Subject distribution in Tamil and other languages: selection vs. Case

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ABSTRACT

This paper presents an alternative account of DP distribution that is based on DPs being selected rather than being Case-theoretically licensed. We argue that the fundamental prediction made by Case theory, namely that obligatorily controlled PRO and overt DPs are in complementary distribution, is not empirically justified. To this end, we provide data from nonfinite clausal adjuncts, complements and gerundivals in Tamil where subject controlled PRO and overt subject DPs seem to alternate in free variation. We further illustrate, with supporting evidence from Malayalam, Sinhala, Latin, Irish, and Middle English as well as the Present-Day English gerundival construction, that this type of problematic alternation is not a language-specific quirk but a widely attested crosslinguistic phenomenon. While standard Case theories are equipped to handle either the occurrence of PRO or that of an overt subject, they are unable to consistently handle the alternation between both types of elements. Our selection analysis is designed to handle the alternations as well as instances where only one DP type is allowed.

1 Introduction

In Tamil[1], simple infinitive clauses can function as adjuncts with purpose or temporal interpretation, as in (1). Such infinitives can appear with an implicit subject which has to be coreferent with a matrix argument – i.e. we get obligatory control PRO, as in (1a). However, it is also possible to have an overt non-coreferent subject in the nominative case, as in (1b).[2]

(1) a. Raman$_i$ [PRO$_{i/*j}$ puuri porikk-a] maavu vaangi-n-aan
Raman.NOM PRO puuri.ACC fry-INF flour.ACC buy-PST-M.3SG
'Raman bought flour to fry puuris.' (PURPOSIVE)
'Raman bought flour while frying puuris.' (TEMPORAL)

b. Raman [**Vasu** puuri porikk-a] maavu vaangi-n-aan
Raman.NOM Vasu.NOM puuri.ACC fry-INF flour.ACC buy-PST-M.3SG
'Raman bought flour for Vasu to fry puuris.' (PURPOSIVE)
'Raman bought flour while Vasu fried puuris.' (TEMPORAL)

Such data are problematic for standard theories of DP distribution based on abstract Case, as it is not clear what could be assigning or checking Case to license the overt subject in (1b). Indeed, we have an alternation between PRO and overt subjects in such clauses which does not seem to correlate with any independently identifiable morphological, syntactic or semantic property. As Case theory is standardly based on the assumption that PRO and overt DPs are in complementary distribution, this presents a puzzle.

[1] One of the four major languages of the Dravidian family, spoken, among other areas, primarily in parts of South India, Sri Lanka, and Singapore, Tamil is a subject *pro*-drop language with rich case and agreement morphology, wide scrambling, and SOV clause structure.

[2] We will follow the common convention of using capitalization to help distinguish abstract syntactic **Case** – the theoretical construct used to account for DP distribution in terms of licensing – from morphological **case** – the typically overt marking on DPs in many but not all languages. Hence we refer to nominative case to describe the overt form of *Vasu* in (1b), but abstract Case below when discussing how the same DP might be licensed.

In this paper we examine these and related data in more detail and explore the implications they have for syntactic theory. To this end, we present new data from Tamil nonfinite complements, adjuncts and gerundivals. However, the conclusions we draw have more general theoretical relevance, and we will present considerable additional data from other languages to show that the patterns we report are not quirks of Tamil which may call for a language-specific explanation but a more widespread issue that is attested in several languages. We begin in Section 2 with a brief review of standard Case-theoretic assumptions about the licensing of DPs and the basic data that motivated them. Then in Section 3 we present the main Tamil data and explain why they are problematic for Case theory. In Sections 4 and 5 we bring in comparative data to support the conclusions we draw on the basis of Tamil, first from the South Asian languages Malayalam and Sinhala, and then from several European languages such as Latin, Irish, Middle English, and Present-Day English. We briefly consider and reject three possible ways to accommodate the problematic data within Case theory in Section 6, including discussion of the previous theoretical treatment of some of the Tamil data by Sarma (1999). In Section 7, we propose and motivate an alternative analysis in which the distribution of DPs is based on selectional requirements of lexical and funcional heads rather than licensing needs of the DPs themselves. Finally, Section 8 presents a summary of our data and analysis and their relevance for syntactic theory.

We will ultimately be arguing that a simple (binary) notion of finiteness is insufficient for understanding DP distribution. However, in order to avoid confusion we will continue to use standard terminology in the more descriptive portion of this article in Sections 3–5. That is, for now we will still talk of infinitives, and finite and non-finite clauses, as identified on essentially morphological grounds.[3] These are crucially intended only as convenient descriptive labels. When we present our analysis in Section 7, we will propose a more nuanced scale of dependency to replace finiteness in the discussion of DP distribution.

2 Background: standard Case theory

To set the stage, it will be helpful to consider the main ideas and motivation behind accounts of overt DP distribution in terms of abstract Case.[4] The fundamental assumption is that overt DPs are somehow defective and need help in order to be licensed. Specifically, they can only appear in places where some element can assign or check their Case. In all other contexts, overt DPs are disallowed. Object DPs are assumed to get Case from the verb and the functional heads related to voice and aspect found immediately above, so their licensing depends on the identity and properties of the lexical verb and the voice and aspect of the clause. Subjects, on the other hand, are assumed to get Case from the functional heads in the Infl complex or further up in the left periphery. Subject licensing and distribution are thus directly related to the finiteness of the clause. Specifically, finite inflection (in T, Agr

[3]E.g. Tamil "infinitives" are those forms built by suffixing -*a* to the primary stem. "Finite" verbs are any forms bearing both tense and agreement suffixes. We do not necessarily expect that either of these morphological categories will display unified syntactic behavior as regards subject type or anything else for that matter.

[4]Case theory has of course undergone significant revisions since it was first proposed early in the Government and Binding era. In this section and elsewhere, we will try as much as possible to focus on the foundational ideas that are common to all vintages of Case theory and abstract away from points of detail where they differ from each other. Where it is necessary to focus on one particular version or non-universal detail, we will be as explicit as possible.

for instance) is assumed to assign nominative Case to the subject position, so overt subjects are licensed in finite clauses, whether matrix or embedded, as in (2):

(2) Mitch believes [that Lazlo lives in the steam tunnels].

Infinitives, on the other hand, lack this inflection and thus don't assign nominative Case. This means that, by default, overt subjects are impossible in infinitives, as the following examples show:

(3) a. * [Lazlo to live in the steam tunnels] would be strange.
b. * Mitch tried [Lazlo to live in the steam tunnels].

However, there are infinitives with overt subjects. In English these include infinitives that are introduced by the prepositional complementizer *for*, as in (4a), and those that follow so-called ECM (exceptional Case-marking) verbs like *believe*, as in (4b).

(4) a. [**For** Lazlo to live in the steam tunnels] would be strange.
b. Mitch **believes** [Lazlo to live in the steam tunnels].

This is where Case theory gets interesting. The claim is that elements like *for* and *believe* assign Case to the following subjects, thereby allowing them to be overt even though the clause is nonfinite.[5] This idea has some empirical plausibility, since prepositions and transitive verbs do determine the morphological case on following DPs in languages with rich case systems. In German, for example, the object of the preposition *mit* 'with' is marked dative, while that of *ohne* 'without' is accusative. Similarly, among verbs *helfen* 'help' takes a dative object while *unterstützten* 'support' takes an accusative. So what we see on the surface in German is supposed to happen abstractly in English infinitives.

Crucially, analogous case-assigners are conspicuously lacking in the sentences in (3) above where an overt subject was impossible. If the subject is instead left non-overt in such sentences, the result is grammatical:

(5) a. [PRO_{arb} to live in the steam tunnels] would be strange.
b. Mitch_i tried [$\text{PRO}_{i/*j}$ to live in the steam tunnels].

So it appears that an overt subject is possible in nonfinite clauses just where a Case-assigner is available, and where one isn't available, the subject must be non-overt PRO. If the Case requirement has something to do with (overt) morphology, it is perhaps plausible that it should treat a silent element like PRO differently. In later versions of Case theory, it has been commonly assumed that PRO does in fact get a special kind of Case called null Case, which licenses PRO and nothing else (see e.g., Chomsky and Lasnik, 1993; Martin, 2001). For our purposes this still means that PRO and overt subjects are distinguished in terms of Case.

[5]The term ECM refers to the fact that the structural configuration for Case-assignment here is a bit different from that normally found with DP objects of verbs and prepositions. While the latter are generally assumed to be the complements of their Case-assigners, the embedded subjects in sentences like (4a) and (4b) are in the specifier position of the phrase that is the complement of *for* and *believes* respectively. This situation is less awkward in more recent versions of Case theory within Minimalism: these assume that Case assignment or checking operates via Agree, which in turn depends not on a specific structural configuration like specifier or complement but on minimal c-command, which would be equally satisfied in all relevant constellations.

There is now an extensive body of work which has identified serious problems with Case theory, either proposing significant revisions or arguing that it should be abandoned entirely. Some representative contributions in this area are Zaenen, Maling, and Thráinsson (1985); Yip, Maling, and Jackendoff (1987); Marantz (1991); McFadden (2004); Landau (2006) and Sigurðsson (2008, 2009). We intend the current paper to be understood as a continuation of this tradition, adding to the case against abstract Case. However, we will be presenting new evidence which allows a novel kind of argument against Case.[6] We also present a distinct proposal about what should replace abstract Case in places where it did work within the theory. For these reasons we will not provide significant discussion of the earlier work in this vein, directing the reader instead to the citations above.

3 Tamil nonfinite clauses and the licitness of subjects

In this section, we present a detailed description of nonfinite clausal structures attested in Tamil, specifically: obligatory control complements (such as those of 'try'-class verbs), complements allowing both controlled PRO and overt embedded subjects (such as those of 'want'-class verbs), purposive and temporal adjunct infinitives as well as gerundivals showing the same alternation. At the end of this section, we also present evidence to show that the null coreferent element in the subject position of the embedded clauses here is controlled PRO and not little *pro* and that the relative hierarchy of arguments is as presented and not solely the result of scrambling.

3.1 Obligatory control complement infinitives

The first type of Tamil infinitive we'll look at appears as the complement of verbs like *paar-* 'try'.[7] Such infinitives require a non-overt subject, which is obligatorily coreferent with the matrix subject, as in (6a). Adding an overt subject, as in (6b) yields ungrammaticality:

(6) a. Raman$_i$ [PRO$_{i/*j}$ saadatt-ai saappiḍ-a] paa-tt-aan
Raman.NOM PRO rice-ACC eat-INF try-PST-3m.sg
'Raman tried to eat rice.'

b. * Raman [Anand saadatt-ai saappiḍ-a] paa-tt-aan
Raman.NOM Anand.NOM rice-ACC eat-INF try-PST-3m.sg
'Raman tried Anand to eat the rice.'

This pattern taken on its own fits in very nicely with standard Case theory. The complement clause is nonfinite, so by default an overt subject should be impossible. Furthermore, there is no special Case licensor like a potential ECM verb or prepositional complementizer like English *for* to override this default and exceptionally license an overt subject. As Case theory predicts, we instead get obligatorily controlled non-overt subject PRO.

[6] Much of the previous work was devoted to showing that case morphology is dissociated from DP licensing in ways that go against the predictions of Case theory, often concentrating on so-called quirky Case phenomena. We will only tagentially touch on that topic, concentrating rather on problems in the distribution of PRO and overt DPs that are independent of case morphology.

[7] We use the primary stem as the citation form for Tamil verbs, which has all stem-forming and inflectional material stripped off. The data are based on the native-speaker intuitions of the first author and are essentially from Spoken Tamil, although Written Tamil forms have been used where necessary to make the morphological structure more clear.

Indeed, what we see here is entirely parallel to the behavior of infinitives embedded below obligatory subject control verbs in English, often called the *try*-class. Sentences (3b) and (5b) discussed in Section 2 above are examples of this type, as are those in (7):

(7) a. John$_i$ tried [PRO$_{i/*j}$ to eat turkey]
b. * John tried [Bill to eat turkey]

(7a) shows that the infinitival complement of *try* can have a covert subject which is coreferent with the matrix subject, while (7b) shows that an overt subject in such a clause is ruled out. Tamil obligatory control complement infinitives thus behave just like one of the classes of English infinitives that is central to the motivation for abstract Case. So far, then, Tamil presents no problem for Case theory.

3.2 Alternating complement infinitives

A second type of infinitive clause in Tamil appears as the complement of verbs like *veɳɖ-* 'want'. Verbs like *veɳɖ-* take a dative subject which co-occurs either with a nominative object, as in (8a), or with an infinitival complement, as in (8b):

(8) a. **Nominative object:**
Champa-vukku oru samosa veɳɖ-um
Champa-DAT a samosa.NOM want-N.3SG
'Champa wants a samosa.'

b. **Infinitival complement with PRO:**
Champa-vukku$_i$ [PRO$_i$ oru samosa-vai saappiɖ-a] veɳɖ-um
Champa-DAT PRO a samosa-ACC eat-INF want-N.3SG
'Champa wants to eat a samosa.'

In (8b), the embedded subject is non-overt and is again obligatorily coreferent with the matrix subject. However, an overt (noncoreferent) nominative DP subject is also licit, as in (9):

(9) **Infinitival complement with overt nominative DP:**
Champa-vukku [Sudha oru samosa-vai saappiɖ-a] veɳɖ-um
Champa-DAT Sudha.NOM a samosa-ACC eat-INF want-N.3SG
'Champa wants Sudha to eat a samosa.'

This pattern is again very similar to something we find in English, namely infinitives appearing as the complements of so-called *want*-class verbs, as in (10):

(10) a. Sue$_i$ wanted [PRO$_{i/*j}$ to drink beer]
b. Sue$_i$ wanted [Jill/her$_{*i/j}$ to drink beer]

The presence of PRO as a nonfinite subject in (10a) is quite unproblematic within standard Case theory given the assumption that nonfinite clauses normally cannot take overt subjects because they lack adequate Case-assigners. But under this assumption, the presence of the overt DP in (10b) is entirely unexpected. The English pattern has traditionally been analyzed in two different ways within Case theory. Either verbs like *want* can license an embedded overt subject via ECM, or there is a null variant of the prepositional complementizer *for*

which can do the same thing (see e.g., Bošković, 1997; Martin, 2001, for discussion of these possibilities). In either case, some sort of optionality is required, since the conditions for overt DP licensing must obtain in (10b) but not in (10a), where the distinct requirements for PRO licensing must hold instead.[8]

The data in Tamil are similar to those in English, with the following important differences. First, the embedded overt DP in Tamil is marked nominative and not accusative. Second, Tamil also allows dative subjects in the infinitive if the embedded verb is a "quirky"-dative assigning verb (like *puriy-* 'understand'):

(11) **Infinitival complement with overt dative DP:**
champa-vukku [sudha-vukku viʃiyatt-ai puriy-a] veɳḍ-um
champa-DAT sudha-DAT the.matter-ACC understand-INF want-N.3SG
'Champa wants Sudha to understand the matter.'

The example below shows that *puriy-* 'understand' takes a dative subject in a finite clause:

(12) **Finite clause with dative DP subject:**
champa-vukku viʃiyatt-ai puri-nd-adu
champa-DAT the.matter.ACC understand-PST-N.3SG
'Champa understood the matter.'

The possibility of structures like in (11) above suggest that the morphological case on the embedded subject has something to do with the embedded predicate and is, as such, being supplied internal to the embedded clause.Our analysis of overt DP subjects in nonfinite complement clauses should therefore extend this analysis to the case-marking in structures like (9), where a nominative subject shows up in the same position. This in fact, as we discuss later, is the kind of analysis that Gair (2005) makes for corresponding clausal structures in Sinhala.

Sarma (1999) proposes a Case-theoretic account for the kind of Tamil data shown in (9) which is analogous to the ECM analysis for English. Thus at first glance these data might not seem to present a challenge for Case theory. However, as we will argue below, neither treatment of English *want*-class complements is convincing, nor is Sarma's story for Tamil.

[8]Instead of optionality, one could assume that the examples in (10a) and (10b) have different syntactic structures due to a different semantics for *want* in each case. Accordingly, we might propose two alternative structures for (10b): an object control structure or an ECM structure (Bošković, 1997; Martin, 2001), as follows:

(i) Sue$_i$ wanted Jill$_j$ [$_{CP}$ PRO$_{*i/j}$ to drink beer] (OBJECT CONTROL)
(ii) Sue$_i$ wanted Jill$_j$ [$_{TP}$ t$_j$ to drink beer] (ECM)

But an immediate problem arises with the above alternative structures: if *Jill* is in the matrix clause as a direct object, we would expect it to be passivizable. But this prediction isn't borne out:

(iii) *Jill was wanted to drink beer

In contrast, the direct object DP in both object control- and ECM structures can be passivized, just as expected:

(iv) Matthias$_i$ was persuaded t$_i$ [$_{CP}$ PRO$_i$ to attend the AA meeting]
(v) Matthias$_i$ was expected t$_i$ [$_{TP}$ t$_i$ to become an alcoholic]

Given such immediate empirical problems with potential alternative structures for problematic constructions like (10b), we for now don't pursue this line of argumentation. Instead, we assume that (10a) and (10b) have the same syntactic structure, as discussed.

The main issue will turn out to be that Case theory is not designed to accommodate an alternation between overt subjects and PRO in a single context as we find here. Rather, complementary distribution of the two is expected; thus, alternating complement infinitives will present a problem.

3.3 Adjunct infinitives

A third type of Tamil infinitive clause, which we briefly introduced at the beginning of the article, appears as an adjunct in the matrix clause, with either a temporal or a purposive interpretation. These too allow both obligatorily controlled PRO and overt DPs in the embedded subject position. Consider the examples in (13):

(13) a. PRO:

[PRO$_{i/*j}$ saadatt-ai saappiḍ-a], naan$_i$ veḷiya poo-n-een
PRO rice-ACC eat-INF, I.NOM outside go-PST-1SG

'I went out (in order) to eat rice.' PURPOSE INTERPRETATION
'As I ate rice, I went out.' TEMPORAL INTERPRETATION

b. OVERT SUBJECT:

[avan saadatt-ai saappiḍ-a], naan veḷiya poo-n-een
he.NOM rice-ACC eat-INF, I.NOM outside go-PST-1SG

'I went out (in order) for him to eat rice.': PURPOSE INTERPRETATION
'As he ate rice, I went out.': TEMPORAL INTERPRETATION

From the perspective of Case theory, (13a) is as expected. The embedded clause is nonfinite, so by default a PRO subject is predicted. The fact that we get an overt subject *avan* 'he' in (13b), on the other hand is, however, quite surprising, as it is not at all clear what could be licensing it. Just as with the PRO example in (13a), special Case-licensors seem to be absent. First, there is no evidence for a prepositional complementizer like *for* to license the overt subject.[9] Second, the matrix verb *pooneen* 'went.1sg' is clearly not an ECM verb: standard ECM verbs are transitive, whereas this verb is intransitive. Third, the matrix verb does not c-command the embedded subjects in (13a) and (13b), since the infinitival clauses are adjuncts. So the structural conditions for ECM are not met. It appears then, that Tamil adjunct nonfinite clauses with overt subjects pose a serious problem for standard theories of Case. Furthermore, we have the same problem here as with the alternating complements: we don't just get unexpected overt subjects, but an alternation between overt subjects and PRO. This alternation again will prove to be a challenge for Case theory.

3.4 Gerundivals

Gerundival constructions in Tamil are also similar in important respects to the adjunct infinitival clauses. Instead of the infinitive form of the verb, these are built around a gerundival clause:

(14) Raman veelai-ai **sey-v-ad-ukku** college-ukku poo-n-aan
Raman.NOM work-ACC do-FUT-GER-DAT college-DAT go-PST-M.3SG
'Raman went to college for doing work.'

[9] Postpositions and prepositions in Tamil typically take oblique DP complements whereas in the types of structures under consideration here, the DP is marked nominative.

The gerundival element, boldfaced in the example above, is overtly marked for future tense as well as for dative case.[10] The dative marking contributes the meaning of purpose whereas the future tense marking expresses an unmarked temporal interpretation. Although the future tense marker shown in (14) is the most common form used in this type of construction (presumably because the purposive construction most often refers to an event that still needs to be completed relative to the time-frame of the main event in the clause), it can be readily replaced by either present or past forms. Additionally, no sequence-of-tense (SOT) effects (Enç, 1987; Abusch, 1997, and many others) are found: the tense of the gerudival clause is not anaphoric on that of the "matrix" clause in any way and can be varied independently from it. The structure in (15) below shows that the tense of the gerundival can be other than future while that in (16) illustrates that this tense can, furthermore, be different from that of the "main" clause:

(15) **Past-gerundival under past**
Raman$_i$ [PRO$_{i/*j}$ veelai-ai **sey-d-ad-ukku**] paris-ai **vaangi-n-aan**
Raman.NOM PRO work-ACC do-PST-GER-DAT prize-ACC get-PST-M.3SG
'Raman got a prize for having done the work.'

(16) **Past-gerundival under future**
Raman$_i$ [PRO$_{i/*j}$ veelai-ai **sey-d-ad-ukku**] paris-ai **vaangu-v-aan**
Raman.NOM PRO work-ACC do-PST-GER-DAT prize-ACC get-FUT-M.3SG
'Raman will get a prize for having done the work.'

As concerns interpretation, the subject of the gerundival clauses in (15) and (16) is a null element that is obligatorily coreferent with the matrix subject *Raman* – i.e. obligatorily controlled PRO. The purposive interpretation is conveyed by the dative marker on each gerund, but the tense meanings vary according to the tense marker used. That the tense on the gerundival can be varied independently from that of the "matrix" clause demonstrates that the former is real semantic tense and neither lexicalized/"dead" nor syntactico-semantically anaphoric in any way, as has been argued for structures with SOT effects. Nevertheless, there is still a difference between the T head in such constructions and those in standard finite clauses: the T head within the gerundival structure is deficient because it does not bear overt subject agreement. The reason such tensed gerundivals are interesting for our purposes is that they allow not only a PRO subject coreferent with the matrix subject, but also an overt non-coreferent subject, as in (17):

(17) **Past-gerundival with overt subject:**
[Raman veelai-ai sey-d-ad-ukku] Sudha paris-ai vaangi-n-aal
Raman.NOM work-ACC do-PST-GER-DAT Sudha.NOM prize-ACC get-PST-F.3SG
'Sudha got a prize for Raman's having done the work.'

Note here that in contrast to the null subject structure in (15), the matrix verb in (17) above does not agree with *Raman* but with the feminine subject *Sudha*. *Raman* is the agent in the event described by the gerundival, namely the event of doing the work and, thus, a part of this gerundival structure. What makes it potentially problematic for Case theory is that the DP *Raman* shows up with nominative case, not genitive, the case we would expect if it were introduced outside the gerundival and which could be accounted for in standard Case

[10]The dative marker seems to be functioning like a prepositional complementizer (e.g. English *for*) here, marking the entire gerundival clause.

theories (see e.g Chomsky, 1981). What could be assigning nominative case to *Raman*? It couldn't be the finite T of the main clause, because this should already be checking off its nominative case feature against the main nominative subject *Sudha*, which the main verb agrees with. Instead, it looks like what is being gerundivalized is an entire clause including the subject *Raman*, which means that *Raman* must be getting its nominative internal to this gerundival clause. But how is this licensed? We could argue that the tense within the gerundival is responsible for structural nominative Case, licensing *Raman*. But there are a couple of problems with this. One is that the gerundival structure does not appear to be a fully finite clause. Although tense is overtly marked, there is, as we've noted, no overt subject agreement. It is not clear that we should expect a thus deficient T to be able to check Case on *Raman* in the standard way.[11] The other problem is that this type of gerundival structure again does not have to show up with an overt DP but can alternate with obligatorily controlled PRO in the same position as the overt DP. This is an issue because, while either of the structures in (15) or (17) can be individually explained within the premises of Standard Case theory, a unified analysis of both structures would be unfeasible. For instance, the structure with the overt DP in (17) could be explained in the way we've already described, namely by saying that the subject of the gerundival clause *Raman* gets Case from the (semi-)finite T within the gerundival structure. For the structure in (15), we could say that the PRO gets special null Case from the deficient T within the gerundival clause. But having both possibilities requires the same T to have two different statuses.

3.5 Brief excursus: evidence for OC PRO vs. little *pro*

In all the examples discussed so far, we have tacitly assumed that the non-overt embedded subject is controlled PRO. For a null subject language with rampant scrambling, such an assumption is, however, not trivial. Thus we will now present two pieces of evidence for the presence of OC PRO: obviation of Weak Crossover (WCO) effects (also termed the "PRO-gate" effect), and obligatory coreference effects. Then we will give data showing that in the nonfinite adjunct and complement structures under investigation, the relevant arguments are indeed in the embedded clause, not the matrix clause.

3.5.1 Obviation of WCO effects

Jaeggli and Safir (1989) note that controlled PRO, but not little *pro*, can obviate WCO effects – in other words, OC PRO seems to function as a "gate" for WCO, rendering a normally ungrammatical phenomenon, grammatical (the observation being originally due to Higginbotham, 1980). This is shown below for English:

(18) * $[_{CP}$ Who(m)$_i$ did $[_{DP}$ John$_i$/him$_i$ washing his$_i$ car] upset e$_i$]?
(19) $[_{CP}$ Who(m)$_i$ did $[_{DP}$ PRO$_i$ washing his$_i$ car] upset e$_i$]?

The ungrammaticality in (18) is held to arise because the *wh*-operator "crosses over" the coreferent possessive pronominal *his* in the DP *his car* while raising to matrix [Spec, CP]:

[11] A reviewer points out that what we characterize here as tense markers might actually be aspect, as suggested for related Dravidian languages, Kannada and Malayalam, in Amritavalli and Jayaseelan (2005). We will not take a strong position on this distinction, but note that our arguments here would not be weakened either way, since aspect is not standardly thought to license overt subjects within Case theory, and in any case the problematic alternation would remain.

the term "Weak Crossover (WCO)" refers to this phenomenon and the term "WCO-effect" standardly refers to the ungrammaticality resulting from it. In (19) there is also WCO, but the structure is nevertheless grammatical. Since the structures in (18) and (19) essentially form a minimal pair, with the only difference between them being the identity/nature of their gerundival subjects, the conclusion is that it is the nature of the gerundival subject in (19) – specifically the presence of PRO – that allows WCO in this structure. Jaeggli and Safir (1989) show, furthermore, that in *pro*-drop languages like Spanish, *pro* patterns with overt pronouns and not with PRO.[12] The Spanish examples from Jaeggli and Safir (1989) are reproduced below (formatting ours):

(20) ?/* A-quién$_i$ acusó la mujer$_j$ que$_j$ bailó con él$_i$?
whom$_i$ accused the woman who danced with him
'[$_{CP}$ Who(m)$_i$ did [$_{DP}$ the woman$_j$ [$_{CP}$ who$_j$ [$_{TP}$ e$_j$ danced with him$_i$]]] accuse e$_i$]'?

(21) ?/* A-quién$_i$ acusó la mujer$_j$ con quien bailó?
whom$_i$ accused the woman with whom danced
'[$_{CP}$ Who(m)$_i$ did [$_{DP}$ the woman$_j$ [$_{CP}$ with who(m)$_j$ [$_{TP}$ *pro*$_i$ danced e$_j$]]] accuse e$_i$]'?

The example in (20) shows that a *wh*-operator may not cross over an overt pronoun, even when this is contained within another DP. The structure in (21) shows that this same ungrammaticality arises when this pronoun is covert. Jaeggli and Safir (1989) thus take this to be a diagnostic for PRO vs. *pro*: specifically, a null element that obviates WCO-effects is PRO; one that preserves the ungrammaticality due to WCO is little *pro*. Implementing this useful diagnostic for Tamil, we obtain the following in the control structures in (22) and (23). WCO-effects obtain in (22) (which has an overt pronoun *avan* as the gerundival subject), but do not obtain in (23) where the gerundival subject is covert and corefers with the *wh*-operator *yaarai* ("whom"). From this, we conclude that the silent gerundival subject in (23) is PRO and not *pro*.

(22) * yaar-ai$_i$ [avan$_i$ tann-ooɖa$_i$ car-ai alambinadu] t$_i$ sandooʃappaɖutt-idu?
who-ACC$_i$ him$_i$ self-GEN$_i$ car-ACC having-washed made-happy-3N-SG
'[$_{CP}$ Who(m)$_i$ did [$_{DP}$ him$_i$ having washed his$_i$ car] make happy?]'

(23) yaar-ai$_i$ [PRO$_i$ tann-ooɖa$_i$ car-ai alambinadu] t$_i$ sandooʃappaɖutt-idu?
who-ACC$_i$ PRO$_i$ self-GEN$_i$ car-ACC having-washed made-happy-3N-SG
'[$_{CP}$ Who(m)$_i$ did [$_{DP}$ PRO$_i$ having washed his$_i$ car] make happy?]'

3.5.2 Obligatory coreference effects

The second type of evidence we present in favor of obligatory controlled PRO vs. little *pro* is that of obligatory coreference readings between the silent embedded subject and the matrix antecedent. We show this with all four types of constructions in Tamil to be discussed in this paper which involve a silent embedded subject:

(24) **Nonfinite controlled clausal complement (*paar-* 'try'-class):**

[12] This shows, in turn, that the obviation of WCO effects is not merely a phonological matter: specifically, it shows that it is not the mere absence of phonological material in gerundival-subject-position that obviates WCO-effects.

Raman$_i$ [PRO$_{i/*j}$ kaapi-ai kuḍikk-a] paattaan
Raman.NOM PRO coffee-ACC drink-INF tried.3m.sg
'Raman tried to drink coffee.'

(25) **Nonfinite purposive clausal adjunct:**
Raman$_i$ [PRO$_{i/*j}$ pariccai-ai erud-a] school-ukku poo-n-aan
Raman.NOM PRO exam-ACC write-INF school-DAT go-PST-M.3SG
'Raman went to school to write the exam.'

(26) **Nonfinite clausal complement (*veṇḍ-* 'want'-class):**
Champa-vukku$_i$ [PRO$_{i/*j}$ kaapi-ai kuḍikk-a] veṇḍ-um
Champa-DAT PRO coffee-ACC drink-INF want-N.3SG
'Champa wants to drink coffee.'

(27) **Past gerundival:**
Sudha$_i$ [PRO$_{i/*j}$ avvaḷavu kaapi-ai kuḍi-tt-ad-ukku] paris-ai
Sudha.NOM PRO so.much coffee-ACC drink-PST-GER-DAT prize-ACC
vaangi-n-aaḷ
get-PST-F.3SG
'Sudha got a prize for having drunk so much coffee.'

As the indexation shows, in all the structures attested in (24) - (27), the covert subject has to be coreferent with the matrix subject and not with any other entity. Before we reach a decisive conclusion from these data, a little more needs to be clarified. While the impossibility of a non-coreferent reading is probably expected in non-alternating structures such as *try*-class complements (24), it is unexpected for alternating nonfinite clauses such as purposive/temporal adjunct clauses (25), *want*-class complements (26), and gerundivals (27): if a (trivially) non-coreferent overt DP can show up in nonfinite subject position, then why not non-coreferent *pro*? This is especially puzzling given that Tamil is a null-subject language with exhibits rampant *pro*-drop in matrix and crucially also embedded subject position:

(28) *pro* sadatt-ai saappi-ṭṭ-aan
pro rice-ACC eat-PST-M.3SG
'*pro*$_i$ ate rice.' (i → singular male discourse antecedent)

(29) raman$_i$ [$_{CP}$ *pro*$_j$ sadatt-ai saappi-ṭṭ-aan]-nnu so-nn-aan
Raman$_i$ *pro* rice-ACC eat-PST-M.3SG-COMP say-PST-M.3SG
'Raman$_i$ said that [$_{CP}$ *pro*$_{i/j}$ ate rice].' (j → singular male discourse antecedent)

While *pro*-drop is possible in the embedded finite subject position in (29), however, yielding both (accidental) coreference and disjoint readings, it seems to be impossible for the subject of a nonfinite clause. The related Dravidian language, Malayalam shows the same distinction.[13] While we are not entirely sure of the explanation for this, we believe that it might have something to do with the lack of tense and agreement in nonfinite clauses in Tamil[14] which hinders recovery of information if the subject is dropped (along the lines of standard analyses of Rizzi, 1986, and others).

All that matters for the point made here, however, is that a reading with disjoint reference between embedded and matrix subjects is impossible in the nonfinite structures (25-27)

[13]Rosmin Mathew (p.c.)

[14]Malayalam has no verbal agreement marking but it does have tense marking which also serves to distinguish finite and nonfinite clauses.

above. Under an assumption that the silent embedded subject is *pro* (which is standardly treated as a null pronoun), these facts could not be easily explained; this strongly suggests that the silent element is rather controlled PRO.

3.5.3 Disambiguating argument identity and position

Tamil exhibits pervasive scrambling, thus surface order cannot always be taken to be representative of underlying structure. This fact combined with that of finite subject *pro*-drop can lead to ambiguity both with regards to the position and the identity of arguments. The adjunct nonfinite sentence, repeated from (25) above, is thus ambiguous between two readings shown below:

(30) **Nonfinite purposive clausal adjunct:**
raman pariccai-ai erud-a school-ukku poo-n-aan
raman.NOM exam-ACC write-INF school-DAT go-PST-M.3SG
Purposive/temporal reading 1: 'Raman went to school in order to write the exam.'/'Raman went to school as he wrote the exam.'
Purposive/temporal reading 2: '(Some guy) went to school (in order) for Raman to write the exam (purposive).'/'(Some guy) went to school as Raman wrote the exam.'

This interpretive ambiguity becomes especially obvious when we introduce an adverbial focus-operator *maṯṯum* ('only'/'alone') modifying the overt subject to (30) as shown below:

(31) raman **maṯṯum** pariccai-ai erud-a school-ukku poo-n-aan
Reading 1 ("High reading"): 'Raman alone went to school to write the exam'/'Raman$_i$ alone went to school as he$_i$ wrote the exam.'
Reading 2 ("Low reading"): '(Some guy) went to school (in order) for Raman alone to write the exam'/'(Some guy) went to school as Raman alone wrote the exam.'

Szabolcsi (2009) and Barbosa (2009) use very similar diagnostics to argue for a structural ambiguity in such constructions in flexible word-order and subject-drop languages like Italian and European Portuguese. Following their analyses, we propose that the above readings correspond to the following different structures:

(32) **Structure 1 ("High reading"): matrix overt subject, embedded controlled PRO:**
[$_{CP}$ raman$_i$ maṯṯum [$_{CP}$ PRO$_i$ pariccai-ai erud-a] school-ukku poonaan]

(33) **Structure 2 ("Low reading"): matrix *pro*, embedded overt subject:**
[$_{CP}$ *pro*$_i$ [$_{CP}$ raman$_{j/*i}$ maṯṯum pariccai-ai erud-a] school-ukku poonaan]

It is not so important for our current purposes that the matrix subject *pro*-drop structure corresponding to the "low reading" always be attested. What is important is that an obligatory control structure with embedded controlled PRO should always be possible in these structures – and it is. We thus conclude that the embedded clause-types discussed in this section do indeed contain controlled PRO as indicated.

4 Evidence from other South Asian languages

Other South Asian languages show similar properties with respect to DP distribution as Tamil. Here, we present data taken from Malayalam (Mohanan, 1982) and Sinhala (Gair, 2005) and show that these are also similarly problematic for standard theories of Case.

4.1 Malayalam alternating complement infinitives

Malayalam also shows free variation between overt subjects and subject-controlled PRO in the nonfinite complements of certain verbs like *aagɽahiccu* 'want', as discussed by Mohanan (1982). Consider the examples in (34):

(34) a. amma [PRO$_{i/*j}$ wisaːkk-aan] aagɽahiccu
mother.NOM PRO$_{i/*j}$ be.hungry-INF wanted
'Mother wanted to be hungry.'

b. amma [kuʈʈi-kkə wisaːkk-aan] aagɽahiccu
mother.NOM child-DAT be.hungry-INF wanted
'Mother wanted the child to be hungry.'

These Malayalam data, while similar enough to the English examples above, show one significant difference, namely that the embedded overt subject in (34b) is marked with a 'quirky' dative while the matrix subject is marked nominative. This is the dative normally assigned by the verb root *wisaː*- 'be hungry' to its subject, as can be seen from the following example:

(35) kuʈʈi-kkə wisaɳɳu
child-DAT was.hungry
'The child was hungry'.

This strongly suggests that the case on the embedded subjects in such clauses doesn't come from the matrix clause, but is established internal to the infinitive.

However, this in itself doesn't necessarily pose a problem for Case theory, as the presence of a dative subject does not entirely rule out an ECM-type analysis. One could still propose, along the lines of what has often been claimed for Icelandic quirky subjects (see e.g., Sigurðsson, 1992, for discussion of the 'double-case' approach) that *kuʈʈi.kkə* first gets quirky dative case in the embedded clause, which determines its morphological form. On top of this, it then gets structural accusative Case by ECM, which is what licenses it to be overt, but this case does not surface in the morphology because the dative takes precedence. But this would predict that, if we have a *want*-class verb with an embedded infinitive and an overt subject but no quirky dative-assigning embedded verb, then the structural accusative should surface on the embedded subject. However, this prediction is not borne out, as the data in (36) show:[15]

[15]The verb *ʈaɻar* in Malayalam shows up with a default nominative subject, as the following example shows:

(1) kuʈʈi ʈaɻarɳɳu
child.NOM tired
'The child was tired.'

(36) amma [kuʈʈi ʈaɭaɽaan] aagɽahiccu
mother.NOM child.NOM be.tired.INF wanted
'Mother wanted the child to be tired.'

What we get on the embedded subject in (36) is nominative. This is strong evidence against the idea that it should be licensed by ECM from the matrix verb.

Now we have a problem for Case theory, because it is not clear where else the licensing for these overt subjects could be coming from. On top of this, note that here again we have the alternation between PRO and overt DPs within a single environment. On the basis of such data, Mohanan (1982) came to the conclusion which we have also come to, namely that the Case-theoretic treatment of PRO could not handle the facts of Malayalam.[16]

4.2 Nonfinite clauses in Sinhala

Gair (2005) presents data on overt and non-overt subjects in a wide array of clause-types, both finite and nonfinite, in Sinhala. These too are problematic for Case theory, because overt DPs show up in positions where they would not be expected to receive abstract Case. Also, as Gair himself points out, the subject-taking abilities of different clause-types seem to correlate more with the properties of the embedding environment than with the finiteness of the clauses themselves.

We'll concentrate here on clauses with the verb form that Gair calls the infinitive, which bears no marking for tense.[17] When the infinitive occurs in the complement of certain verbs like *kəməti* 'like', we get obligatory control, i.e. overt subjects are ruled out, and there is obligatory coreference between the understood subject of the infinitive and the matrix subject:

(37) Gunəpaalə$_i$ [*taman/*eyaa(mə)/$\emptyset_{i/*j}$ həmədaamə yannə] kəməti.
Gunapala.NOM$_i$ *self/*he/$\emptyset_{i/*j}$ every.day go.INF like.ASSM
'Gunapala likes to go there every day.'

This on its own looks like the sort of behavior we find in the complements of verbs like *try* in English. It seems that nonfinite T in the embedded clause does not assign nominative case, and the matrix verb does not license accusative by ECM, so an overt subject is not allowed, so all is as predicted by Case theory.

Other classes of infinitives in Sinhala cast some doubt on this, however. For example, infinitives also appear in clauses introduced by elements like *issella* 'before'. As the examples in (38) show, overt subjects are possible in such clauses:

(38) a. [mamə ennə issella] miniha kaarekə wikka
I.NOM come.INF before man.NOM car sell.PST
'The fellow sold the car before I came.'

[16]See also Jayaseelan (1984, 1985) for additional discussion of several types of non-finite clause in Malayalam, including some adjuncts which show alternating PRO and overt DP subjects, similar to those in Tamil.

[17]It also bears no agreement marking, but this is true of all verb forms in spoken Sinhala, thus does not really show much. As Gair (2005) discusses in detail, it is difficult to decide which Sinhala forms should count as finite and which should not, and it is questionable whether the distinction is a useful one for the analysis of the language. In any case, the 'infinitive' which we discuss here comes pretty close to a prototypical nonfinite form, lacking tense specification and mostly being restricted to embedded environments, including those with obligatory control.

b. [maʈə teerennə issella] ləkcərekə iwərə unaa
I.DAT understand.INF before lecture finish become.PST
'The lecture ended before I understood (it).'

In a Case-theoretic approach, one might be tempted to see these as parallel to English *for-to* infinitives, with *issella* as a prepositional complementizer which assigns Case to the embedded subject. However, the morphology suggests that this is not the case. In (38a), the embedded subject is not marked with an oblique case – which is what one would expect on the complement of a preposition – but with the nominative associated with subjects of finite clauses. In (38b), the embedded subject is marked dative, as is usual for subjects of *teerenəwa* 'understand'. In other words, the case on the embedded subject is fully determined internal to the infinitive clause and is independent of both the matrix clause and the embedded P or C element *issella*.

Sinhala also has a construction similar to what we saw with Tamil *veɳɖ-* 'want'. Infinitival clauses can be embedded under the verb *oonə* 'want', and can either have a covert subject coreferent with the matrix subject as in (39a), or an overt non-coreferent subject as in (39b):

(39) a. maʈə$_i$ [∅$_i$ heʈə koləmbə yannə] oonə
I.DAT ∅$_i$ tomorrow Colombo go.INF want
'I want to go to Colombo tomorrow.'
b. ammaʈə [laməya wibaage paas-wennə] oonə
mother.DAT child.NOM examination pass.INF want
'Mother wants the child to pass the examination.'
c. guruwərəyaʈə [laməyaʈə paaɖəmə teerennə] oonə
teacher.DAT child.DAT lesson understand-INF want
'The teacher wants the child to understand the lesson.'

Again, the subject of the embedded clause is in the nominative here. We might suppose that this comes from the finite matrix T, as the matrix subject is dative and thus does not use up the matrix nominative. In (39c), however, we again find the subject of an infinitive clearly getting dative case from the embedded verb. It thus again seems that the case needs of the nonfinite subject are handled internal to the infinitival clause. This raises the possibility that the nominative in (39b), like that in (38a) above, is actually supplied within the infinitive as well, as Gair (2005) in fact concludes.

Finally, like Tamil, Sinhala allows infinitivals as purpose adjuncts, again at least optionally with overt subjects, as in (40):

(40) kaaʈəhari kaapu gamaŋ, [**kaurawat** nohoyanɖə] sarpəyə
someone bite.PST.REL when anyone.NOM NEG.find.INF serpent.NOM.PL
koheehari həngenəwa, nee?
somewhere hide.PRES, no?
'When serpents have bitten someone, they hide so that no one can find them, don't they?'

The subject of the embedded infinitive, *kaurawat* 'anyone' is again in the nominative case. This cannot be coming from the matrix finite clause for two reasons. First, since the infinitive is an adjunct, it is not in the right structural configuration for ECM-like assignment of a matrix case to its subject position. Second, the nominative of matrix T is already assigned

to the matrix subject *sarpəyə* 'serpents'. There is also no hint of a prepositional complementizer heading the embedded clause like English *for* or even the *issella* we saw in (38) above. It is thus a mystery under standard Case theory how an overt subject should be licensed in examples like this, just as it was with the parallel Tamil adjunct infinitives. Note that, however licensing works, the source of the nominative morphological case on *kaurawat* 'anyone' must be internal to the infinitival clause, again since the structural configuration is not right for something to come from the matrix clause. This supports the suspicion noted above that the embedded nominative case in (39b) is supplied internal to the embedded clause, further undercutting support for an ECM-like analysis of complements of *oonə* 'want'.

The conclusion that Gair (2005) draws from these Sinhala data is very similar to what we have said for Tamil. He points out that the occurrence of non-overt subjects in infinitives embedded under *kəməti* cannot be attributed to the nonfinite verbal inflection, precisely because other infinitives do allow overt subjects. Instead, he argues, whether we get overt or non-overt subjects in an infinitive depends on the matrix clause and the relationship between it and the embedded clause. This is the line we ourselves will pursue in Section 7 where we formalize a syntax and semantics for DP distribution in terms of selectional properties of the matrix predicate.

5 Problematic data from non-South-Asian languages

Problematic data for standard Case theory are of course not only found in South Asian languages. In this section, we describe the AcI construction attested in a number of languages, Middle English infinitive clauses which cast doubt on Case-theoretic analyses of the *for-to* construction in Present-Day English and, finally, a problematic structure in Present-Day English itself, namely the gerundival. These data show that DP distribution presents challenges for Case-theoretic analyses quite generally across languages.[18]

5.1 AcI constructions in Irish and Latin

A number of languages including Latin, Ancient Greek and Modern Irish have a type of nonfinite construction usually called AcI or accusative-with-infinitive. They involve an overt subject DP in the accusative case, which makes them superficially look like English ECM infinitives. However, they have a radically different distribution from the relevant English clauses, which are restricted to the complement of verbs like *believe*. AcI clauses instead appear in a wide range of syntactic environments: as clausal subjects, as arguments of matrix nouns and adjectives, as adjuncts and sometimes even in special root contexts. We give as examples here from Irish a subject clause in (41a) and a clausal argument of a noun in (41b) (from McCloskey, 1985), and from Latin a clausal argument of an adjective in (42a) and a root infinitive in (42b) (from Gildersleeve, 1895).[19]

(41) **Modern Irish**

a. Ghoillfeadh se orm [**tu** me a ionsai].
would.bother it on.me you.ACC me INF attack
'It would bother me for you to attack me.'

[18]The reader is also referred to Szabolcsi (2009) for an extensive discussion and case-studies of nominative-marked subjects in nonfinite control and raising constructions cross-linguistically.

[19]See also vanden Wyngaerd (1994) for examples from Ancient Greek and further discussion.

b. Níl iontas [é mac mí-nádúrtha a thógáil].
is-not wonder him.ACC son un-natural INF raise
'It is no wonder that he should raise an unnatural son.'

(42) **Latin**

a. Est inūsitāt-um [**rēg-em** re-um capit-is esse].
is extraordinary-N.sg king-ACC answerable-ACC head-GEN be.inf
'It is an extraordinary thing for a king to be tried for his life. (C., Dei., 1. 1)

b. **Homin-em**-ne Rōmānum tam Graecē loqu-ī?
man-ACC-Q Roman-ACC.M.sg such Greek-ABL speak-INF
'A Roman speak such good Greek? (To think that a Roman should speak such good Greek!)' (PLIN., *Ep.*, IV. 3, 5)

Clearly, in the examples above and most of the contexts where AcI infinitives show up, there is no c-commanding transitive verb. So ECM is simply ruled out as a possible source of licensing for the overt subject, morphological accusative aside.[20] There is also no evidence for anything like English *for*. Thus, as in the Tamil adjunct infinitive examples, it is not clear how the overt subjects could be Case-licensed. Note furthermore that in both languages, PRO is found in infinitival clauses in these positions as well, so here again we find the PRO/overt subject alternation.

5.2 Middle English infinitives

Similarly problematic data for Case theory have been reported by McFadden (2008) for Middle English. E.g., throughout the Middle English period, the vast majority of *for-to* infinitives don't have an overt subject:

(43) a. I ne come not in-til erþe [**for to** do mi wille]
'I didn't come to the earth to do my will.' (BENRUL,10.333)

b. ...and wente wythout the wal [**for to** walke]
'...and went outside the wall in order to walk.' (REYNAR,11.179)

The few that do place the subject **before** *for*, not between it and *to*:

(44) For it es a velany, [**a man for to** be curyously arrayed apon his heuede with perré and precyous stanes]
'For it is a disgrace for a man to be strangely adorned on his head with jewels and precious stones.' (ROLLTR,29.609, from Pak, 2006)

So we don't see the familiar correlation between overt subjects and *for* in infinitive clauses that is familiar from Present-Day English. This casts some suspicion on a Case-based analysis of Present-Day English *for-to* infinitives, since *for* does not seem to be playing a role in licensing overt subjects.[21] Furthermore, this constitutes another instance of the PRO/overt subject alternation.

The really interesting data from Middle English, however, are the infinitives which are not complements of transitive verbs, have no *for*, and yet still have an overt subject (see

[20] See Pillinger (1980); Cann (1983) for additional arguments against a general ECM analysis of Latin AcI.

[21] Henry (1992) proposes a Case-theoretic account of similar facts in Belfast English. However, in that dialect, overt subjects can come before *for* only in the complements of *want*-class verbs, when the embedded subject is adjacent to the matrix verb. Otherwise *for* comes before the subject. This is what makes the ECM analysis that Henry proposes for SUBJ-*for-to* examples plausible. Such an analysis won't work for a language like ME, where this order is also found in sentences like (44) in which the infinitival clause is not the complement of the matrix verb, and where the order *for*-SUBJ-*to* is simply not found.

Fischer, 1988; Garrett, in press; Pak, 2006; McFadden, 2008, for discussion). Much like the AcI infinitives just discussed, they occur as surface clausal subjects, extraposed subjects of predicate adjectives and nouns, as well as adjuncts:[22]

(45) 'That were shame unto the,' seyde sir Launcelot, '[**thou** an armed knyght to sle a nakyd man by treson].'
"'That would be a disgrace on you," said sir Lancelot, "for you.NOM, an armed knight, to slay a naked man by treason".' (MALORY,206.3373)

As (45) shows, the subject of the infinitive is often in the nominative form when it is a pronoun. Other examples have non-nominative forms:[23]

(46) ȝiff itt like to thy most gracious lordshipp [**me** to do þis message]
'If it would please your most gracious lordship for me.OBL to do this message...' (ROYAL,258.322)

Again, it is unclear how the overt subjects are licensed in these clauses. The parallel Present-Day English examples have an overt *for* and are assumed to be grammatical precisely because *for* is there to handle Case.

5.3 Gerundival clauses in Present-Day English

Tamil gerundivals are not the only ones that are problematic for Case theory. Present-Day English gerundival clauses appear in various positions with no c-commanding transitive verb, have nothing like overt *for*, and no tense or agreement marking. Yet they also allow overt subjects, with no apparent source for Case, and they show the alternation with PRO that we have seen in several clause types:

(47) [Barry/$\text{PRO}_{i/*j}$ having no hot sauce], we_i went to the store. [adjunct]

These are problematic for the same reason that the Tamil ones are. It is not obvious how the overt subjects could be getting Case, and if we come up with a reason why Case should be available here, we lose our explanation for the versions with PRO. Although a Case theoretic analysis of *either* the structure with PRO or that with the overt subject might be possible, a unified analysis of both types of structures is not viable.[24]

5.4 Quick excursus: finite control and case-marked PRO

Even though this is not the main focus of this paper, we would like to point out for the sake of exhaustiveness that the converse scenario of obligatorily controlled PRO in finite clauses

[22]Clauses of this kind are mostly restricted to the second half of the ME period, roughly 1350-1500, after which they are replaced by the modern *for-to* infinitive. During this period they are, however, found often enough in the texts that we can be sure they are not errors. See Fischer (1988) for a large collection of examples, and McFadden (2008) for corpus-based statistical evidence that this kind of infinitive occurs at a very similar frequency in two of Chaucer's *Canterbury Tales* as the *for-to* infinitive occurs in Early Modern English.

[23]Fischer (1988) suggests that the non-nominative forms are older here, with the nominative an innovation. In any case the non-nominatives here cannot be construed as evidence for an ECM analysis of such clauses, since here as well c-commanding transitive verbs are lacking.

[24]See Pires (2007) for recent discussion of the properties of gerundival clauses and the problems they pose for standard Case theory.

is also crosslinguistically attested. This is just as problematic for standard Case theories as overt subjects in nonfinite clauses are – since Case theory postulates a strictly one-one mapping relationship between controlled PRO and the null Case or lack of Case assigned by nonfinite T. This in turn entails that OC PRO only occurs in [Spec, TP_{-fin}].

Landau (2004) and Darzi (2008) present examples of finite control in Hebrew and Persian, respectively. Here, we reproduce the Persian examples from Darzi (2008) below (formatting ours):

(48) FINITE OC PRO WITH OVERT COMPLEMENTIZER
Žian mi.tun.e (ke) be.r.e
Jian DUR.be.able.3.SG (that) SUBJ.go.3SG
'Jian can/is able to go.'

Darzi (2008) presents convincing evidence that the null subject in (48) is indeed controlled PRO and not little *pro* and also shows that the embedded clause is not a restructuring infinitive (Wurmbrand, 2001) but a full-fledged finite CP. The grammatical appearance of obligatory-controlled PRO in a finite clause as in (48) above is thus entirely unexpected given the null Case Minimalist hypothesis and also argues strongly that subject distribution should be divorced from Case-licensing and, in turn, from clausal finiteness.

Additionally, the Icelandic floating-quantifier structure in (49) below (due to Sigurðsson (1991)), shows convincingly that OC PRO can bear case, gender, and number features even in its canonical nonfinite subject position – which, again, is a serious blow to licensing accounts of OC PRO in terms of Case:

(49) OC PRO WITH CASE, NUMBER, AND GENDER: ICELANDIC
Strákana langaði til [$_{CP}$ PRO að komast allir í veisluna]
boys-the.ACC wanted for PRO to get all.M.PL.NOM to party.the
'The boys$_i$ wanted [$_{CP}$ PRO$_i$ to all get to the party].'

5.5 Interim summary

To summarize, then, the apparent free variation between overt subject and obligatory subject-controlled PRO in various embedded clause types in several languages is seriously problematic for standard Case theory. Any proposal that might account for one type of alternant (PRO or the overt DP) appears incompatible with the other alternant, so that a unified analysis of both variants taken together seems unfeasible. Furthermore, in many of the relevant clause-types, the fact that overt subjects are possible at all challenges basic assumptions about what can license such DPs. It is also difficult to explain, within a Case-theoretic analysis, the differing behavior of adjunct nonfinite clauses and complement nonfinite clauses in Tamil, namely why it is that complement infinitives come in both obligatory control and alternating varieties, while all adjunct clauses are alternating.

6 Can Case theory be salvaged?

Before turning to an alternative account for the data above, it is perhaps both prudent and logical to exhaust the possibilities for explaining them within the assumptions of standard Case theory. In this spirit, we consider three options that might make sense within Case

theory but show that each of these options is untenable. Along the way, we give critical discussion of a previous attempt by Sarma (1999) to account for some of the Tamil data in Case theory.

6.1 Option 1: Case licensing from the matrix clause

The first idea is that licensing for (some) overt nonfinite subjects comes not form the matrix verb, but from matrix T. Sarma (1999) proposes such an analysis for *want*-class complements with quirky-dative matrix subjects, like the following:

(50) **Alternating nonfinite complement with PRO/overt subject:**
Champa-vukku$_i$ [PRO$_i$/Sudha oru samosa-vai saappiḍ-a] veṇḍ-um
Champa-DAT PRO/Sudha a samosa-ACC eat-INF want-N.3SG
'Champa wants to eat a samosa'/'Champa wants Sudha to eat a samosa.'

The idea is that, since the matrix subject gets dative, matrix T still has a nominative Case left over, which it can assign into the embedded clause, licensing the overt subject there.

But this proposal has the following problems. First, it's only viable for infinitives in the complement of verbs with a dative subject; if the matrix subject were nominative, it (and not the embedded subject) would be assigned nominative Case by matrix T. Second, while this idea works nicely for each alternant individually, it fails to consistently explain the data when taken together: i.e. why *both* PRO and overt DPs are possible in (apparent) free variation. Thus, short of motivating distinct structures for the complements with overt subjects and those with PRO, a consistent Case-based analysis along these lines is unviable.

6.2 Option 2: special licensing due to a null P

A second proposal would be that it is the presence of a null P head in the nonfinite clause – a null version of English *for* – that licenses Case on the overt subject. Such a proposal has been put forward by Bošković (1997) and Martin (2001) for English *want*-class complements, for instance. However, such a proposal also has serious flaws. The main problem is that there is no independent evidence for such a P head (overt or covert) in the constructions we have discussed; in fact, as we have noted, the nominative case-marking on the nonfinite subjects strongly argues against such an idea, since Ps typically and in these languages do not assign nominative Case. And finally, the free variation between PRO and the overt DP finds no insightful explanation within this approach either, and a potential way out – positing the presence of an optional null P – is both inelegant and stipulative.

6.3 Option 3: Case-licensing by nonfinite T

The third possibility would be that the nonfinite T in nonfinite complement and adjunct clauses with overt subjects itself possesses exceptional Case licensing properties. Sarma (1999) tentatively suggests that something along these lines might be the explanation for the alternating purposive/temporal nonfinite adjuncts in Tamil discussed in this paper, repeated again below:

(51) [PRO/Sriram saadatt-ai saappiḍ-a], naan veḷiya poo-n-een
PRO/Sriram rice-ACC eat-INF, I.NOM outside go-PST-1SG

'I went out to eat rice.'/ 'I went out for Sriram to eat rice.' PURPOSIVE INTERPRETATION
As I ate rice, I went out/As he ate rice, I went out.' TEMPORAL INTERPRETATION

This approach would certainly account for the presence of overt DP within nonfinite clauses, but is problematic for the following reasons. First, it is essentially a stipulation with no independent evidence. Second, an exceptional Case-licensing nonfinite T would, like in the other approaches, not be able to account for the alternation with subject-controlled PRO in the same positions. Finally, this approach raises more theoretical problems than it seems to solve: if both nonfinite and finite Ts can license overt DPs, how do we predict when we get PRO vs. overt DPs in a Case-theoretic approach? The possibility of distinguishing PRO vs. overt DPs in terms of differing licensing conditions due to the finiteness of T – one of the fundamental claims of Case theory – is lost.

For the discussion above, we conclude that an account for subject DP distribution in terms of licensing due to Case is unfeasible and propose below an alternative analysis based on selection rather than licensing of subjects.

7 Analysis

In this section we will present an alternative analysis of DP distribution which can handle the data from Tamil and other languages which are problematic for Case theory. We will first describe and motivate the basic idea, which is based on the selectional needs of lexical and functional heads rather than on the licensing needs of the DPs themselves. Then we will lay out one possible formal implementation of the idea within the Minimalist framework in terms of Agree and the $[\pm R]$ feature introduced by Reinhart and Reuland (1993) and later in Landau (2004)[25] and finally we will demonstrate it with sample structures for the most important clause types.

7.1 Introducing the selection alternative

Recall that the idea behind Case theory is that DPs are inherently defective and require external licensing. Under this view, (overt) DPs are ruled out by default, and what must be explained are the places where they are licit. The approach we would like to pursue is essentially the opposite of this. We propose that DPs have no special needs, but simply have to be integrated into the structure and interpretation like any other syntactic elements. Thus they can show up anywhere this is possible – as long as independently motivated principles of grammar are satisfied. Under this view, DPs are fine by default in all A-positions, and what we must explain are the places where they are illicit.

The facts about overt DP distribution that have been handled in terms of Case thus need a different kind of explanation. Following Marantz (1991) and others, it is now standardly assumed that one set of these facts – having to do with required movement operations to derived subject positions in passives, unaccusatives, raising and other contexts – should be handled in terms of the EPP or something similar (see e.g., Chomsky, 2001). The other main set of facts has to do with what we have been concerned with here – the choice between overt DPs and PRO. What we would like to propose is that instances where overt DPs are

[25] However, it will become clear from the discussion in the rest of the paper that we deviate in significant points from both these proposals in our conception and formal implementation of this feature.

impossible – as well as those where they are required – should be explained in terms of selection by c-commanding functional and lexical heads.

The basic idea is that, by default, both overt DPs and PRO are licit in all A-positions (as long as the EPP is satisfied), and are in fact in alternation with each other. This is of course precisely the situation of alternation that we find in a number of the clause-types we have discussed here, including the Tamil alternating complement infinitives, adjunct infinitives and tensed gerundivals, Latin and Irish AcI infinitives, English gerundivals, and ME adjunct infinitivals. In such clauses, the choice of DP type is determined by the intended interpretation. That is, if coreference with a matrix argument in the syntax is intended, then controlled PRO appears.[26] If not, then an overt DP/little *pro* is used. In contexts where overt DPs are impossible, this is because something is explicitly selecting PRO. This is what we get e.g. in the complements of *paar-* in Tamil, of *try* in English and of *kəməti* in Sinhala. The ungrammaticality of overt subjects here has nothing to do with a lack of licensing for them – they need no licensing. The problem is rather that the selectional requirements imposed in the clause are not satisfied, causing the derivation to crash. In contexts where PRO is typically impossible, this is because something is explicitly selecting an overt DP/*pro* (we'll discuss below how to unify these). We see this in all of the languages discussed in prototypical main finite clauses. Again, the problem with PRO is not that it itself is not licensed, but that it does not satisfy the selectional requirements of the relevant local functional head.

A good way to understand the difference between the licensing-based approach of Case theory and our selection-based approach is in terms of the probes and goals of Minimalist Agree relations. Under both approaches, the distribution of DPs in particular syntactic positions is regulated by relationships between those DPs – the goals – and the verbs and functional heads that c-command them – the probes. In Case theory, it is the needs of the goal – relating to the Case features on the DP – which must be met for a particular configuration to be allowed. In our selection-based theory, on the other hand, it is the needs of potential probes – relating to the selectional features on verbs and functional heads – which must be satisfied.

7.2 On finiteness and dependency

Implicit within our analysis is a rather different take on finiteness and its relation to subject positions than that embedded within Case theory. Cross-linguistically there is a clear tendency for prototypical finite clauses to have overt subjects and for prototypical infinitives to have PRO subjects. We of course do not intend to deny this tendency, but we do take issue with the rather simplistic way that it has been understood in theoretical terms. Standard Case theory relies on the idea that the finiteness of a clause, or more accurately of T/Infl, determines and explains the choice between overt DPs and PRO. It is not just that overt subjects and finiteness go together, but that finiteness is what licenses overt subjects. This presupposes and relies on a basic binary distinction between finite and non-finite. More fine-grained distinctions between clause types may be made for other purposes,[27] but in terms

[26] We leave aside arbitrary PRO for the time being, which has not appeared in the data we've examined in this paper. We believe that it can be unified satisfactorily with obligatory control PRO, but the discussion would take us too far afield.

[27] E.g. the complements of verbs like *believe* are usually assumed to be smaller than the complements of verbs like *try*. As a consequence, the former are transparent for Case coming from outside (i.e. ECM) and for A-movement (i.e. subject-to-subject raising) while the latter are not. Nonetheless, both types of clause count as non-finite in the sense that T itself does not assign nominative Case and license an overt subject.

relevant for Case assignment by T/Infl, there are only these two possibilities.

We reject this understanding of the connection between finiteness and DP distribution. First, we question whether a merely binary notion of finiteness can be defended and maintained cross-linguistically.[28] There are rather several distinct ingredients which go into what is traditionally thought of as finiteness, including at least agreement, tense marking, temporal interpretation, referential dependence and modality. These can combine in different ways in different languages and in different constructions within a single language. In principle, several different binary distinctions could be drawn, but it is not clear which distinction should be privileged for purposes of DP distribution, especially if we strive for cross-linguistic consistency (see Adger, 2007, and the other papers in Nikolaeva, 2007 for discussion). In fact, the evidence we've presented in this article shows that, for the purposes of subject distribution, at least three types of embedded clause must be distinguished: those which require PRO, those which require overt subjects, and those which allow either. This undermines the claim that finiteness is responsible for licensing certain types of DP. The existence of the alternating type of clause suggests that the non-alternating types actually involve restrictions on the generally available possibilities for the subject position, not the creation (i.e. licensing) of possibilities.

[28]See Landau (2004) for some related discussion and arguments that finiteness, at least as is relevant for the distribution of PRO, needs to be broken down into more basic components. Also see Gair (2005) for arguments that a simple notion of finiteness is not particularly useful for an understanding of the properties of embedded clauses in Sinhala, including the data we discussed in Section 4.2 above.

Thus in what follows, we will speak in terms of a notion of clausal dependency rather than finiteness.[29] This is intended to make clear the distinction between our position and that of standard Case theory, and we think it more accurately reflects the facts. What is meant here is not a single distinction of dependent versus independent, but a range of possibilities determined by the interaction of multiple factors. Dependency in our sense is meant to encode the extent to which (at least) the temporal and nominal referents of an embedded clause are defined in terms of or in relation to those of the clause in which it is embedded. It is of course clear that clausal embedding can set up relationships between elements of the matrix and embedded clauses on both nominal and temporal levels. E.g. the reference of pronouns (including PRO) in an embedded clause is determined in part on the basis of the reference of nominals in the matrix. And the temporal reference of an embedded clause is systematically determined relative to that of the matrix. Furthermore, it is reasonable to think that these two different types of dependencies are related and treated in parallel fashion by the grammar. Consider in this connection the tradition of semantic work documenting the parallels between pronouns and tenses, which are based in large part on the similar dependency effects that they display in embedded clauses (see Partee, 1973; Kratzer, 1998).

From this perspective, obligatory control PRO (as well as other anaphoric DPs such as reflexives and bound variable pronouns) just represent the maximum degree of dependence on the matrix clause in the area of nominal reference. In temporal reference this would correspond to embedded clauses with anaphoric tense which cannot refer to a time distinct from that of the matrix, as in (52), where the matrix and embedded clauses have incompatible temporal adverbs:

(52) * **Yesterday** Andrew tried *Aloisius/to work **tomorrow**.

Similarly, protoypical finite root clauses in out-of-the-blue contexts represent the maximum degree of independence. In the area of nominal reference, an overt subject (or little *pro*) is required whose reference can be established solely on the basis of the discourse, independent of anything in the syntactic context. In the area of temporal reference, the tense information necessary to compute the reference time from the speech time must be specified in such clauses, as there is no matrix time specification to work from.[30]

How many degrees of dependency need to be distinguished is an open question. [31] As noted above, for the purposes of DP distribution, it is clear that at least three are required, and we will thus speak here in terms of a three-way distinction. Clauses which require overt DP subjects we will call **independent**, those which require PRO we will call **anaphoric**, and those which allow the alternation we will call **dependent**.[32] In syntactic terms, independent

[29]Again, see Landau (2004) for much related discussion and conclusions that are quite similar to those we draw here. Landau proposes a rather explicit formal calculus for determining whether an embedded clause will have PRO or an overt subject, which is independent of Case. Important differences from our analysis are that Landau's system posits an important role for agreement and provides no obvious way to deal with clauses showing the PRO/overt DP alternation.

[30]Whether the nominal-temporal parallelism holds in the general case, in particular at the intermediate points on the scales, is an important question that can shed light on how exactly the dependencies are related. However, it is far less clear, and we will not take a position on it here.

[31]It should, however, be a finite number. The dependencies under discussion here are syntactic and must be implemented in terms of discrete features and structures, so we should not be dealing with a true continuum or cline.

[32]Compare Landau (2004)'s similar use of anaphoric and dependent tense.

clauses will contain a functional head which selects for overt DPs, anaphoric clauses will contain a head which selects for PRO, and dependent clauses will contain a head that selects for neither. A more nuanced typology will probably be needed for other purposes (and perhaps even for DP distribution when more data are taken into account), but we will stick to the bare minimum as far as it will take us.[33] Crucially, the two degrees distinguished in traditional Case theory are not sufficient.

Note then that our notion of dependency is defined in essentially semantic terms relating to temporal and nominal reference. We expect that it will be related to the morphological properties of a particular embedded clause, but only indirectly. This is another clear distinction from standard finiteness, which is commonly defined at least in part in terms of morphological tense and agreement marking. For us, what really matters is not the presence or absence of overt tense marking, but the relative dependency of the embedded temporal reference. The embedded clause in (53) below has some degree of temporal independence, unlike that in (52) above, yet morphologically they are both "infinitives", lacking any tense morphology.

(53) **Yesterday** Andrew$_i$ wanted Aloisius/PRO$_i$ to work **tomorrow**.

Similarly, we care about what referential types of embedded subjects are allowed, not so much about the availability of agreement morphology. Here again, the contrast between (52) and (53) shows that lack of agreement can be found in both anaphoric and dependent clauses.

We also find the dissociation in the opposite direction – finite morphological marking in dependent situations. The "finite" control phenomena discussed in Section 5.4 are examples of nominal reference being highly dependent even though there is morphological agreement. And the well known sequence of tense effect found in many languages represents an instance where temporal interpretation and morphological tense marking go their separate ways.

What regulates the distribution of the various types of clauses in the syntax, then? That is, how is the dependency between matrix and embedded clause actually computed? We propose that this is a function of the type of embedding. This includes the distinction between adjunction and complementation (and probably conjunction), and also crucially the relationship between matrix predicate and embedded clause under complementation. Specific verbs and other predicates differ in what kinds of clausal complements they can select. In English, e.g., *want* takes independent *that*-clauses and dependent *to*-infinitives, *remember* takes independent *that*-clauses, independent gerundivals and anaphoric *to*-infinitives, while *try* takes anaphoric gerundivals and anaphoric *to*-infinitives, and these selectional restrictions must be stated somehow in the grammar. The distribution of subject DP types is then largely a question of what kind of clauses a particular predicate selects. So we always get PRO and not overt DPs in *try*-class complements because verbs like *try* select anaphoric clausal complements, which in turn contain a functional head that selects PRO.

[33]Note that our three-way distinction in clause types maps onto a two-way distinction in DP types: PRO versus overt DPs. One clause type requires PRO, a second type requires overt DPs, and the third allows either. We will argue below that other DP types pattern either with PRO or with overt DPs in terms of their syntactic behavior relative to dependency. However, it will almost certainly turn out to be necessary to make a finer distinction in the degree of dependency of DP types.

7.3 Selectional semantics

Of course, we would ultimately like to clarify **why** it is that English *try* and Tamil *paar* take anaphoric complements, while English *want* and Tamil *veṇḍ* take dependent ones. That is, what independent factors determine the selectional properties of specific heads? Can we derive the selectional restrictions (at least in part) from something deeper, or do they just have to be lexically stipulated? It is reasonable to think that selectional behavior ultimately has a semantic basis – an idea that is reinforced by the observation that predicates meaning roughly 'try' across languages tend to take anaphoric complements, while verbs meaning 'want' tend to be more flexible. To be more precise, the meaning 'try' seems to imply the involvement of its subject in the embedded proposition, whereas 'want' does not. I.e. while 'want' expresses a relation between an individual and a proposition, 'try' expresses a relation between an individual and a property which that individual will saturate.[34] We can think of this in terms of the following rough semantic denotations (Note that we do not claim that these are the actual precise denotations for English *try* and *want*. They are simply intended to show the abstract form that those denontations take with respect to complementation and coreference requirements between matrix and embedded arguments):

(54) a. $[\![try]\!]_{<<e,t>,<e,t>>} = \lambda P_{<e,t>} \lambda x_e.\textsc{try}(x, P(x))$
b. $[\![want]\!]_{<t,<e,t>>} = \lambda Q_t \lambda x_e.\textsc{want}(x, Q)$

The denotations above show that both predicates take two arguments, namely the matrix subject and the embedded clause. Crucially, the denotation for 'try' states furthermore that the highest argument of the embedded clause will be coreferent with the matrix subject. In contrast, the denotation of 'want' places no such restrictions on the arguments of its complement clause.

Extensive arguments in favor of a semantic theory of control are put forward by Culicover and Jackendoff (2006). The approach we outline here shares important intuitions with their proposal, specifically the idea that the selectional behavior of matrix verbs with respect to control has a semantic basis. However, while they argue for a primarily semantic treatment of control phenomena, we implement the crucial selectional relationships syntactically. That is, the semantics of a predicate may help to determine what sorts of structures it can appear in, but it is these syntactic structures that determine the distribution of PRO and overt DPs.[35]

[34] What we are saying here about 'try' is clearly related to the proposal by Chierchia (1989) and others that control infinitives are properties rather than propositions. However Chierchia (1989), argues that control should be treated as a purely semantic phenomenon and proposes that the control complement, despite being semantically a property of type <e,t>, nevertheless has an entailed subject; this entailed subject is one of the arguments of the matrix clause giving obligatory coreference effects between the "antecedent" asserted DP and the embedded entailed one. For us it is crucial, however, that selection be syntactically represented - though the selectional semantics of the predicate as well as binding operations later at LF are also key players.

[35] On standard conceptions of the interaction between syntax and semantics which we accept here, the semantics of a predicate cannot directly determine its selectional (or other syntax) within a derivation. The narrow syntax feeds into the LF branch, not the other way around. The way that we intend for semantic considerations to affect the syntax is more indirect. Roughly speaking, if you have a syntactic structure with a predicate that selects an anaphoric clausal complement, the result will be the kinds of meanings where a matrix argument is necessarily involved in the embedded predicate. On a conceptual level, 'try' has such a meaning whereas 'want' does not. Perhaps a more accurate way to state the tendency is that 'try' is one of the meanings consistent with structures where an anaphoric dependent class is selected. And a predicate that appeared in a different structure would have to mean something slightly different.

7.4 Comparing approaches: DP selection vs. licensing

The key advantage of our approach over more traditional Case-theoretic ones is that it can elegantly handle the alternation between PRO and overt subjects within a single syntactic context. As discussed above, such alternations are seriously problematic for Case theory, which attempts to account for the distribution of overt DPs and PRO in terms of distinct licensing conditions. The logically possible Case-theoretic responses to such alternations are ad hoc at best, and have essentially no predictive power. Because the possibility for an alternation has to be essentially stipulated, such a theory makes no predictions about where alternations should and should not be expected.

On the other hand, a selection-based approach to the choice between PRO and overt DPs predicts the existence of alternations between the two and allows an explanation of where they are and are not found. Because the two types of DPs do not have distinct special licensing needs, we expect that they will be in alternation with one another whenever neither is explicitly selected; this, in fact, is the default scenario. Our empirical investigations reported above have shown that clause-types with alternating subject types are not only attested, but rather common cross-linguistically. Thus the fact that our approach can handle them so much better than Case-theoretic approaches can is a decided advantage. Furthermore, because selection is a syntactic relationship, we can expect it to be subject to standard structural and locality restrictions. So, for instance, matrix verbs will only be able to have an affect on the DP distribution in clauses which are their direct complements. Adjunct clauses and clauses which contain enough structure to place a locality boundary between their subject and the matrix verb thus cannot have a selectional effect on the type of the embedded subject. This is why Tamil has both obligatory control and alternating complement infinitives, depending on the class of the matrix verb, but only alternating adjunct infinitives.[36] In addition, the minimality of selection will also ensure that matrix verbs and clausal functional heads can affect the type of the subject, but not the object. Selection will always see the highest DP, with subjects being interveners for potential selection of object DP types. This is why we have nothing like control of embedded objects by matrix arguments.

Note in comparison that both theories are equally well equipped to accommodate clauses which require only one or the other type of DP. Standard Case theory has to assume a formal distinction on overt DPs and PRO – either the overt DPs bear Case features and PRO doesn't, or PRO only bears a special null Case feature – and a series of formal distinction on c-commanding verbal and functional heads – e.g., transitive and ECM verbs assign structural accusative, finite T assigns structural nominative, nonfinite T assigns no Case or null Case, and ECM and raising verbs like *believe* and *seem* select TP complements, while obligatory control and alternating verbs like *try* and *want* select different flavors of nonfinite CP. We also must assume a comparable amount of formal information on both DPs and the heads in their environment. Overt DPs and *pro* must be distinguished formally from PRO, which, we will argue, can be done in terms of a single binary feature. We must also posit a series of distinctions on c-commanding heads – e.g., we will need similar selectional features on

[36]This of course does not mean that all adjunct clauses should allow alternations. Adjunct clauses can also be anaphoric – e.g. English gerundivals headed by *while* are anaphoric:

(i) Paul watches TV while *Dan/PRO working.

Crucially, though, the matrix verb has nothing to say about the fact that such adjuncts are anaphoric, while gerundivals headed by *with* are dependent.

verbal heads like *believe*, *try* and *want* for different categories of embedded clauses. We will not need to assume Case features on verbs or functional heads, but we will need to posit selectional features on some of them for either PRO or overt DPs/*pro*. Thus in terms of the number and complexity of formal devices needed to account for the standard DP distribution facts, our account fares no worse than Case theory.[37] The fact that it can also handle the less well-known alternation facts discussed here, is then decisive.

7.5 Formal implementation

We have already said that there are degrees of dependency in both the nominal and temporal domains. In the nominal domain, this dependency is for reference: on the one end, we have complete referential independence and on the other, we have complete referential dependence or anaphoricity. This corresponds to "R-expressions", such as proper names, on the one end and anaphors such as controlled PRO and SELF-anaphors (Reinhart and Reuland, 1993) on the other, respectively. In this section we will explore one way in which a theory of DP distribution based on selection for dependency types can be formally implemented. Given the focus of this article, we restrict ourselves to dealing with the semantics of nominal reference.[38] What we describe here is the subject of ongoing research, but it should be sufficient to give an idea of how such a theory can work.

7.5.1 The semantics of nominal reference

To be able to talk intelligently about how referentiality might be formalized, we need to ask ourselves the following question: what makes a DP referentially anaphoric, as in the case of controlled PRO and SELF-anaphors, and what makes it referentially independent, as in the case of proper names? The answer, we believe, lies in the semantics of the DP itself: specifically, following by-now standard analyses of reference and anaphora (in the tradition of Heim and Kratzer, 1998, and many others), we propose that an anaphoric DP has a variable index on the D head. This essentially means that it doesn't denote/point to any particular individual in the real world. In contrast, a (maximally) referentially independent DP such as a proper name (e.g. *Martha*) does not have a variable- but a fixed reference index which denotes a particular individual in the world. Additionally, we believe that both types of DPs inherently contain (interpretable) phi-features. For an anaphoric DP these introduce a presuppositional semantics which constrains the domain of possible antecedents for this DP.[39] Following the analysis of Heim (2008) and others for deictic pronouns, we propose

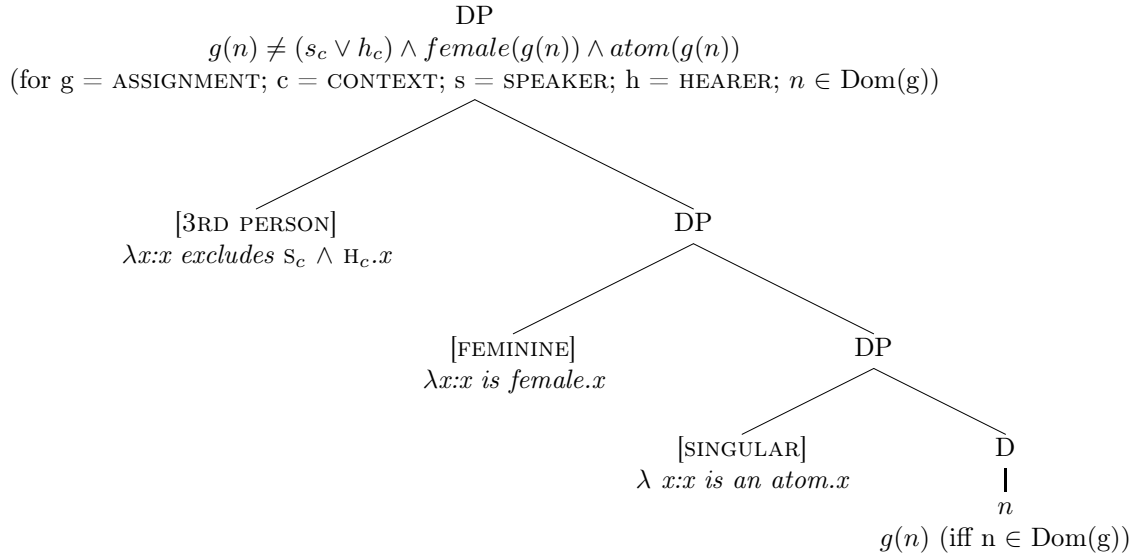
[37] In fact, to the extent that we succeed in motivating the features we use to distinguish PRO from overt DPs/*pro* in our implementation below, our account may be seen as less stipulative. Given recent demonstrations that morphological case is dissociated from DP distribution (see e.g., McFadden, 2004; Sigurðsson, 2009), abstract Case features would at present serve only to model the DP distribution facts, and thus would be more stipulative. Additionally, the null Case treatment of PRO due to Martin (2001, and others) has also come under wide criticism for being theoretically stipulative (see Hornstein, 1999; Sigurðsson, 2008, and many others.).

[38] We suspect that temporal semantics is related, as discussed above, but will not attempt a formal treatment of this for now. It is very likely that analyses are on the right track where clausal temporal and aspectual heads mediate between anaphoric DPs and their antecedents in the syntaxt/semantics, as argued in Heim (2008), Kratzer (2009), Borer (1989) and others. We ourselves propose such a treatment via selection due to Agree in the narrow syntax but leave the details with respect to temporal semantics aside for the time being.

[39] This stands contra analyses by Kratzer (1998), Heim (2008), Kratzer (2009) and others, which propose that bound variable DPs are additionally also born without any ϕ-features. This proposal definitely has

that these ϕ-features are syntactically adjoined to the D head in an arbitrary (or probably parametrized) hierarchical order. Thus, under our treatment, an anaphoric DP like *herself* has the following structure and corresponding LF semantics:

(55) **Syntax and semantics for an anaphoric DP (here: *herself*)**



Since the anaphoric DP doesn't have a reference of its own, it must somehow inherit this reference from another DP. Again following standard semantic analyses (citations above), we propose that this happens through variable binding of the anaphoric DP at LF. Variable binding ensures that the anaphoric DP ends up getting assigned the same index as that of its syntactic antecedent – yielding obligatory coreference readings such as those exhibited in the control data described earlier in this paper. Crucially also, semantic binding (as defined within the traditions of Heim and Kratzer, 1998) doesn't require locality between the antecedent and anaphoric DPs – only that a c-command relationship (built on the simpler notion of sisterhood) exist between them. This in turn means that controlled PRO can be bound by its obligatorily non-local antecedent. For a referentially independent DP, on the other hand, like the proper name *Martha*, the story is much simpler: it has its own reference and doesn't need to acquire this from any other DP, in the syntax or in the discourse. Standard algorithms of denotation and assignment take care of this.

7.5.2 The syntax of reference

But this isn't the whole story. If we take the Y-modular architecture of the grammar seriously, where LF and PF follow syntax, and if we further want to maintain the standard

its attractions: for instance, in the syntax, their (putatively) minimal feature-structure immediately distinguishes these pronominals from non-anaphoric (deictic) pronouns and flags them for variable-binding at LF. Additionally, LF/PF featural mismatches – where an indexical pronoun gets pronounced with 1st/2nd person features but is interpreted as a non-indexical bound variable – are avoided by assuming that the pronounced features only get inherited post-syntactically on the PF branch. However, we for now reject this featureless account of anaphoric DPs for the following reasons. First, the morphophonological identity of bound-variable and deictic pronouns is reduced to accident, since both DPs are held to have an inherently different syntax and semantics. Second, it is unclear how an anaphoric DP which is locally c-commanded by another anaphoric DP (as e.g. *himself* is by controlled PRO in: *John tried* $[_{CP}$ PRO$_i$ *to slap himself*$_i]$) ever gets to inherit its ϕ-features, since this would be strictly counter-cyclic. Finally, we also believe that, while a ϕ-feature might constrain reference, it is not equivalent to it, thus the two must be kept separate. See Sundaresan (2009) for more detailed arguments on this topic.

idea that binding of anaphors must happen late, at LF, we need a separate account for what happens in the syntax. I.e. what is the "narrow" syntactic correlate of reference? We propose (following the terminology in Reinhart and Reuland, 1993; Landau, 2004) a binary feature [$\pm R$] that is both inherent and interpretable on DPs. Since [$\pm R$] is a purely syntactic feature, it does not care about discourse dependencies on DPs. Thus, not only maximally independent DPs, like proper-names, but also deictic pronouns (and *pro*) – whose reference is determined in the discourse-context and not in the syntactic one – are marked [$+R$]. [40] In contrast, anaphoric DPs with a variable reference index such as SELF-anaphors, controlled PRO and classic bound-variable pronominals are marked with a feature [$-R$]. Crucially, the binary feature [$\pm R$] doesn't itself indicate semantic referentiality or the lack thereof: reference is only determined at LF – instead, [$\pm R$] serves to merely flag a DP in a certain manner, for later operations at LF and PF.[41] More precisely, we can think of [$\pm R$] as an instruction to LF to deal with the corresponding DP in a certain manner: if the DP is marked [$-R$], it should be variable-bound following independent rules of semantic binding due to antecedent-raising and predicate-abstraction; if the DP is marked [$+R$], on the other hand, variable-binding doesn't obtain at LF. The [$\pm R$] feature also serves as an instruction to PF: this plays out as Spell-Out rules conditioning phonological insertion which, among other things, determine whether a DP gets spelled out overtly or covertly. Specifically, a DP with the feature [$-R$] in the syntax will be spelled out overtly as a SELF-anaphor/bound-variable pronoun or silently, as controlled PRO; a [$+R$] DP, on the other hand, will be spelled out overtly as an R-expression or deictic pronoun or covertly as little *pro*. See Sundaresan (2009) for an analysis of the independent factors conditioning the choice between PRO and overt anaphors and discussion of how this is regulated by the systematic, cyclically-ordered interaction of the various grammatical modules.

But this is not all [$\pm R$] does; crucially, being a feature that is both interpretable and inherent on DPs, it can also participate in purely syntactic dependencies. In particular, we can use it to encode the selectional relationships involved in the distribution of DP types laid out in Section 7.2 above. Following proposals in Adger (2007) and elsewhere, we formalize selection through Agree, the standard Minimalist operation that captures dependencies in the syntax. Simply put, the selecting head – the probe – bears an uninterpretable feature, which must Agree with a matching interpretable feature on an appropriate goal, obeying standard locality and minimality restrictions. While [$\pm R$] is interpretable on DPs, it should be uninterpretable on functional heads, so we can use it there to encode the selectional restrictions that these heads carry (we use the notation [uF] to indicate that a feature F is uninterpretable). Specifically, a head that is specified [$u + R$] will require a [$+R$] DP (i.e. an overt R-expression, deictic pronoun, or little *pro*) in its local c-command domain, while a

[40] Here, we follow Reinhart and Reuland (1993) who also argue that deictic pronouns must be marked [$+R$]. But we differ from them in claiming that controlled PRO is marked [$-R$].

[41] A very similar point is, in fact, made by Reinhart and Reuland (1993) who first introduced the syntactic labels of [$\pm R$] on DPs. They claim [p. 697]:

> "It is not the case that referential properties of NPs miraculously restrict their syntactic behavior; rather, some independent properties of NPs determine how they can be used to refer. Thus, R should be a purely syntactic property. Having this property is a necessary condition for an expression to function as an independent argument, but R itself does not have anything to do with reference."

This more or less conforms to our own view with regards to the binary feature [$\pm R$] though, as mentioned earlier, for independent reasons we do not follow Reinhart and Reuland (1993)'s later conclusion that [$\pm R$] refers to the ϕ-featural and Case specifications on the DP and nothing else.

head specified $[u - R]$ will require a $[-R]$ DP (i.e. controlled PRO, bound variable pronoun or SELF-anaphor) in its c-command domain.

The distribution of the clausal types discussed in Section 7.2 above is regulated by a binary feature we'll call $[\pm anaph]$. Specifically, an anaphoric clause will be specified $[+anaph]$, an independent clause $[-anaph]$, and a dependent clause underspecified for this feature. In each case, the feature will be on C, where it is plausible to think that it is interpretable. However, on a predicate that selects a clausal complement, such a feature would be uninterpretable (indicated as: $[u \pm anaph]$). We must also stipulate a dependency between $[\pm R]$ and $[\pm anaph]$. In particular, a C that is $[+anaph]$ will necessarily require a $[-R]$ subject and will thus itself additionally be marked $[u - R]$. On the other hand, a C that is marked $[-anaph]$ will require a referentially independent subject (marked $[+R]$), and will thus also be marked $[u + R]$.

That is:[42]

(56) a. $[+anaph] \rightarrow [u - R]$
b. $[-anaph] \rightarrow [u + R]$

Given the discussion in Section 7.2, temporal dependency should be related to the $[\pm anaph]$ feature as well. Of course, ultimately we would like to derive this relationship and the stipulation in (56) in principled fashion, but this will require a deeper understanding of the dependencies involved and must be left for future work.

7.6 Sample structures

The Tamil and other data presented in Sections 3 – 5 can now be acounted for as follows.

7.6.1 Anaphoric clauses

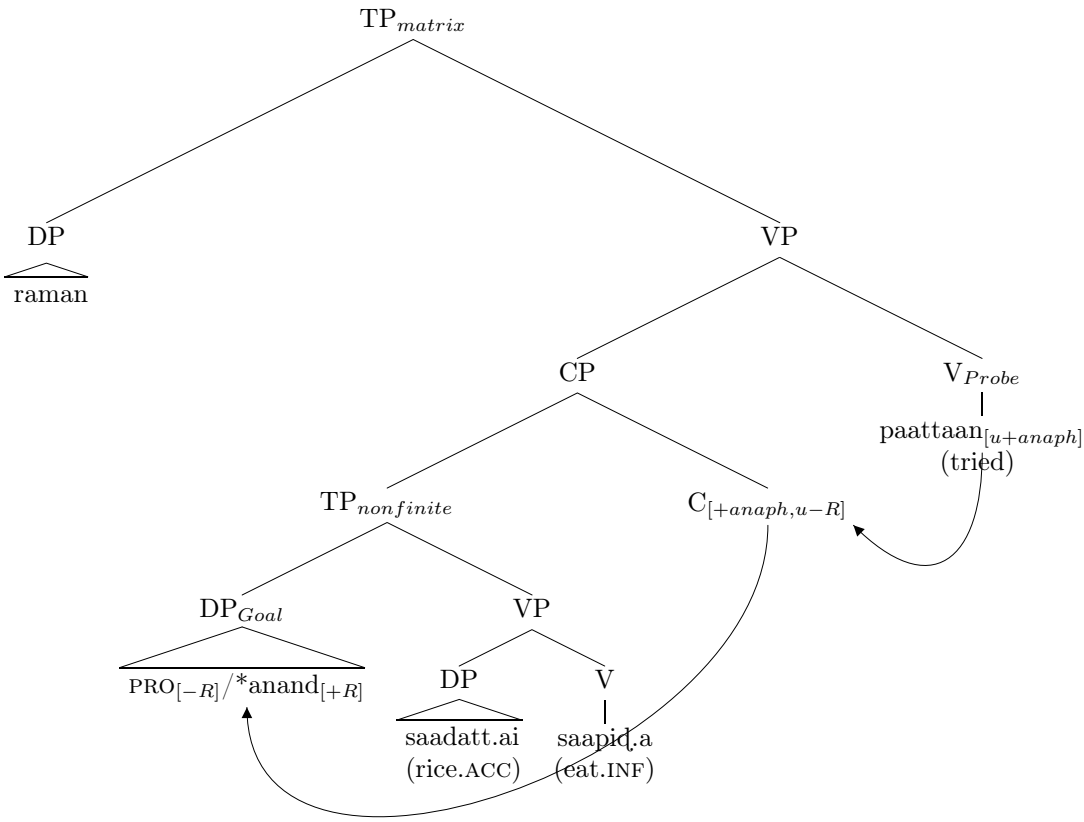
With predicates that take obligatory control complement infinitives, like Tamil *paar-* 'try' and English *try*, the selection proceeds in a two-step process. The matrix predicate selects directly for a temporally and referentially anaphoric clausal complement. This is expressed by the feature $[+anaph]$ which is uninterpretable on the selecting predicate and interpretable on C. This C, by virtue of being anaphoric, in turn selects directly for a $[-R]$ subject (PRO).

The tree below shows a simplified version of this kind of selection. Note that arrows on all trees do not represent movement, but Agree relationships.

(57) raman [PRO/*anand saadatt-ai saappiḍ-a] paa-tt-aan
raman.NOM PRO/*anand.NOM rice-ACC eat-INF try-PST-3m.sg

[42]If we allow a three-way distinction in terms of the binary feature $[\pm anaph]$ (plus, minus and underspecified/not present) even on heads where it is interpretable, we should expect the same logical possibility with $[\pm R]$. That is, there should also be DPs which are simpy not specified for this feature. Such DPs would presumably be intermediate in their degree of potential referential dependency. In the current system, they would be syntactically restricted to positions where neither $[+R]$ nor $[-R]$ was being selected for, since they would not be able to Agree with any selecting head for this feature. As we have pointed out above, we expect that more degrees of relative dependence will need to be distinguished once more facts are taken into account, so this may be a positive result. One option to pursue would be treating at least some long distance/SE-anaphors in this fashion. However, it should be stressed that our central concern here is showing that a syntactic account of the alternation betwen PRO and other DP types in terms of selection is possible. What the precise details of that analysis should be, remains a matter of ongoing research. The specific featural machinery proposed here has been chosen primarily on this basis of simplicity, and will presumably need to be revised as our understanding improves.

‘Raman$_i$ tried [$_{CP}$ PRO$_i$/*Anand to eat rice].



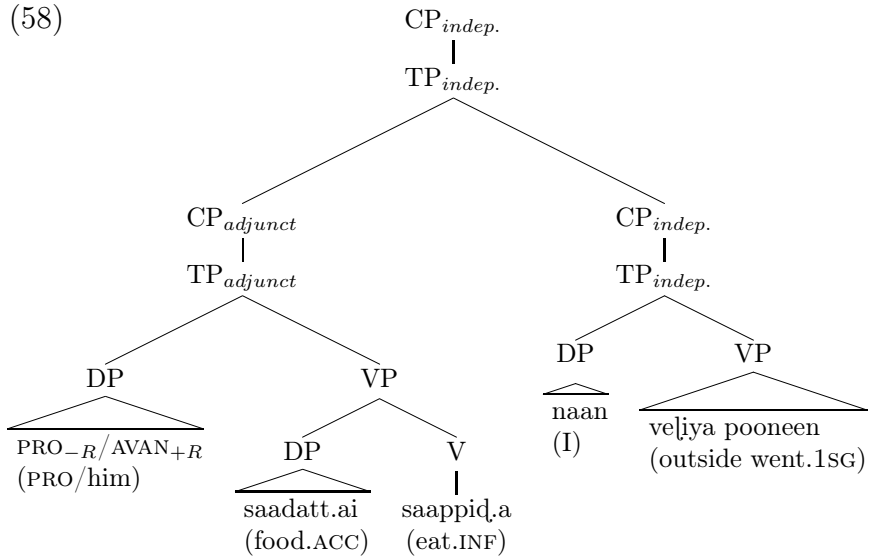
In the version with PRO, selection applies successfully. The verbal head bearing the feature $[u+anaph]$ c-commands C bearing $[+anaph, u-R]$, which in turn c-commands PRO bearing $[-R]$. In neither instance does a (phasal) locality boundary intervene, nor are there potential interveners which would create minimality problems. I.e. all of the syntactic requirements for Agree are fulfilled, and the uninterpretable features can be checked off by matching with their interpretable counterparts.

In the version with an overt subject (*Anand*), however, there is crucially a mismatch of $[\pm R]$ features between probe and goal. The C is marked with an uninterpretable $[u-R]$ feature, which means that it needs to Agree with a DP that is marked $[-R]$ – in other words, a PRO (or an overt anaphor). However, the closest goal, the embedded subject *Anand*, as an overt R-expression, is marked $[+R]$. As such, it is not able to Agree with the probe and the derivation crashes.

7.6.2 Dependent clauses

The next structure shows the default scenario which is one where both PRO and overt subject DPs alternate in free variation. This is the situation in alternating nonfinite complements such as those of *want*-class predicates in Tamil, English, Malayalam and other languages, as well as in Tamil and ME adjunct infinitives.

(58)

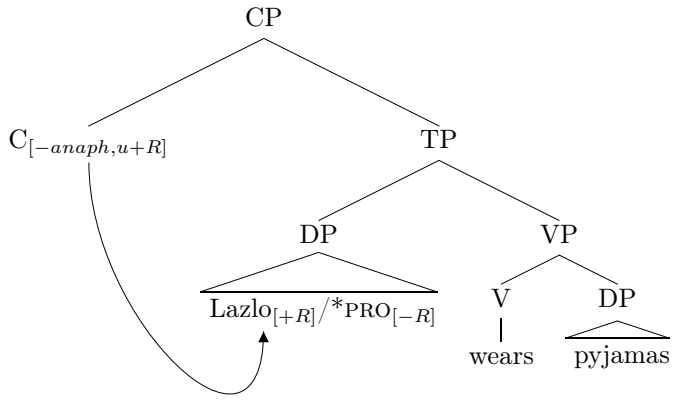


Here, the matrix predicate (*pooneen* ("went")) is not inherently specified for $[u \pm R]$. Additionally, the structural conditions necessary for Agree between Probe and Goal simply do not obtain since the nonfinite clause is an adjunct, not a complement of the matrix predicate. In complements of *want*-class predicates which allow both overt subjects and PRO, the structural conditions for Agree between a matrix functional head and the embedded DP subject do obtain but selection nevertheless does not occur because the matrix predicate simply does not bear a selectional feature for $[\pm R]$.

7.6.3 Independent clauses

Independent clauses show the opposite kind of selection from *try*-class infinitives. Such clauses are temporally and referentially independent and thus the C head is marked $[-anaph]$. As such, it is also specified $[u + R]$, and hence requires a referentially independent subject.[43] The locality and minimality conditions are of course the same as we saw for selection of $[-R]$ by anaphoric C in the obligatory control complements above.

(59)



In contrast, PRO subjects in finite clauses are predicted to be impossible because PRO, being inherently $[-R]$, cannot satisfy the selection requirements of independent C in the matrix clause. Here again, we have a mismatch between the $[u + R]$ feature of the selecting C and the $[-R]$ feature of the closest potential goal PRO.

[43]We assume that all independent clauses are CPs. Alternatively, if we say that (some) independent clauses are TPs, $[u + R]$ would be located in finite T.

8 Summary

We have presented extensive data from Tamil, Malayalam, Sinhala, Latin, Irish, Middle English and Present-Day English and shown that they are highly problematic to standard Case-theoretic approaches to the distribution of overt DPs and PRO. For one thing, we find that overt DPs are licensed in a number of these languages in contexts where Case theory predicts that only PRO should be licensed. For another, we find overt DPs and PRO in alternation in a number of contexts, with no independently observable factors differentiating the variants with the two types of DP. We have argued that this state of affairs is inconsistent with the Case-theoretic premise that overt DPs and PRO have distinct and complementary licensing requirements.

We have considered a number of options for handling the problematic data in such a way as to salvage Case theory but concluded, however, that none of these possibilities yields a satisfactory analysis of the range of data considered. In particular, none of the Case-theoretic strategies can accommodate the alternations between PRO and overt DPs without unattractive stipulations.

We have thus proposed an alternative analysis, which is in a sense the reverse of the standard Case-theoretic approach. Where Case theory accounts for the distribution of DPs in terms of their own need for licensing, we have argued that it is the selectional requirements of c-commanding verbs and lexical heads that are responsible. Specifically, in certain contexts – like the complement of the Tamil verb *paar-* 'try' – there is selection for a DP bearing the interpretable feature $[-R]$ like PRO. If a $[+R]$-bearing overt DP occurs in the relevant position instead, the result is ungrammatical – not because the DP is not licensed, but because the selectional requirements are not met. A similar selectional requirement for $[+R]$ on C in independent clauses ensures that they will have overt DP or little *pro* subjects rather than PRO. In many clauses, however, no such selectional pressures are at work – the embedding verb is not specified for a particular clause-type, or the clause is embedded in such a way that selection is ruled out for syntactic reasons. In such clauses, the default scenario emerges, which is free variation between PRO and overt DPs controlled by the intended interpretation.

Our proposal provides a consistent account of the data that were problematic for Case theory. Not only can it accommodate the attested alternations between PRO and overt DPs, it also makes testable (and thus far confirmed) predictions about where such alternations should and should not be found. Thus it achieves a level of explanation where Case theory allowed only stipulation. Crucially, it can still handle the data that were not problematic for Case theory. Finally, while we have motivated our selection-based approach on the basis of data from Tamil and a handful of other languages, we do not intend it as an account of those languages alone. Rather, we believe that it can serve as the basis for a more general theory of DP distribution, and intend to expand it to a broader selection of languages in future research.

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