

SEVERING THE DISTRIBUTION OF PRO FROM CASE

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Abstract. Deriving the distribution of PRO in a principled manner is a central task for the theory of control. Traditionally, Case has been identified as the key to this problem: PRO was argued to bear no Case at all, or some special (“null”) Case. I argue that PRO bears standard case like normal lexical DPs; clear evidence comes from languages with case-concord (Russian, Hungarian, Icelandic). Moreover, PRO (and obligatory control) may occur in finite clauses (Hebrew, Balkan languages). Conclusion: PRO’s distribution must be completely divorced from Case, possibly because abstract Case does not exist. The alternative is to tie the distribution of PRO to the specific values of [T] and [Agr] on the I^0 and C^0 heads of the embedded clause (Landau 2004). A feature-based algorithm predicts the distribution of PRO in a variety of clausal complements. It is shown that the system naturally explains some intriguing correlations between obligatory control and agreement in Basque and Welsh complementation structures.

1. Introduction

Why do certain types of clauses allow or require a PRO subject while others do not? Within GB, there were two types of approaches to this question. The Case approach maintained that PRO occurs in caseless positions (Bouchard 1984), whereas the government approach maintained that PRO occurs in ungoverned positions (Chomsky 1981).¹ Although dominant throughout the 1980s, the government approach has been abandoned in minimalist analyses. Instead, the case approach has been revived—either literally (Hornstein 1999) or by the introduction of null case (Chomsky & Lasnik 1993, Martin 2001). It is now fairly standard to assume that PRO bears a special designated case, or no case at all.

In this paper I argue that there were good reasons to reject the case approach originally, and there are even stronger reasons to do so today. In a sense, I will try to revive the government approach, where the distribution of PRO was more directly linked to the tense/agreement properties of Infl. In another sense, though, I will argue that *all* the previously mentioned approaches were wrong in failing to recognize that PRO bears standard case like normal lexical DPs. In short, the conclusion will be that the distribution of PRO must be completely divorced from case. An alternative to the case approach will then be discussed and illustrated.

Although the conclusions stemming from this study bear on recent debates concerning the nature of obligatory control (OC) (see, among others, Hornstein 1999, 2003; Landau 2003, to appear; Jackendoff & Culicover 2003,

¹ Following common practice, “Case” is an abstract syntactic feature; “case” is a morphological marker.

Boeckx & Hornstein 2004), I will not directly discuss the issue of OC per se. Rather, my goal is limited to (a) disproving the case approach to PRO's distribution and (b) proposing a sound alternative. Nonetheless, it will become clear that certain aspects of the debate are inevitably decided by our conclusions. For example, if PRO bears standard case, then it must be distinct from the trace left by NP-raising. Likewise, if the value of [Agr], an uninterpretable feature, affects whether a given complement will display OC or nonobligatory control (NOC), then purely semantic approaches to OC are inadequate.

The first part of this paper lays out the data showing that PRO has standard case (section 2). The evidence is based on case concord in several languages, whereby some subject-oriented element agrees with PRO in case. In section 3, I suggest that abstract case is irrelevant for PRO's distribution for a good reason—it is a dubious theoretical construct, with little independent empirical support. Sections 4 and 5 present the “control calculus” developed in Landau 2004—a licensing procedure operating on the [T] and [Agr] features of the complement's Infl and Comp heads. The key insight, supported by the behavior of subjunctive complements (Balkan languages, Hebrew) and inflected infinitives (Hungarian, European Portuguese), is that NOC environments form a natural class, whereas OC environments form its heterogeneous complement. In section 6, I show how the system correctly predicts the distribution of OC and NOC complements in Basque and Welsh. Section 7 concludes the paper.

2. PRO Has Standard Case

It is a striking fact that although decisive evidence for PRO being normally case-marked was presented as early as Andrews 1971, 1976, the mainstream literature in control studies has consistently denied that PRO bears (normal) case. This denial can no longer be seriously maintained, as the Ancient Greek and Icelandic facts cited by Andrews have been replicated in numerous other languages. That the distribution of PRO must be severed from case, in fact, has been recognized by various authors (Comorovski 1985, Sigurðsson 1991, Franks 1998, Babby 1998, Babby & Franks 1998, Tallerman 1998, Harley 2000, Carnie & Harley 2002, San Martin 2004, McFadden 2004, Landau 2004).

The evidence for case-marked PRO relies on the phenomenon of *case concord*. In many languages, items like predicates, emphatic pronouns, reflexives, floating quantifiers and classifiers are inflected for case. The specific morphological case they bear reflects (or agrees with) the case borne by the local DP with which they are associated (concord is clause-bound). Thus, when subject-oriented, such items make reliable detectors for the case of PRO.

The fact that PRO bears its own, locally assigned case becomes particularly evident in contexts where that case is *distinct* from the case of the controller

DP. Such contexts easily rule out attempts to explain away the phenomenon as one of “case transmission”; they are equally damaging to movement theories of control (Hornstein 1999 and subsequent work), which are committed to the assumption that *PRO* is nothing but a caseless NP-trace. All the data below have this property. As can be seen, the type of case on *PRO* (structural or quirky) and its specific value vary across languages and verbs.²

- (1) a. Icelandic (quirky ACC)

Strákarnir	vonast	til	[að	PRO	vanta	ekki
the boys.NOM	hope	for		PRO.ACC	to-lack	not
alla	i	skólann].				
all.ACC	in	the-school				

‘The boys hope not to be all absent from school.’
- b. Russian (structural DAT)

My	poprosili	Ivana	[PRO	pojti	odnomu].
we.NOM	asked	Ivan.ACC	PRO.DAT	to-go	alone.DAT

‘We asked Ivan to go alone.’
- c. Hungarian (structural DAT)

Illetlenség	volt	Mari-tól	[PRO	ilyen
impoliteness	was	Mary.ABL	PRO.DAT	so
türelmetlen-nek	lennie].			
impatient.DAT	to-be.3SG			

‘It was impolite of Mary to be so impatient.’
- d. German (structural NOM)

Hans	hat	die Zeugen	gebeten	[PRO	einer
John	has	the witnesses.ACC	asked	PRO.NOM	one.NOM
nach dem anderen	einzutreten].				
after the other	in-to-step				

‘John asked the witnesses to step in one after the other.’
- e. Korean (structural NOM)

Cwungtaycang-i	psengsa-tul-lul	[PRO	cekci-ey	sey
captain.NOM	soldier.PL.ACC	PRO.NOM	territory-to	3
myeng-i	ka-la-ko]	seltuk-ha-ta.		
CLASS.NOM	go.IMP.COMP	persuade.DO.DECL		

‘The captain is persuading the three soldiers to go into enemy territory.’
- f. Greek (structural NOM)

Anangasan	tin	Eleni	[PRO	na	milisi
forced.3PL	the	Eleni.ACC	PRO.NOM	PRT	speak.3SG
afti	i	idhja].			
she	herself.NOM				

‘They forced Helen to speak herself.’

² Sources: Sigurðsson 1991, Franks and Hornstein 1992, Tóth 2000, S. Wurmbrand, class notes 2004, Madigan 2005, Philippaki-Warbuton and Catsimali 1999, Comorovski 1985.

- g. Romanian (structural NOM)
 Ion a ajutat-o_i [PRO_i să ajungă
 John has helped-her.ACC PRO.NOM PRT arrive
 ea_i prima].
 she.NOM the-first
 'John has helped her to arrive the first.'
- h. Romanian (quirky DAT)
 Maria_i va încerca [PRO_i să nu i se facă
 Maria.NOM will try PRO.DAT PRT not miss
 ei_i prima dor de București].
 her.DAT the first of Bucharest
 'Maria will try not to be the first of them who misses Bucharest.'

Examples (1f–h) involve OC into subjunctive complements. That the controlled subject is PRO, rather than *pro*, has been extensively argued in the literature on control in Balkan languages. The arguments—based on VP-ellipsis and *de se* readings—reveal that under OC, the embedded subject is uniformly PRO (see Landau 2004 for summary and discussion). Crucially, though, the finiteness dimension seems to have no effect on the availability of case for PRO: In the infinitival examples (1a–e), PRO is case-marked just as it is in the subjunctive ones. In section 5, we will see that finiteness is actually hardly relevant to control at all.

Notice that clause-bound agreement with PRO on some other ϕ -feature is taken, uncontroversially, as evidence for the presence of that feature on PRO.

(2) Mary proposed to Paul [PRO to become partners].

What does the plural morpheme *-s* in the infinitive agree with? Plainly, with the [plural] feature on PRO (there is no other plural DP in the sentence). Does it make any sense to argue that PRO has a special “null” [plural] feature, that lexical DPs cannot bear? Hardly so. The standard way of treating such facts is to assume a full set of standard ϕ -features on an element that happens to be phonologically null. Why, then, would it make any more sense to assume a special “null” case on PRO (Chomsky & Lasnik 1993, Martin 2001)? And why does this “null” case trigger exactly the same type of concord that standard case would on the agreeing items in (1)? Are there different flavors of null case (nominative, dative, structural, quirky, etc.)? It appears that the null case proposal is simply a residue of the GB dogma that case (as opposed to other features) is restricted to pronounced elements. But obviously, this dogma raises more puzzles than it solves.³

Another type of argument to the effect that PRO is standardly case-marked has been presented by San Martin (2004). San Martin notes that there are three

³ Martin's (2001) theory of null case suffers from serious conceptual and empirical problems; see Baltin and Barrett 2002 and Hornstein 2003 for critiques.

structural cases in Basque: absolutive, ergative, and dative. These cases are discharged sequentially; in particular, DAT can only be discharged after ABS and ERG are. In light of this, consider standard OC examples in Basque like the following.

- (3) Jon_i [PRO_i Mariari ogia ematen]
 John.ABS PRO.ERG Maria.DAT bread-DET.ABS give.NMZ.LOC
 saiatu da.
 try Aux.3ABS
 'John has tried to give bread to Maria.'

The fact that both the "first" (absolutive) and "third" (dative) cases are discharged in the complement clause indicates that the "second" case (ergative) has also been discharged. But the only potential DP that could receive the ergative case is the null subject, PRO. Notice further that the controller bears the distinct absolutive case, again ruling out case transmission and movement alternatives.

To summarize: To the extent that languages provide morphological cues as to the case of PRO, they all converge on the conclusion that PRO bears standard case—exactly the type of case that a lexical DP would bear in that position. The obvious implication, of course, is that case cannot distinguish the distribution of PRO and lexical DPs.

3. Against Abstract Case

Abstract Case was introduced into syntactic theory in the early 1980s as a means of expressing distributional generalizations about NPs (Chomsky 1981). The underlying notion was that NPs are deficient in some sense: they need Case (the Case Filter) but are inserted without it into syntactic configurations. It is the job of a restricted set of case assigners to license NPs by assigning them Case under some specified structural condition (government). Case in this sense is abstract because it is purely a formal feature with no necessary morphological realization. For example, *John* in (4a) has Case but *John* in (4b) does not, since finite Infl is a case assigner but infinitival Infl is not. The fact that licensed NPs are morphologically nondistinct from unlicensed NPs is orthogonal to the theory of abstract Case. On this theory, a separate, morphological procedure determines if and how particular Cases are realized as morphological cases.

- (4) a. That John arrived is comforting.
 b. *John to arrive is comforting.

Recent years have seen a growing skepticism towards the prominent status of abstract Case in syntactic theory (Marantz 2000, Haeberli 2003, McFadden 2004). While no one denies that morphological case may depend on syntactic

configurations (Marantz's "dependent" case), what seems less and less clear is that the grammar employs a notion of abstract Case, over and above morphological case, crucially involved in licensing the occurrence or movement of DPs. I argued earlier that at least one major function of abstract Case is spurious—namely, distinguishing PRO from lexical DPs. I believe the other functions of abstract Case deserve similar skepticism. Although a systematic defense of this claim is beyond the scope of this paper, in what follows I will briefly outline the reasons why abstract Case seems much less appealing today than it did 25 years ago. Throughout, one can argue from redundancy: The work done by abstract Case is already done by independently needed principles (see McFadden 2004 for a thorough discussion).

First, the original idea that Case drives A-movement is no longer tenable. DPs may receive Case in situ, without movement (as in expletive-associate constructions); A-movement may apply to DPs that already have Case (e.g., A-scrambling); nor is it required that A-movement target a Case position (e.g., successive cyclic movement through the subject position of raising complements).

The "freezing" effect in (5a) is often attributed to the fact that the raised subject has Case in the embedded Spec,TP; Chomsky (2000) proposes that a DP with a checked Case feature is "inactive" for movement.

- (5) a. *John_i is likely [_{CP} (that) *t_i* will be sick].
 b. [_{CP} That John will be sick] is likely.

However, (5a) can be ruled out at least in two independent ways. Assuming that finite clauses are CPs and that CPs are phases, the Phase Impenetrability Condition (PIC) prevents the matrix T from probing *John* in the embedded Spec,TP, which is inside the phase's complement. Passing through the embedded Spec,CP is also not an option, as the resulting A-chain will be ill-formed, containing a medial A'-position. An independent way of ruling out (5a) is by the Minimal Link Condition (McFadden 2004). The EPP feature of the matrix T could, in principle, be satisfied either by raising of the complement clause or of the embedded subject. Since the former contains the latter, however, it is closer to the matrix T. Thus, (5b) blocks (5a).⁴

Turning to the alleged licensing capacity of abstract Case, examples like (6a) have been taken as evidence that lexical DPs must be assigned Case. Given that the T head of infinitives is unable to provide Case, the complementizer *for* is obligatory.

⁴ The argument holds even if the sentential subject is subsequently topicalized. Raising verbs, as opposed to adjectives, do not occur in structures like (5b), for poorly understood reasons (perhaps related to c-selection).

- (6) a. I would like very much **(for)* John to buy the book.
- b. Who would you like very much (**for*) to buy the book?
- c. I thought yesterday **(that)* John should buy the book.

In all likelihood, though, the necessary presence of *for* in (6) is unrelated to Case. If it were, it would be mysterious how *who* gets Case in (6b), where *for* is excluded. Rather, what seems to be going on is the general ban on complementizer drop whenever the complement clause is separated from the matrix verb by an adverb, a property shared by finite and nonfinite complementizers alike (cf. (6c)). In fact, complementizer drop is a highly idiosyncratic phenomenon. Certain predicates simply do not allow it.

- (7) a. It is illegal **(for)* tourists to park here.
- b. It is outrageous **(that)* tourists will park here.

Curiously, (7a) is standardly taken to reflect the Case dependency between *for* and *tourists*, whereas no one takes (7b) to reflect a parallel dependency between *that* and *tourists*. Given that lexical statements (dis)allowing complementizer drop are needed anyway (e.g., to distinguish *want [for]* from *long *[for]*), nothing seems to be added by associating obligatory complementizers with the capacity of licensing abstract Case on the following DP.

Suppose, however, that certain clausal complements are bare TPs, so the question of dropping the complementizer does not arise for them. Why would they fail to host lexical subjects?

- (8) **It* is likely [_{TP} John to win].

Here it would seem reasonable to assume that the problem lies in the association of the expletive *it* and the clausal complement (McFadden 2004). Just like *there* can only associate with DPs, *it* can only associate with CPs. This restriction is probably related to the fact that CPs can move but TPs cannot, although exactly how to implement this correlation is unclear.

To conclude, I submit that none of the major functions assigned to abstract Case in modern syntactic theory is indispensable, at least not obviously so. Skepticism toward this notion, fully justified with respect to the PRO/lexical DP distinction, finds support in other areas as well. It may well turn out that like the classical ether in physics, abstract Case is an “occult property” entirely devoid of explanatory power in syntax.

4. The Calculus of Control: Landau (2004)

Given that Case (and by implication, government) cannot distinguish between the distribution of PRO and lexical subjects, some other criterion is called for. To be of any general value, this criterion must be applicable not just to

frequently cited examples (e.g., English infinitives vs. indicatives) but also to less familiar attested varieties of OC and NOC. In particular, an adequate theory of the distribution of PRO must explain, among other things, why it is licensed in certain subjunctive clauses in Balkan languages but not in others, which types of inflected infinitives can host PRO and which types cannot, and so on. Landau 2004 is an attempt to map out a broad crosslinguistic picture of clausal complements, and in particular, to predict their OC/NOC status in a principled manner. In this section and the following, I present the essentials of this theory with some illustrative cases. Section 6 turns to some novel applications of that system.

Following tradition, Landau 2004 assumes that the local environment of the embedded subject must provide all the necessary information to determine whether it must, can or cannot be PRO. Again, following tradition, Landau assumes that the relevant features of this environment are [T] and [Agr]. However, the manner in which these features interact to (de)license PRO is radically different from previous accounts.

The basic intuition is quite simple: of the two sets of syntactic environments—those that require a lexical subject and those that require PRO—it is the *former* that is a natural class. That is, an Infl head positively specified for both features [+T,+Agr] will necessarily license a lexical subject.⁵ By contrast, an Infl head with any negative specification—[+T,-Agr], [-T,+Agr], [-T,-Agr]—will necessarily license PRO. In a real sense, then, PRO is the elsewhere case of lexical subjects. Failing to assemble a natural class of environments, the distribution of PRO resists any direct statement (which explains, I believe, why earlier attempts to derive it were only partially successful).

It is well known that features of Comp, as well as those of Infl, are relevant to subject determination. This intuition is incorporated in Landau's account by assuming that Comp too may be specified for [T] and [Agr]. A special situation arises when Infl and Comp are featurally identical, leading to "mutual cancellation" (see below).

We now must provide a systematic procedure for fixing the values of [T] and [Agr] in any given clause. Regarding [T], the intuition pursued in Landau 2004 is this: [+T] reflects *semantic* tense, [-T] reflects its absence (or "anaphoric" tense). This distinction, extensively studied in Landau 2000, is highly relevant to control. Landau 2000 shows that partial control in infinitives is only allowed when the infinitive is tensed, that is [+T]. Whether the infinitive is [+T] or [-T] can be easily detected by imposing a tense mismatch between the matrix and the embedded events (9). Notice the correlation of this contrast with the (im)possibility of partial control (10).

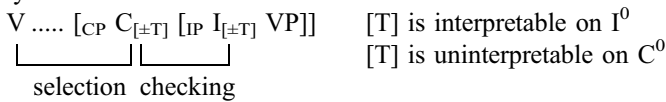
- (9) a. *Yesterday, John managed to visit Bob tomorrow.
- b. Yesterday, John preferred to visit Bob tomorrow.

⁵ This is somewhat simplified; I return to some nuances below.

- (10) a. *(They said that) John managed to gather in the small conference room.
 b. (They said that) John preferred to gather in the small conference room.

Obviously, the tense properties of complements are fixed by the matrix predicates that select them. As selection is local, the tense dependence of the embedded Infl on the matrix predicate must be mediated by Comp, the head of the complement clause. Therefore, for tense-dependent clauses, we posit a [T] feature on Comp. This feature must be uninterpretable, because tense is interpreted only once, on Infl. Still, it is crucially implicated in tense dependencies.

- (11) The syntax of selected tense



Notice that [T] is specified on Comp only when the embedded tense is restricted by the matrix predicate. This is typical of infinitival and subjunctive complements. Whenever the embedded tense is independent, as in indicative complements, Comp bears no [T] specification, since no tense dependency is established.

Consider next the specification of [Agr]. Uncontroversially, [+Agr] on Infl encodes overt morphological agreement inflection. I follow the traditional analysis of infinitival Infl as being specified [-Agr] (so-called abstract agreement). The [Agr] specification of Comp is not as transparent, because inflected complementizers are quite rare crosslinguistically. Landau 2004 assumes that the very [Agr] slot on Comp is parasitic on [+T]. Thus, Comp with [+T] (dependent tense) may be either [+Agr] or unspecified for [Agr], whereas [-T] (anaphoric tense) or lack of [T] (independent tense) on Comp entail unspecified [Agr]. Most of the possible combinations are actually attested, as Landau shows.⁶

Formally, one needs some “communication device” between the clausal features [T] and [Agr] and the referential features of the subject that they license. Case and government fulfilled that role in the past but, for the reasons discussed above, must be replaced. A straightforward way of setting up this device is to exploit the independently necessary referential distinction between *PRO* and lexical DPs. Formally, we might encode this distinction in an interpretable feature [R].

⁶ What about ECM and small clauses? The traditional intuition concerning these “reduced” clauses is that their Infl head is defective in some sense. In Landau 2004 ECM clauses are unspecified for [Agr] (a property related to the lack of an EPP position, if raising-to-object is correct) and small clauses are unspecified for [T] (explaining the absence of auxiliaries in them). Notice that control infinitives must be distinguished from ECM/SC infinitives in any theory, and the distinction is bound to be morphologically invisible. The contrast between [-Agr] and radical absence of [Agr] serves this function under the current proposal.

- (12) Specifying [R] on DPs
- a. Lexical DP, $pro \Rightarrow [+R]$
 - b. $PRO \Rightarrow [-R]$

Roughly, referential DPs are [+R] and “anaphoric” DPs are [-R]. [-R] is an interpretable feature that requires an antecedent for identification. We can think of PRO as a radically impoverished null SE-anaphor (Reinhart & Reuland 1993, Reuland & Reinhart 1995), unspecified for ϕ -features. Unlike SE-anaphors, PRO is unvalued for [person], as well as for [number] and [gender]. It contains slots for each ϕ -feature (including case), and these slots are valued under agreement with the functional head that licences the controller. Possibly because its [person] feature cannot participate in the Agree relation, an overt SE-anaphor may not occur instead of PRO. This explains why the Korean anaphor *caki* does alternate with PRO in OC complements—*caki* lacks a person specification (Yang 1985, Madigan 2005).

The link to the clausal features can now be stated in terms of an uninterpretable counterpart of [R], present on functional heads like Infl and Comp (cf. the analogous dual manifestation of ϕ -features). Recall the split between [+T,+Agr] and the elsewhere cases; this can be mediated by uninterpretable [R] as follows.

- (13) R-assignment Rule
- For $X^0_{[\alpha T, \beta Agr]} \in \{I^0, C^0, \dots\}$:
- a. $\emptyset \rightarrow [+R]/X^0_{[-]}$, if $\alpha = \beta = '+'$
 - b. $\emptyset \rightarrow [-R]/\text{elsewhere}$

Put simply, whenever Infl or Comp are specified for [+T,+Agr], they automatically come to bear [+R]; any other feature constitution—[+T,-Agr], [-T,+Agr] or [-T,-Agr]—is associated with [-R]. *Lack* of [T] or [Agr] renders the rule inapplicable; no [R] value is assigned.

The R-assignment rule is somewhat stipulative, but it is important to realize that *any* theory of control appeals to some stipulation, and frequently to several ones, in order to come to terms with the fundamental fact that some clauses license OC and others do not. Thus, classical GB stipulated that only [+Agr] can assign nominative case, and only lexical DPs and *pro* bear case whereas PRO does not (more stipulations were needed to ensure the nongovernment of PRO). In minimalism, different types of T^0 heads are associated with different case-checking features (nominative case, null case, or no case), these associations being purely stipulative.

Conceptually, the role of [Case] in GB/minimalism is analogous to the role of [R] in the present system. The stipulation, however, is minimized in the present system for two independent reasons. First, the feature used to distinguish PRO from lexical DP/*pro* in the present analysis is independently motivated on interpretive grounds, whereas the Case distinction was seen to be

groundless. Second, the *nature* of the implication in (13) is not entirely arbitrary, insofar as it ties together reference in the temporal domain with reference in the nominal domain.

Licensing of the subject is now understood as checking off whatever uninterpretable feature(s) Infl and Comp bear. Since lexical DPs are specified with an interpretable [+R], they will be able (in fact, required) to check off the uninterpretable [+R] found on Infl and Comp specified for [+T,+Agr]. Given that PRO bears interpretable [-R], it will be obligatory if either Infl or Comp is negatively specified for [Agr]/[T] (while still specified for the other feature).

The fact that both semantic tense and morphological agreement enter the calculus of control explains why both semantic and syntactic accounts of OC have some truth to them. However, the distinctive merit of the present system is in insisting that neither approach is sufficient by itself, and in the explicit characterization of their joint effect.

5. Some Consequences: Infinitives and Subjunctives

I will now review a few examples showing how this system is put to work in Landau 2004. Following Landau 2000, we assume that OC is implemented as an Agree relation between a functional head in the matrix clause (T, light v, etc.) that also agrees with the controller, and PRO or the [Agr]-feature bundle on the embedded Comp. The Agree relation itself targets only the [Agr]-feature bundle of the goal, thus it makes no difference whether these features are located on the embedded Comp or PRO.

Consider tensed infinitives first, which allow partial control (PC). These occur as complements to desiderative, propositional, factive, and interrogative verbs.

(14) PC-infinitive

a. John preferred to gather in the small conference room.

b. $^*[_{CP} DP \dots F \dots [_{CP} C^0_{[+T,+Agr,+R]} [_{IP} I^0_{[+T,-Agr,-R]} [_{VP} DP/pro_{[+R] \dots}]]]]]$

c. $[_{CP} DP \dots F \dots [_{CP} C^0_{[+T,+Agr,+R]} [_{IP} PRO_{[-R]} [_{I'} I^0_{[+T,-Agr,-R]} [_{VP} t_{PRO} \dots]]]]]$

The Infl head is specified [+T,-Agr], since it bears semantic tense (specifically, irrealis tense) but no overt agreement. By (13b), it is assigned an uninterpretable [-R] feature. This feature can only be checked by PRO, which bears the interpretable counterpart [-R]. Hence the ungrammaticality of lexical subjects (DP or *pro*) in (14b). Recall that [+T] on Comp may “parasitically” introduce [+Agr]. If this choice is taken, as in (14c), [+T,+Agr] on Comp generates a [+R] specification, by (13a). This feature may only be externally checked, since PRO and Infl are both [-R]. It is the Agree relation with the matrix head

F (inheriting [+R] from the controller) that achieves that goal. In Landau 2000, 2004, it is explained how this C-mediated OC relation gives rise to the partial control effect, by failing to value the semantic number of PRO.

One can clearly see the “elsewhere” clause of (13) at work by comparing tensed infinitives with untensed subjunctives, which exhibit OC in Balkan languages. These C(ontrolled)-subjunctives are the featural mirror image of tensed infinitives: being untensed their Infl and Comp bear [-T]. Exhibiting overt agreement, their Infl head also bears [+Agr]. Again, [-T,+Agr] falls under the elsewhere case, (13b), that generates a [-R] value; the result is obligatory PRO, lexical subjects being excluded.

(15) a. C-subjunctives (Romanian)

Maria_i a încercat [PRO_i/*j/*Ion să plece].
 Mary has tried PRO/*John PRT leave
 ‘Mary tried to leave.’

- b. *_{[CP DP... F ... [CP C⁰_[-T] [IP I⁰_[-T,+Agr,-R] [VP DP/pro_{[+R]...}]]]]]}

$$\begin{array}{ccc} \boxed{} & \boxed{\phantom{Agree_{[-T]}}} & \boxed{\phantom{*Agree_{[+Agr,?R]}}} \\ Agree & Agree_{[-T]} & *Agree_{[+Agr,?R]} \end{array}$$

- c. _{[CP DP... F ... [CP C⁰_[-T] [IP PRO_[-R] [I⁰_[-T,+Agr,-R] [VP t_{PRO...}]]]]]}

$$\begin{array}{cccc} \boxed{\phantom{Agree_{[+Agr,+R]}}} & \boxed{\phantom{Agree_{[+Agr]}}} & \boxed{\phantom{Agree_{[-T]}}} & \boxed{\phantom{Agree_{[+Agr,-R]}}} \\ Agree_{[+Agr,+R]} & Agree_{[+Agr]} & Agree_{[-T]} & Agree_{[+Agr,-R]} \end{array}$$

By contrast, tensed subjunctives are specified [+T,+Agr] on both Infl and Comp. Normally, the induced [+R] features would be checked off by a lexical subject. The result would be a NOC structure; these are the F(ree)-subjunctives in Balkan languages, exemplified in (16a) and structurally represented in (16b).

(16) a. F-subjunctives (Romanian)

Ion₁ vrea ca Dan/pro_{1/2} să rezolve problema.
 John wants that Dan/pro PRT solve the-problem
 ‘John₁ wants Dan/him₂/PRO₁ to solve the problem.’

- b. No control
{[CP... DP... F ... [CP C⁰[+T,+Agr,+R] [IP I⁰_[+T,+Agr,+R] [VP DP/pro_{[+R]...}]]]]]}

$$\begin{array}{ccc} \boxed{} & \boxed{\phantom{Agree_{[+T,+Agr,+R]}}} & \boxed{\phantom{Agree_{[+Agr,+R]}}} \\ Agree & Agree_{[+T,+Agr,+R]} & Agree_{[+Agr,+R]} \end{array}$$

A different derivational path is available, though. The [+R] features could check each other off (since Comp and Infl enter the Agree relation anyway, to check off [+T] on Comp). A PRO subject would be licensed so long as its anaphoric [-R] feature is identified by an antecedent.⁷ In the Balkan

⁷ If Comp is only [+T] (without [Agr]), and Infl is [+T,+Agr], PRO is ruled out, since only a lexical subject could check [+R] on Infl. Landau 2004 argues that this is the profile of obviative subjunctives of the Romance type.

languages, this option will not produce visible effects, because coindexation between a matrix DP and an embedded null subject is already possible when the latter is *pro*. It does, however, produce a striking effect in Hebrew. In this language, referential *pro*-drop is restricted to first and second person. Thus, a third-person null subject (which is neither generic nor expletive) can only be *PRO*. Indeed, subjunctive complements in Hebrew display what seems to be an alternation between OC and NOC—a paradox for most existing accounts. In fact, NOC examples like (17a) are derived like (16b), whereas OC examples like (17b) exploit the [+R]-cancellation option in (17c).

(17) Hebrew subjunctives (OC or NOC)

- a. bikašnu me-Gil še-Yosi yelex ha-bayta.
 asked.1PL from-Gil that-Yosi will-go home
 ‘We asked Gil that Yosi would go home.’
- b. bikašnu me-Gil_i še-PRO_{i/*j} yelex ha-bayta.
 asked.1PL from-Gil that-PRO will-go home
 ‘We asked Gil to go home.’
- c. Obligatory control
 $[CP \text{ DP} \dots F \dots [CP \text{ C}^0_{[+T, +Agr, +R]} [IP \text{ PRO}_{[-R]} [I' \text{ I}^0_{[+T, +Agr, +R]} [VP \text{ } t_{PRO} \dots]]]]$

 Agree_[+Agr, +R] Agree_[+Agr] Agree_[+T, +Agr, +R] Agree_[+Agr]

In Landau 2004 I show that the proposed calculus has just enough expressive power as necessary to account for the crosslinguistic typology of OC and NOC complements. The system naturally extends to inflected infinitives, which display OC in some languages (Hungarian) but not others (European Portuguese)—again, due to micro-changes at the featural level of [T] and [Agr]. In the next section we examine two novel instantiations of this system: nominalized complements in Basque and inflected infinitival complements in Welsh.

6. Novel Consequences: Basque and Welsh

The OC/NOC distinction has an intriguing morphological correlate in Basque. Consider the following generalizations, adapted from San Martin 2004.

(18) Control in Basque I

- a. OC complements are untensed and bear inherent case (do not trigger agreement on the matrix Aux).
- b. NOC complements are tensed and bear structural case (trigger agreement on the matrix Aux).

The two types of complements are illustrated below. Notice the locative and absolutive case markings on the verbal heads of the complement clauses; the agreement on Aux—linked to the controller DP in (19a) but to the

complement clause in (19b); and the correlated (im)possibility of an embedded lexical subject.

- (19) a. Jon_i [PRO_i/*j/*Mariak ogia
 John.ABS PRO/*Maria.ERG bread-DET.ABS
 egiten] saiatu da.
 make.NMZ.LOC try Aux.3ABS
 'John has tried to make bread.'
- b. Jonek_i [pro_{j/i}/Mariak ogia
 John.ERG pro/Maria bread-DET.ABS
 egitea] pentsatu du.
 make.DET.ABS try Aux.3ABS.3ERG
 'John has decided to make bread.'
 'John_i has decided that he_{j/i}/Maria would make bread.'

The Basque facts are especially telling with respect to the role of [Agr] in control. Let us make the following natural assumption:

- (20) IP bears structural case and triggers agreement iff I⁰ bears [+Agr].

That is, structural case is always a reflex of an Agr feature-bundle, which in Basque is further mirrored on Aux.⁸ The OC complements of (18a) are thus specified [-T] on Comp (being untensed) and [-T, -Agr] on Infl (lacking case and agreement). The NOC complements of (18b) are specified [+T] on Comp (being tensed) and [+T, +Agr] on Infl (bearing case and agreement). By (13), Infl is associated with [-R] in the former case and [+R] in the latter. The respective licensing of PRO and lexical subjects follows.

As the complements in (19) are nominalized, their categorial status is somewhat unclear. Keeping the same featural analysis while substituting DP for CP above will yield identical results, as far as control is concerned.

In fact, although not systematically discussed by San Martin (2004), the system predicts two additional options, characterized in (21).

- (21) Control in Basque II
- Tensed complements without structural case (do not trigger agreement) ⇒ OC
 Comp is [+T], Infl is [+T, -Agr, -R] ⇒ PRO
 - Untensed complements with structural case (trigger agreement) ⇒ OC
 Comp is [-T], Infl is [-T, +Agr, -R] ⇒ PRO

⁸ An anonymous reviewer asks how structural case is compatible with the rejection of abstract Case in section 3. The two are really unrelated. Absolute, ergative, and dative in Basque are morphological cases because they are overtly marked; they are structural because they are "blindly" assigned in structural configurations, regardless of semantic roles. They are not "abstract" because they play no role in licensing. English, unlike Basque, has no morphological accusative case on lexical DPs. On the assumption that abstract Case does not exist, these DPs then bear no case/Case at all.

San Martin mentions in passing examples fitting these descriptions. (22a), with a tensed, uncased interrogative complement, exemplifies (21a), whereas (22b), with an untensed, cased implicative complement, exemplifies (21b). Both display OC.

- (22) a. Guk_i ez dakigu [PRO_i/*Jon nora joan].
 we.ERG NEG know PRO/*John where go
 'We do not know where (*John) to go.'
- b. Niri_i [PRO_i/*Jon erosketak egitea]
 I.DAT PRO/*John shopping do.NMZ.DET.ABS
 ahaztu zait.
 forget Aux.3ABS.1DAT
 'I forgot (*John) to do the shopping.'

Thus, Basque provides direct evidence for my central claim—namely, that it takes a positive value on both [T] and [Agr] to license a lexical subject, namely NOC.⁹

Let us turn now to a pattern of clausal complementation in Welsh, which supports the same conclusion. Tallerman (1998) analyses a range of tensed complements in Welsh along several dimensions (morphological, syntactic and semantic). Of particular interest here is how these complements break into the OC and NOC types. According to Tallerman, the NOC category consists of inflected infinitives occurring as complements to epistemic/declarative and desiderative verbs. The subject of such complements can be a lexical DP, a pronoun, or *pro*. The latter two trigger agreement on the infinitival marker *i* 'to'.¹⁰

- (23) a. Dywedodd Aled [iddi hi/*pro* fynd].
 said Aled to.3SG.FEM she/*pro* go
 'Aled said she'd gone.'
- b. Disgwylodd Aled [iddi hi/*pro* fynd].
 expected Aled to.3SG.FEM she/*pro* go
 'Aled expected her to go.'

⁹ San Martin (2004) argues that lexical subjects are only licensed in CP complements and *PRO* in TP complements. When Comp bears structural case, it endows Tense with a [+person] feature, which is necessary to license a lexical subject; [+T, -person] licenses *PRO*. The assumptions embodied in this analysis are problematic. First, lexical subjects are not restricted to CPs (e.g., small clauses). Second, how [case] on Comp induces [+person] on Infl is unclear, to say the least. Third, the implication that *PRO* lacks a [+person] feature (because it agrees with [-person] on Infl) is untenable, since it can bind and agree with items fully specified for [+person], like reflexives. San Martin introduces a number of other assumptions to derive the distribution of *PRO* (a special binding domain for control infinitives, a distinction between "checking" and "hosting" case, etc.), none of which is needed in the present account.

¹⁰ The lack of overt agreement with nonpronominal subjects is a general feature of Celtic languages, independent of these constructions. Tallerman plausibly argues for an abstract [+Agr] specification for such cases. Similarly, the optionality of overt inflection on inflected infinitives in European Portuguese does not reduce their capacity to license a lexical subject. Aux-to-Comp infinitives in Italian may be amenable to a similar treatment (see Raposo 1987).

The OC category—at least the representatives of that category discussed by Tallerman—consists of complements to desiderative verbs. These verbs always select irrealis complements, whose temporal realization is subsequent to (hence, distinct from) the temporal realization of the matrix event. Therefore, these are tensed complements. Crucially, however, the infinitival marker is uninflected, surfacing as *i* ‘to’ (24a), *o* ‘of’ (24b), or \emptyset (24c).

- (24) a. Gwnaeth Elen gytuno [i/*iddi ddarllen y llyfr].
 did Elen agree to/*to.3SG.FEM read the book
 ‘Elen agreed to read the book.’
 b. Mae Aled yn falch [o/*ohono weld Mair].
 is Aled PRED pleased of/*of.3SG.MASC see Mair
 ‘Aled is pleased to see Mair.’
 c. Dymunai Aled [fynd adre’].
 wanted Aled go home
 ‘Aled wanted to go home.’

Within my system, these complements are assigned the following analysis.

- (25) Control in Welsh
 a. (i) Inflected tensed declarative/epistemic complements \Rightarrow NOC
 Comp is \emptyset , Infl is [+T,+Agr,+R] \Rightarrow lexical DP/*pro*
 (ii) Inflected tensed desiderative complements \Rightarrow NOC
 Comp is [+T], Infl is [+T,+Agr,+R] \Rightarrow lexical DP/*pro*
 b. Uninflected tensed desiderative complements \Rightarrow OC
 Comp is [+T], Infl is [+T,-Agr,-R] \Rightarrow PRO

The source of NOC in category (25a) is the combination [+T,+Agr] on Infl, which produces a [+R] feature, checkable by lexical DPs/*pro* only. Notice that the presence or absence of [+T] on Comp (i.e., whether or not the embedded tense is dependent) has no effect on the control issue. For this reason, the semantic distinction between declarative/epistemic and desiderative verbs is of no consequence for inflected infinitives.¹¹

The source of OC in category (25b) is the combination of [+T,-Agr] on Infl, which produces a [-R] feature, checkable by PRO only. Again, the fact that OC complements are selected by the same semantic class of verbs—desideratives—that select NOC infinitives (when inflected) is of no consequence for

¹¹ Tallerman (1998) does distinguish (25a-i) from (25a-ii), analyzing the former as [+finite] and the latter as [-finite]. The underlying assumption is that finiteness is a grammatical primitive irreducible to tense/agreement features. Exactly this assumption is challenged by the theory of Landau 2004, where finiteness is construed as a scale, not a dichotomy, constructible from the primitives [T] and [Agr].

control. The effect of [+T] (a reflection of the irrealis tense selected by desiderative verbs) is neutralized by [−Agr].¹²

The Welsh facts demonstrate very clearly that purely semantic approaches to OC are doomed to failure. That is, any approach that attempts to derive the OC status of a given complement solely on the basis of the semantics of the selecting predicate (e.g., Jackendoff & Culicover 2003) will be unable to explain how predicates in the same semantic class contrast in their control properties, and why this contrast is tied to the presence of agreement—an uninterpretable, formal feature.

In summary, in this section I showed that the analytic system for clause typology developed in Landau 2004 straightforwardly extends to nominalized clausal complements in Basque and infinitival complements in Welsh (inflected and uninflected). The status of any given complement type is fully determined by the [T] and [Agr] values on its Infl and Comp heads. A recurrent observation, valid in Basque and Welsh as well, is the heterogeneous (“elsewhere”) character of the OC category, as compared with the relatively uniform profile of NOC complements. This asymmetry, to my knowledge, is not explained (or even addressed) by most alternatives to the present account.

7. Conclusion

Control constructions are realized in many different forms across the world languages. To capture significant underlying generalizations, one must identify the constituent features that classify the different constructions to OC and NOC categories. Landau (2004) developed an analytic system with this goal in mind, on the basis of standard infinitives, subjunctives in Balkan languages and Hebrew, and inflected infinitives in Hungarian and European Portuguese. This paper provides further empirical support for the system: in Basque, the OC/NOC distinction maps to a morphological indicator (namely, structural case on the infinitive) that interacts with semantic tense to yield the predicted correlations. In Welsh, the distinction correlates with the absence or presence

¹² Unlike Tallerman, who assumes that *i* is ambiguous—an Agr_S element in NOC clauses, a complementizer in OC clauses—I assume that *i* uniformly lexicalizes Infl. Tallerman presents three arguments in favor of the distinction. First, the fact that OC *i* does not inflect and NOC *i* does follows if the former is Agr_S and the latter is Comp. However, it equally follows if *i* lexicalizes [−Agr] in OC complements and [+Agr] in NOC ones (in fact, because complementizers sometimes do inflect, Tallerman must assume anyway that her complementizer *i* is [−Agr]). Second, the variation between *i*, *o*, and \emptyset (see (24)) is supposedly explicable if they are all complementizers, unrelated to the invariant inflected *i* in NOC complements. But given that this variation must be lexically encoded in any account, it is unclear why taking all these morphemes to be instances of Infl is more arbitrary than positing two unrelated homophonous *i* morphemes. The third argument is based on the observation that NOC *i*-clauses must extrapose whereas control *i*-clauses do not. Tallerman claims that the generalization can be stated in terms of the status of *i* (Infl vs. Comp); clearly, though, this statement is no more explanatory than the statement “clauses with lexical subjects must extrapose.” The phenomenon itself is still a puzzle. Perhaps most telling is the fact that the alleged complementizer *i* cannot co-occur with inflectional *i/o*. Tallerman devises a complex, technical solution, but the restriction automatically follows if all these morphemes compete for a single syntactic slot (namely, Infl).

of inflection on the infinitival head of the complement, again in the predicted manner.

One of the main corollaries of this analysis is the absolute irrelevance of abstract Case to the key question of how to distinguish the environments where PRO and lexical subjects are licensed. To be sure, the occurrence of either PRO or lexical subjects crucially depends on the values of [T] and [Agr] in their clauses; this dependence, however, is not mediated by abstract Case (or government), as in most prevailing accounts. Indeed, the first part of this paper showed that whenever the language provides means of detecting the actual case on PRO (e.g., case concord on agreeing items), clear evidence emerges that it does bear case—exactly that which a lexical subject would bear in a parallel finite environment. It was further suggested that abstract Case warrants general skepticism, as it is far from obvious that it fulfills any nonredundant, explanatory role in syntax.

The results of this study bear important implications for several alternative approaches to OC. Theories that reduce OC to movement must face the puzzle why the foot of the OC “chain” is case-marked, unlike the foot of normal A-chains. Furthermore, the notion of semantic tense seems to play no role in such theories. Thus, it is somewhat a mystery for them why, for instance, tensed complements in Basque and Balkan languages may display NOC whereas untensed ones display OC. Turning to semantic approaches to OC, their chief weakness is the failure to incorporate the effects of formal, uninterpretable features on OC—for example, the role of [Agr]. The fact that inflected infinitives often display a different control pattern than uninflected ones, for example, cannot be captured in purely semantic terms.

The present analysis meets these empirical challenges because it is explicitly attentive to the interplay between morphological agreement and semantic tense in the grammar of control. Although this analysis may incorporate assumptions that could prove to be wrong, it is at least free of assumptions that *are* provably wrong. Moreover, the analysis here is thoroughly crosslinguistic in spirit; it is informed by the understanding that progress toward explanatory adequacy cannot possibly be made without considering the typological implications of any purported UG component. Hopefully, this study is a step toward that goal in the domain of control.

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