect of the loss of inflected infinitives in ColBP, which did not block the licensing of overt subjects in infinitives, although it prevented the new uninflected infinitives of ColBP (which developed from the previously inflected forms) from licensing null subject *pro*.[23]

6 Other changes in Brazilian Portuguese

6.1 Background: A point-of-view projection above TP

In this section I would like to relate the loss of inflected infinitives in Brazilian Portuguese to other changes which now distinguish it from European Portuguese (EP) and other Western Romance languages. As I argue below, I take at least some of these changes to be intimately related, and show how they can follow from a single structural change in the grammar of Brazilian Portuguese. I build on previous work by Uriagereka (1995a, b), where a cluster of properties found in certain Western Romance languages is associated with the existence of a phrase projection associated with point-of-view, and dubbed 'F projection' by him. From a more general perspective, I use different dialects

[22] In dialects that had a more radical loss of inflection, the loss occurred in all verbal domains, turning the grammars into systems very similar to Chinese with respect to verbal agreement morphology and Case checking.

[23] As pointed out by Pilar Barbosa (p.c. 2001), null subject languages such as Catalan, Italian and Spanish display infinitives with a lexical subject, which occurs in post verbal position, whereas French and English, languages without null subjects, display non-finite constructions with a lexical subject in preverbal position. Barbosa (1995) has argued that this contrast is dependent on the Null Subject property. That would be further supported by ColBP, in which the lexical subject appears in preverbal position in the infinitives discussed here, although ColBP is in general losing its ability to license null referential subjects. However, despite the existence of such a correlation, it is still necessary to provide an explanation for how the overt subjects of infinitives are Case marked in these different languages. Further mechanisms for Case marking may be at stake, and one of them may result in the verb-subject order found in null-subject languages, a property that also needs to be acquired by children. Furthermore, certain non-finite constructions carry other structural properties that distinguish them from the infinitives discussed here, as shown for instance by the fact that the infinitives with overt subjects that occur in French are restricted to dislocated adjoined positions and carry a hypothetical interpretation (Martineau and Motapanyane 1996 and references therein). See also chapter 3, section 8.2 for additional discussion about these phenomena.

of Brazilian Portuguese as the testing ground for theories of language change and variation.

According to Uriagereka (1995a), French, Spanish and EP/Galician are paradigmatic examples of three diachronic and parametric settings for clitic placement in Romance. He further suggests that spoken Brazilian Portuguese behaves like contemporary French. I will provide below details as to how both Standard Brazilian Portuguese and Colloquial Brazilian Portuguese fare with respect to the proposal made by Uriagereka. He illustrates this in terms of clitic placement:

(31) a. < clitic, V >
French, (spoken) Brazilian Portuguese?
b. < clitic, …V >
[+tense]
(Castilian) Spanish, Aragonese, Catalan…
c. < ∅, V, clitic>; < Governor, clitic, V>
EP, Galician, Leonese, most archaic dialects

The patterns above are illustrated in (32) to (34). French and Brazilian Portuguese display proclisis in most contexts (32), Spanish displays proclisis in tensed clauses (33), and EP reverts from enclisis to proclisis in the presence of elements such as a complementizer in an embedded clause ((34), EP examples from Raposo & Uriagereka 2005):

(32) a. Il m'a vu. (French)
He me.CL-has seen.
'He saw me.'
b. Ele me viu. (Brazilian Portuguese).
He me.CL saw.
'He saw me.'

(33) Nos escucha. (Spanish)
Us.CL listens-3SG.
'(S/he) listens to us.'

(34) a. (eu) vi-te ontem. (* te vi). (EP)
(I) saw-you.CL yesterday (* you.CL saw)
'I saw you yesterday'
b. ela disse que te telefonou ontem (*telefonou -te)
she said that you.CL called-3SG yesterday (*called-3SG-you.CL)
'She said that she called you yesterday.'

Uriagereka refers to an observation made by Wanner (1987), who argued that the increase in the frequency of attachment of clitics to verbs in Vernacular Latin was caused by the leftward appearance of the verb in certain emphatic clause types: imperatives, quotatives, presentatives, clauses with verb focus and emotively marked utterances. Uriagereka (1995a: 163) then assumes that in the vernacular Latin cases and in the EP cases of V-cl such as (34a), the verb moves to a functional projection (FP) to the left of the clitic,[24] given that FP has a strong F head that attracts the verb. F stands for a category that encodes point of view, thus is used to express matters of topic, focus, emphasis, contrast and so on. Uriagereka argues that the archaic Romance verb has a strong F feature in its morphology, which is checked against an active/strong F position (for a recent approach to active features as the drive for movement, consider e.g. the probe-goal analysis in Chomsky 2000, 2001, see chapter 1 for some relevant details). Furthermore, he points out a cluster of properties (35) usually found in the set of languages in (31c) (Uriagereka 1995a:(2)):

(35) Properties apparently associated with Pattern C (Uriagereka 1995a):
(i) Overt F(ocus) elements
(ii) Overt Focus movement
(iii) 'Recomplementation'
(iv) 'Sandwiched' dislocations
(v) Overt expletives
(vi) Personal infinitives without Aux-to-Comp
(vii) Interpolation of elements between clitics and V

Uriagereka goes on to link these properties to the existence of an active/strong F head, whose feature checking requirements may be satisfied if:

(36) a. an element moves to Spec FP;
b. an element incorporates to F;
c. F cliticizes upwards.

[24] Uriagereka argues that that the clitic left-adjoins to F and then V adjoins to F [yielding the order V-cl-(F)].

(36a, b) are represented by movement of a maximal (XP) or of a minimal projection (a head). (36b) accounts for the order V-cl in EP (34a). (36c) should account for the pattern XP-cl-V of (34b), but the details of this alternative are much less clear,[25] although they are not relevant for the analysis of the BP phenomena discussed below.

Properties ((35i), (iii), (iv), (v) and (vii), which Uriagereka links to a strong F head, do not hold in current BP. If these properties are indeed associated with an active F projection, their loss in BP supports the view that certain properties associated with this projection became inactive in the language. In the next section I turn to Brazilian Portuguese and argue that the change in some aspects of the grammar of BP is partly the result of the loss of properties associated with the F projection.

For Uriagereka, F in EP/Galician is not only active/strong (e.g. attracting a V to adjoin to it) but it also behaves as a clitic, which can relate to a host V to its left after V-raising (34a) or by hopping onto the next head up (34b). Uriagereka argues that French has no syntactically overt F, given that V movement does not take place as it does in EP above. However, he also argues that the licensing of clitics (particularly 3rd person clitics, for him) occurs by head-movement to the head of FP. However, given Uriagereka's argument that French has no syntactically overt F, his argument that 3rd person clitics left-adjoin to F needs to be revised, given the existence of a full clitic paradigm in French, which includes third person clitics. If third person clitics can only be licensed in F, as argued by Uriagereka, F should also be expected to be available in French, contrary to what (32a) and similar French cases show.

To avoid arguing that certain syntactic projections (F in this case) are not realized in certain languages, one alternative is to argue that F is not active/strong in French, so it cannot trigger V-adjunction to its head, although it can still license clitics. Another alternative, which I assume here, is to take the clitic to adjoin to a functional projection (e.g. IP) lower than FP. This can explain the different patterns in conjunction with the argument that V-to-F takes place as in the case of EP/Galician. In one of the earliest approaches to movement, Kayne 1991 argues that clitics invariably left-adjoin to a functional head (IP), and the order V-cl in infinitives results from the V having moved leftward past IP (see also Cardinaletti and Roberts 1991 on related issues; and Martins 1994, Barbosa 2000, Raposo 2000 for different analyses of the EP facts.). One argument that will be crucial in the next sections is the hypothesis

[25] For example, if cliticization is a phonological (PF) operation, it can satisfy the feature checking requirements of F only in case feature checking is required only by PF. Still, important ordering considerations arise.

that there may be V-movement (which may end up not being triggered in the acquisition of a new grammar) to a position higher than the landing site of clitics (presumably higher than IP), but not as high as C^0 (given e.g. that modern EP and late 18th BP show V-movement but are not V2 or V-in-C languages). The argument that F is active/strong in EP/Galician and triggers for instance V movement above T provides an explanation for why EP/Galician clitics cannot occur in initial position (contrary to BP, Spanish and the other languages in (31).

6.2 Loss of inversion in BP

Besides the loss of inflected infinitives in ColBP with the effects analyzed in section 5, another striking change in the grammar of BP is the loss of verb-subject (VS) inversion across a variety of dialects in which it was possible in the period including the 18th and 19th centuries. First, Morais 1993:284-5 shows that in the 18th century VS order was still fairly common in declarative sentences in BP (38%), although SV orders corresponded to between 62% and 72% of Morais' different sets of data. By the late 19th century VS order decreased to about 10%, suggesting that V movement to a position to the left of Spec, IP was no longer productive.

The loss of VS order in questions may represent the last effect of a loss of V-movement to C. Old/Modern EP and 18th BP (37a,b) usually displayed VS order (100% in 18th century BP direct questions), and a very low rate of SV order in *wh*-questions, whereas the SV order took over by the early 20th century in BP. Contemporary Colloquial BP (ColBP) no longer allows inversion in *wh*-questions (37b,c). Furthermore, VS order in *yes/no* questions (which also decreased in 18th century EP) has now disappeared from BP (Duarte 1992, Rossi 1993). The loss of inversion as in (37b,c) indicates clearly the loss of V-to-C in BP.

(37) a. Que tem Deus de ver comigo? (Gil Vicente, 16th c. EP)
What has God of see with-me.OBL
What does God have to do with me?

b. O que faz a Maria? (EP/19th BP/*ColBP)
The-what does the Maria
'What does Maria do?'

c. O que (que) a Maria faz? (ColBP)
The-what (that) the Maria does
'What (does) Maria do?'

In addition, even StdBP, which still shows occurrences of inflected infinitives, rejects inversion with these cases (38) contrary to what Raposo (1987: (6)) shows for EP, where inversion is either obligatory (with complements to

epistemic/declaratives (38)) or optional (with complements to factive verbs, (39)). Galician requires inversion (40), as shown by Longa (1994) and Uriagereka (1995a) (example from Mensching 2000:118):[26]

(38) *Eu penso/afirmo terem os deputados trabalhado pouco. (BP)
I think/assert have-INF-3P the representatives worked little
'I think/assert that the representatives worked little'.

(39) a. Eu lamento terem os deputados trabalhado pouco. (EP/*BP)
I regret have-INF-3P the representatives worked little
'I regret that the representatives worked little'.
b. Eu lamento os deputados terem trabalhado pouco (EP/BP).
I regret the representatives have- INF -3P worked little
'I regret that the representatives worked little'.

(40) …de iren os dous non mercarían nunca. (Galician)
…of to-go-3PL the two not would-trade never.
'If both of them went, they would never do any trading.'

Based on such facts and on the placement of clitics discussed in the next section, I argue that V-raising to F (or to any position above IP) was lost by the early 20th century in BP, distinguishing it from EP/Galician. Provided that head movement proceeds locally, in V-to-C movement V would actually have to move first to F, and then to C. Arguably, the loss of V-to-C was one of the crucial triggers for the (subsequent) loss of V-to-F. If indeed it was the case that V-to-F was possible earlier and it was absent from the grammars of BP speakers after the late 19th century, the prediction is that such an innovation should have further effects in these grammars. This prediction is borne out regarding the placement of clitics in BP, as discussed in the next section.

Uriagereka argues that the inflection found in inflected infinitives in Western Iberian represents strong F morphology that needs to be checked by having the verb raise to F. If so, Galician inflected infinitives carry strong F morphology and EP inflected infinitives do as well. However, one needs to explain why

[26] Longa (1994) argues that inflected infinitives are allowed only as complements to declaratives, but Uriagereka (1995a: (13-14)) provides examples where they appear as complements to *extrañar* 'surprise', an epistemic verb, where inversion is obligatory with non-focused subjects.

inversion is optional with factive verbs in EP. Raposo (1987) does not discuss in detail the semantic or syntactic distinctions between (39a) and the corresponding version without subject-verb inversion (39b).[27] Galves (1991) provides an alternative that is more consistent with the argument that the verb in inflected infinitives has to raise to F. She argues against Raposo's analysis by proposing evidence that factive complements are weak islands, and then analyzes them as CPs, in which the verb can land in C and the subject gets Case either in [Spec, CP], yielding the order S-V, or in [Spec, TP], yielding V-S. In the analysis I propose here, I keep the rationale behind Galves's proposal and take V to land instead in F by virtue of its carrying strong F morphology, in line with what Uriagereka (1995a) takes to happen in Galician and in the derivation of the crosslinguistic pattern for clitic placement in (31).

However, the situation in modern BP at first suggests that inversion has been lost even in dialects with inflected infinitives, as indicated by (38) and (39). Observe that although inflected infinitives in BP are rejected as complements to epistemic/declarative verbs such as *pensar* 'think'/*afirmar* 'claim', they are somewhat more acceptable with other verbs, such as *aceitar* 'accept', *permitir* 'permit' and *detestar* 'hate', but not with inversion. When we turn to ColBP we find the same pattern without any indication of inversion, with the difference that inflected infinitives have in general been replaced by non-inflected forms in most dialects, as discussed previously. I take loss of inversion in these cases to be evidence that the infinitival verb no longer raises to F. For ColBP the evidence for loss of inversion is consistent with the argument made by Uriagereka (1995a) that languages with inflected infinitives carry strong F morphology. Since ColBP lost both inversion and inflected infinitives, the correlation made by Uriagereka seems to be maintained. However, further evidence is necessary to establish a clear causal relation between loss of inversion and loss of inflected infinitives in BP. One fact that is apparent from the historical data is that the loss of inversion preceded the loss of inflected infinitives in the language, although I don't consider that evidence to be detailed enough to fully support the causal argument.

In what follows I will discuss evidence that supports the argument that the changes in (41a) are connected (in the previous sections I made connections between the changes in (41b)). Although I believe further connections may exist between the changes in (41a) and those in (41b) (such as between loss of subject-verb inversion and loss of inflected infinitives), the evidence available to me and which I discuss below does not allow me to make that argument.

[27] He argue that factive complements in such cases should be analyzed as NPs that select an IP represented by the infinitival clause, but it is not clear how he accounts for the two possible internal word orders in these complements.

(41) a. Changes associated to F position:
Shifts in clitic placement
Loss of V movement to F
Loss of inversion in infinitives

b. Weakening of the inflectional system ⟶ Loss of inflected infinitives

With respect to the current status of ColBP, the structural properties that may have resulted from some of these changes (between which I am so far unable to establish a clear causal relation based on the existing historical evidence) seem to be related. Consider one connection. First, as I indicated above, subject-verb inversion no longer exists as a widespread phenomenon in different dialects of BP. Second, inflected morphology is absent from infinitives. Therefore, in Uriagereka's terms, the features associated with F morphology in infinitives would be weak, which is further supported by the fact that infinitives do not raise overtly to F. In other words, in ColBP V does not carry any features that need to be checked against F before Spell-Out.

In this respect, it is necessary to say something about the status of the now uninflected infinitives found in Brazilian Portuguese, with respect to property (35vi), the occurrence of personal infinitives without Aux-to-Comp, which Uriagereka also associates with F.

As I showed in previous sections, given that BP infinitives allow overt subjects without V-to-C, they show the same structure that personal infinitives have in other Romance languages. However, there is no clear indication that there is raising of V to F in such cases in ColBP, contrary to what is argued by Uriagereka. Abstract Case assignment to the overt subject should proceed as I showed in section 5, that is, in [Spec, TP] and without the need for overt agreement morphology. This alternative is compatible with the view I advocate here that BP verbs no longer raise to F.

Before I proceed with the discussion about the changes I relate to the weakening of the F position in (41a), it is necessary to make a further comment about a possible connection with the loss of inflection in (41b). Although I don't have clear evidence from historical data that indicates a connection between loss of inflection and loss of inversion, we might take the weakening and subsequent loss of inflection to have yielded the loss of V movement to

F.[28] This alternative is also consistent with Uriagereka's (1995a) proposal, in which the inflection found in infinitives is taken to be a direct indication of strong F morphology that needs to be checked through V-raising, by PF. However, one difficulty for this account is the fact that the loss of inversion in StdBP may have preceded the loss of inflected infinitives, which still have a limited occurrence in the language. Therefore, given the need for further research about the history of the inflectional system of BP, I won't make a direct connection between both phenomena here. I argue for a weaker and maybe less interesting alternative: on one hand, the cluster of changes indicated in (41a) resulted from a general change in the properties of the F projection. On the other hand, the general loss of inflection in the language was the main cause of the loss of inflection in infinitives, which I discussed in detail previously. I turn now to the connection among the changes in (41a).

6.3 Changes in verb and clitic placement

Consider the paradigm of clitic placement with infinitives in (42) to (44) (data from Raposo and Uriagereka 2001:(51)-(53)). French systematically displays proclisis, Spanish systematically displays enclisis, whereas EP reverts from enclisis to proclisis in the presence of another element introducing the embedded clause (e.g. negation (43c), or a preposition (44c)).

(42) a. J 'ai essayé [de l'acheter] (Fr.)
b. Yo intenté [comprarlo] (Sp.)
c. Eu tentei [comprá-lo] (EP)
'I tried to buy it.'

(43) a. J 'ai essayé [de ne pas l'acheter] (Fr.)
b. Yo intenté [no comprarlo] (Sp.)
c. Eu tentei [não o comprar] (EP)
'I tried not to buy it.'

(44) a. [Sans l'acheter], on ne peut pas vivre. (Fr.)
b. [Sin comprarlo] no se puede vivir. (Sp.)
c. [Sem o comprar] não se pode viver. (EP)
'Without buying it, one cannot live.'

[28] Overt inflection has in fact been taken to be part of the trigger for overt V movement to I (Rohrbacher 1999), although the presence of V-to-I raising cannot be linked with rich inflection in a simple one-to-one fashion, as discussed in detail by Bobaljik (2002).

Kayne (1991) argues that clitics invariably left-adjoin to a functional head (T), and the order V-clitic in infinitives (as in Spanish in (42) to (44), but not in French, and only partially in EP) results from the verb having moved leftward past TP (cf. also Cardinaletti and Roberts 1991). Raposo and Uriagereka (2001) take the parametric variation at hand to follow from the activation of the functional head F above T. Uriagereka (1995b) analyzes third person accusative clitics, but not first person and second person strong clitics, as specific, referential determiners, and associates their placement with specificity and point of view. French arguably does not have a syntactically overt F, so it cannot trigger V movement. While both Spanish and EP do have an active F, in Spanish F is an affix that must be attached to a stem, and presumably it behaves as other affixes that check morphology in V, resulting in obligatory verb-raising.[29] In EP F is a clitic, which can relate to its host by V-raising, yielding enclisis (42c), or by hopping onto the next head up, yielding proclisis as in (43c) and (44c).

Turning to Brazilian Portuguese, one relevant factor is that it shows a higher tendency for the use of proclisis (45) than EP does (46), as observed by Teyssier (1976).[30] The EP pattern (46) in fact matches the pattern that was found in BP until at least the 18th century.

(45) Ela me /te viu ontem. (*viu-me /*te) (ColBP)
She me.CL/you.CL saw yesterday (*saw-me.CL/you.CL)
'She saw me/you yesterday.'

(46) (Ela) viu-me /te ontem. (*me /*te viu). (EP/18th c. BP)
(She) saw-me.CL/you.CL yesterday (*me.CL/you.CL saw)
'She saw me/you yesterday'

I argue that this distinction is the result of a general loss of verb raising to F in Brazilian Portuguese, which eliminated the overt movement of the verb to the position to the left of the clitic, eliminating the widespread use of enclisis

[29] The mechanism that drives the movement of the verb in this case is unclear, though. Lasnik (1995) argues that providing a host for an affix cannot drive syntactic movement, given for instance the ungrammaticality of (i):

(i) John –ed not dance. → *John danced not.

[30] The analysis in this section will focus on 1st and 2nd position clitics, since their placement properties in BP do not extend to 3rd person accusative clitics, which display a distinctive behavior in other respects, as I discuss in section 6.4.

in favor of proclisis in BP. This is supported by detailed historical data. Cyrino (1993:167-8) obtained the results in (47), which indicate a systematic loss of enclisis to gerunds and impersonal infinitives in BP:

(47) Percentage of clitics in enclitic position:[31]

Period Starting	Impersonal Infinitives	Gerunds
1700	100%	100%
1800	100%	100%
1850	86%	100%
1900	56%	25%
1950a	25%	66%
1950b	0%	0%

Cyrino (1993:168) also provides data indicating the complete loss of clitics in enclisis to affirmative imperatives, indicating that clitics now only occur in proclisis to the main verb in these constructions, contrary to what one finds in EP. These facts provide a clear indication that V-raising to F was in general lost by the second half of the 20th century.

If we assume that a projection like FP was in most respects active in BP until at least the 19th century, it is possible to propose a coherent picture in which the subsequent weakening and loss of its properties establishes a connection between several changes that have overlapped over the same period: the impoverishment of the inflectional system, the loss of V-raising above T, the loss of inflected infinitives, the shift in the placement of clitics, and some or all of the other properties listed in (35).

The hypothesis is that around the same time different properties associated here with F changed in a similar pattern. First, consider the loss of enclisis with infinitives, an indication that V-raising to F was lost for these forms. As shown in the table in (47), enclisis with impersonal infinitives and gerunds dropped from 86% and 100% respectively after 1850 to 56% and 25% after 1900. Notice that these are the first significant drops in the percentage of these patterns.[32] By the 1950s, enclisis with different verb forms completely

[31] Cyrino (1993: tables 2 and 3); the data are all from plays written by Brazilians. The data corresponding to 1950a come from a 1955 play in which the language is more formal, thus the lack of uniformity in the percentages.

[32] Pagotto (1993: 200, table 6) indicates that for infinitives enclisis was 100% in XIX2 (19th century, second half) and proclisis became 75% by the second half of the 20th century. (He has only 2 pieces of data for the first half of the 20th century.) His data for gerunds show a majority

disappeared from BP. These numbers, in parallel with the results regarding the loss of subject-verb inversion I discussed in section 6.2, give an indication that at least the loss of inversion in non-finite domains and the shift in clitic placement in complex verb phrases in (49) overlapped in terms of their occurrence between the late 19th century and early 20th century. If the hypothesis entertained here is on the right track, one should expect similar patterns of change for other properties arguably associated with the activation of the FP projection.

Changes in cliticization with finite verb forms in BP present similar patterns to the one summarized above for non-finite verb forms, although there are several complicating factors (see for instance by Cyrino and by Pagotto (1993)).[33] One of them is the fact that sentences like (48a) with proclisis to the auxiliary/modal become in general ungrammatical in BP by the 20th century, whereas sentences like (48b) with proclisis to the main verb enter the language in the early 19th century (7.7% in Cyrino's data) and become the general pattern by the late 20th century. (48a) indicates that even in 18th century BP the clitic didn't behave as a mere affix that required the inflected verb to move to its left, when there was another element that could host the clitic to the left, as it is still case also for modern EP, as seen in (43c)-(44c).

(48) a. Maria me /te / lhe queria falar.
Maria CL.1P.DAT /CL.2P. DAT /CL.2-3P.DAT wanted speak-INF.
b. Maria queria me /te /lhe falar.
Maria wanted CL.1P.DAT /CL.2P. DAT /CL.2-3P.DAT speak- INF.
'Maria wanted to speak to me/you/you-him-her.'

In order for the analysis involving loss of V-movement to F in BP proposed here to prove accurate, it is necessary to explain how new generations exposed to a grammar which generated the order in (49a) (corresponding to (48a)) until at least the early 19th century could have developed grammars in which the order became that in (48b)-(49b),[34] and how this new order can be accounted for in synchronic terms. Let me consider the diachronic change.

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of enclisis across all periods from the 16th to the 20th century, which was clearly influenced by the formality of the sources he used – official documents and letters.

[33] See Pires 2005 for additional discussion regarding the relation between the loss of verb movement and different innovations in clitic placement in BP, and a proposal regarding possible triggers for such changes.

[34] Notice that the auxiliaries themselves were never clitics in the different dialects of Portuguese considered here.

(49) a. < X CL AUX V >
b. < (X) AUX CL V >

Judging from Cyrino's (1993:169) data with respect to occurrence of a clitic in a clause that had an affective element (either negation or a complementizer) in the position X, the order shifted drastically from a percentage of 10% for (49b) in the second half of the 19th century, to 100% by the early 20th century (with a parallel shift from 90% of occurrence to complete loss, for the order in (49a) between these two periods). Considering only root sentences, the general percentage for the innovative order (49b) went from 17.6% in the second half of the 19th century to 52.9% in the early 20th century.[35]

Considering the innovative pattern in (48b), represented in (49b) [(X) Aux CL V], I argue that the clitic did not behave as an affix that required the auxiliary verb to move to its left. The loss of V-to-F movement argued for before must rule out the possibility that the new order (49b) was triggered by movement of the inflected auxiliary verb to the left of the clitic (i.e. to F), contrary to what was the case in earlier periods, when even main V-clitic order still occurred due to V-to-F (46). The first reason for that is because by the time (48b)-(49b) arises (19th century), other effects associated with V movement above T had been lost or were being lost (for example, V-CL in simple clauses, subject-verb inversion and other properties given in (35)), and it would be incoherent to claim that V-to-F was triggered only in this innovative pattern. Thus, the new order [(X) Aux CL V] (49b), which became predominant from the 19th century onward, did not involve movement of the auxiliary to F, but must be the result of further innovations in the grammar of BP speakers.

One hypothesis is that besides loss of V movement to F, clitic raising to a position above (or in adjunction to) the inflected T was also lost (different from French with auxiliaries *avoir* 'have' and *être* 'be', where the order is CL-Aux V).[36] As I argue below, this is directly supported by the fact that the order in (50a) — [Negation CL Aux V], an instance of (49a) — disappeared in favor of the order in (50b) — [Negation Aux CL V], an instance of (50b).

(50) a. < NEG CL AUX V > (late 18th c., early 19th c. BP; example (51a))
b. < NEG AUX CL V > (late 19th c. BP on; example (51b)).

[35] The cut by Pagotto (1993: 192) is by centuries, so less fine-grained, although the same general shift can be clearly seen from the 19th century to the 20th century.

[36] Under the alternative view that the clitic adjoins to F (Uriagereka 1995b), the loss of clitic movement should also be dependent on the inactivation of F.

(51) a. Maria não me / te tinha convidado. (early 19th c. BP; *ColBP)
Maria not CL.1P/ CL.2P had invited.
'Maria hadn't invited me/you.'
b. Maria não tinha me / te convidado. (ColBP)
Maria not had CL.1P/ CL.2P invited.
'Maria hadn't invited me/you.'

Given that the clitic can be licensed by elements such as negation (43c) and prepositions (44c) in dialects with an active F such as EP and arguably 18th century BP, the loss of V-to-F alone in the new 19th century BP grammars should not have affected patterns such as (49a) and (50a), given that they do not require V-to-F even in grammars where V-to-F is possible, such as EP and Galician grammars, because the element X (possibly negation) can serve as a host for the clitic, blocking movement of the inflected verb. However, (49a) and (50a) still disappeared completely by the early 20th century, and gave rise to (49b) and (50b) only. I argue that this was the result of a loss of clitic movement to the left of the inflected T, and not the result of a loss of V movement, since V-movement to the left of the clitic was not even at play here.

Considering these further facts, one possibility is that clitics stopped adjoining to the left of the inflected auxiliary/modal and started adjoining to a position to its right, but to the left of simple verbs in BP (a possibility that indicates that there may be no overt movement of V to T in BP, but which may also require inflected auxiliaries and main verbs to be distinct in terms of their overt position—see Lasnik 1999 for a similar distinction in English and French). In sum, other factors besides the loss of V-to-F should have prevented the clitic from moving to a position higher than the auxiliary, yielding the changes in (49) and (50).

6.4 Third person accusative clitics

Before I conclude, I want to briefly discuss the situation of 3rd person accusative clitics and why they were left out of the picture of clitic placement shift in (49)-(50). There are two complicating factors about the behavior of accusative clitics in BP that distinguish them from strong clitics after the major changes I discuss started in the 19th century. First, the orders in (49b)-(50b) never extended to them. 3P accusative clitics either started being realized to the right of the infinitive verb as in (52a) or remained to the left of the inflected verb as in (51a) (Galves 2001, Pagotto 1993).

Standard BP differs from EP in this respect, in that it displays a pattern similar to the one observed for Spanish, with systematic enclisis in the case of uninflected infinitives (52).

(52) a. Eu tentei [(não) comprá-lo] (StdBP)
I tried not buy.INF-it.CL
a'. *Eu tentei [(não) (l)o comprar]
* I tried not it.CL buy.INF
'I tried (not) to buy it.'
b. [Sem comprá-lo] não se pode viver.
Without buy.INF-it.CL not self can live
b' *[Sem o comprar] não se pode viver.
Without it.CL buy.INF not self can live
'Without buying it, one cannot live.'

Second, the patterns of change applying to these clitics indicate that their occurrence decreased much faster than 1st person clitics.[37] In Cyrino's data (1993: table 10), they reduce from 48% of occurrences in 1891 to 4% in 1973. Although these factors may be taken to support the distinction made by Uriagereka between the way weak and strong clitics are licensed, it is likely that further independent factors affected the pattern of change that took place with 3P accusative clitics.[38]

Assuming then that the changes in clitic placement discussed above relate to the fact that similarly to verbs, clitics also stopped raising up to F, one needs to explain why that change was allowed by new grammars and what the new position of the clitics was. About the latter, one possibility is that (strong) clitics started being adjoined to TP (as it has been proposed for Italian and French by Kayne 1989, 1991) in cases such as (45), or as low as the *v*P, given cases such as (52).[39] the properties of strong clitics are not incompatible with their being realized outside F (as also supported by Uriagereka's (1995a) proposal). For him, it is only weak accusative clitics of the Romance type that have certain requirements that impose on them the need to move to F, presumably because of their defectiveness in person features. There is apparently one problem in enforcing this requirement, though. Whereas Uriagereka

[37] 2P and 3P dative clitics also show a faster decrease in use, although that is related to changes in the pronominal system that did not affect 1P and 3Paccusative clitics directly.
[38] Nunes (1993) explores the possibility that phonological factors were responsible for the elimination of 3rd person accusative clitics from the grammar, whereas Cyrino (1997) explores in detail the possibility that their loss is related to the rise of null objects in BP.
[39] In an intermediate stage between (49a) and (49b) clitics 'affixed' to the right the auxiliary verb. That possibility disappeared in BP, whereas it remains in EP:

(i) Maria queria-me /te /lhe falar.
Maria wanted-CL.1SG/CL.2SG /CL.2/3.SG.DAT speak-INF.
'Maria wanted to speak to me/you/you-him-her.'

(1995b: 116) assumes that French clitics do not raise to F (because F is inactive in French), French still has 3rd person accusative clitics that occur in proclisis to both finite (32) and non-finite verbs (42). Given the picture that I have tried to argue for, one alternative is that it is only in the presence of an active F projection that (3rd person accusative) clitics are forced to raise to F, but this does not eliminate the possibility that 3rd person clitics are licensed by other mechanisms (also occurring in different positions) in different grammars, and this may be what is at play in the case of French and modern BP.

I haven't said anything about which modification in the characteristics of the primary linguistic data triggered the larger set of changes I associate with F, and which apparently started before the simplification of the inflectional system I referred to in previous sections.[40] One possibility is that this modification came from the clitic system. The data provided by Cyrino (1997) show at least one innovation in the clitic system that took place as early as the 18th century. The 3P neuter accusative clitic (*o* 'it', used with a sentential antecedent) dropped from the language in the 19th century, and was replaced by ellipsis. Interestingly, its decrease in use started as early as the 17th century. However, two factors suggest that this change alone may not have been enough to trigger the major shift in the system that started in the mid-19th century. First, the loss of the neuter clitic was more gradual than the other changes discussed in detail here, as shown by the data from Cyrino (1997:251), where it drops from 79.4% of occurrences in the 17th century (as compared to ellipsis) to 54.4% in the 18th century.[41] Second, this clitic usually does not account for more than 10% of all clitics between the 16th and the 19th century (Cyrino 1993: table 10). Therefore, although there is at least one indication that changes in the clitic system may have been the trigger for the major shift in the grammar of BP starting in the mid-19th century, further support for this claim is still necessary.

7 Conclusion

In this chapter I analyzed the rise and loss of inflected infinitives in dialects of Portuguese and provided an account for them in terms of a cue-based theory

[40] I know of no systematic studies about the history of the inflectional system in 18th/19th-century BP. One further complicating factor is that most of the changes in the inflectional system in modern BP are not directly detectable from the written language, which still reflects the properties of StdBP in this respect.

[41] The 19th-century 12.9% rate of occurrence provided by Cyrino is not very informative, because it is not broken up into shorter periods, and may just reflect a higher weight for the loss of 3rd person accusative clitics in general, which accelerated in the late 19th century.

of acquisition, in which grammar changes are determined by the identification of cues determined by universal grammar (UG) and robustly attested in the primary linguistic data. First, the theory I explore here provides a novel argument for the hypothesis that inflected infinitives in Portuguese developed from a finite subjunctive verb form, and could not have been formed on the basis of the non-inflected infinitive. Second, I describe the effects of the loss of inflected infinitives in Brazilian Portuguese with respect to the licensing of null and overt subjects. Treating obligatory control as the result of movement, I explain why the loss of inflectional morphology in Brazilian Portuguese infinitives blocked *pro* as their subject. By linking overt morphology and the licensing of overt subjects to independent cues provided by UG, I account for the fact that the loss of the infinitive inflection did not eliminate the possibility of overt non-ECM subjects in infinitives in Colloquial Brazilian Portuguese. Finally, this chapter analyzes other innovations that took place in the grammars of BP speakers mostly between the mid-19th and early 20th century, especially regarding the position of verbs and clitic placement, and proposes an analysis of how these and other changes investigated here are interconnected.

CONCLUSION

In the introduction to this book I presented an overview of the different topics and goals I had in mind in the course of this project. In general, I hope to have contributed to a more precise understanding of the properties of non-finite domains in human language, by focusing on the investigation of non-finite domains that have received less attention in the literature on Case and control. I restricted my attention to structures in English and in Portuguese that can occur in two different ways: they can allow either an overt or a null subject in their subject position, or they do not allow overt embedded subjects and are restricted in their tense and aspectual properties. I proposed analyses for these constructions which account for the empirical facts I investigated and are in line with the demands of some of the current research in syntactic theory. Finally, I addressed some of the phenomena in question from the perspective of language change, and tried to explain them by taking into account certain requirements that a theory of language change needs to satisfy with respect to acquisition and the properties of universal grammar.

There are a few open questions that I did not address. I am aware of some of them, and I mention the ones I take to be more relevant below.

My attempt in dealing with English gerunds was to provide a theoretical characterization of them that was coherent with analyses of infinitival constructions. The fact that English gerunds carry a Case feature gave me significant mileage in accounting for the special behavior of these constructions. Under minimalist expectations, one could also consider a theory that dispenses with the need to rely on that property, provided it did not include additional stipulations. Furthermore, I explored only briefly the mechanisms that would explain why overt subjects of gerunds do not need to receive nominative Case. As I pointed out in chapter 1, any explanation of that fact that relies on the idea of default Case has to provide appropriate mechanisms to prevent the risk of overgeneration that such an account brings into the grammar. Also, more needs to be said about the precise feature composition of the head of defective gerunds. I suspect that the latter two phenomena are actually related, and a more detailed theory of feature defectiveness may provide other answers to some of these questions.

With respect to control phenomena, I provided two case studies that present specific problems for tense/event binding theories of control. However, I did not address how selectional requirements should be handled in a movement theory of control, in case they are relevant to distinguish raising from control. After all one may need to rely on the existence of c-selection, although its

effects can be limited in different ways by the application of other principles of the grammar, as it has been argued in some of the relevant literature.

Finally, in my investigation of the diachronic aspects of the development of infinitives in Portuguese I argued how the loss and appearance of agreement morphology in non-finite domains imposes certain constraints on how theories of acquisition and change should be specified. Conversely, the need for theories of this type limits the range of explanations one can provide for changes in the grammar. Additionally, I explored possible connections between the loss of inflected infinitives and other major changes in the grammar of Brazilian Portuguese. I focused on two arguments. First, the simplification of the inflectional system is at the source of the loss of inflected infinitives. Second, I argue that a set of major changes in the grammar of 19th century Brazilian Portuguese was the reflex of one single structural change in a functional projection in the left periphery of the clause. Further research is necessary to establish whether the changes in the inflectional system and the general structural changes I proposed mutually influenced each other in significant ways.

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INDEX

D

E

F

G

H

I

Z

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