Finiteness in South Asian languages: an introduction

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Abstract

Finiteness bears on issues pertaining to some of the most central properties of a clause: its tense, aspect, mood, agreement, the referential properties and case-marking of its subject and, more generally, the way in which the clause is anchored to a higher one or to the utterance context. And yet, given the increasing amount of empirical evidence challenging conventional definitions of finiteness, it remains one of the least understood concepts in linguistic theory. The series of eleven papers in this volume presents new evidence on the nature of finiteness from a number of hitherto under-studied languages, namely those of the Indo-Aryan and Dravidian language families spoken in South Asia. The hope is that these papers will encourage the reader to deepen their knowledge and simultaneously question their existing view of finiteness. The introduction below sets the stage for the rest of this volume: we briefly describe the content of the individual papers included here and situate them within the larger context of the rich dialogue on finiteness.
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1 Introduction

Two sets of developments in the field of linguistics have occurred in recent years that are especially relevant to the concerns of this special issue. On the empirical side, there have been a number of careful formal studies on typologically diverse

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languages, increasing our understanding of what sorts of clause-related properties may parametrically vary and what remain constant (Raposo, 1987; Borer, 1989; Sigurðsson, 1991; Butt, 1995; Landau, 2000; Wurmbrand, 2001; Polinsky and Potsdam, 2002, to name but a few). On the theoretical side, we have, on the one hand, recent advances involving the increased articulation of syntactic and morphological structure, resulting in the breaking down of linguistic objects into smaller and smaller primitives (for instance, work within the cartographic tradition Rizzi, 1997; Cinque, 1999; Speas and Tenny, 2003; Bianchi, 2003; Adger, 2007) and, on the other, highly articulated models of a modular grammar involving a separation between the underlying representation and surface realization of linguistic features (Halle and Marantz, 1993; Embick and Noyer, 2007; Caha, 2009). Both types of advances, we feel, make this a particularly appropriate time to discuss finiteness, traditionally treated as a primarily monolithic theoretical entity, and to re-evaluate, from first principles, whether a unified definition of finiteness across languages is indeed possible and, if so, what it would look like.

It is particularly interesting to explore finiteness from the perspective of South Asian languages, since they, for the most part, manifest rich verbal inflection, yet have systems of clausal embedding that differ quite markedly from those found in the more familiar European languages. However, despite there being over six hundred languages from the Indo-Aryan and Dravidian families, which are spoken natively by over 1.6 billion people (`http://www.ethnologue.com/region/SAS`), formal theoretical work on these languages within the generative framework remains relatively sparse. With a view to helping fill this gap, the editors of this volume co-organized a workshop, "Finiteness in South Asian languages", at the University of Tromsø in June 2011. The goal of that workshop was to bring together new, and potentially *inconvenient*, data bearing on the topic of finiteness, with a view both toward understanding the intricacies of this category and challenging extant theories about it.

The idea for this volume was born with that workshop and the papers presented there. The central concern of the eleven articles included here is the meaning, implementation, and representation of clausal finiteness. Five of the papers included in this volume are developed from presentations given in that workshop, and are each paired with a commentary; the remaining contribution is a standalone paper by R. Amritavalli. The articles bring forward original evidence from different clause-types in a typologically diverse array of languages including Telugu, Tamil, Malayalam, Kannada, Bangla, and Hindi/Urdu, and address the syntactic, semantic, and morphological issues of finiteness pertaining to this evidence from a variety of theoretical perspectives (lexicalist vs. non-lexicalist, Minimalist

vs. LFG, Cartographic vs. traditional C-T-v-V). For all their differences, however, all papers share a common core, namely a challenging of traditional notions of finiteness and a quest toward converging upon a universally applicable definition of this mysterious property.

2 A brief history of theories of finiteness

The recognition of finiteness as a grammatical category, and the term itself, go back to classical Latin grammar. A 'finite' form is a completed or determined one (etymologically the word derives from the past participle of *finīre* 'finish'), in the sense that it is marked to refer to a specific person. Thus, a finite verb is a verb with person and number marking, while all others are non-finite. This did indeed describe a sensible and real split within the verb forms in Latin and the other classical European languages. The forms bearing person and number agreement are distinctive, being also the only forms with full tense and mood marking, and have a special syntactic distribution. The forms of verbs that did not bear this marking were quite different morphologically, generally behaving more like nouns or adjectives and inflecting for categories like case and gender which never appeared on the finite forms.

Later, the notion of finiteness came to be extended to describe properties of clauses based on whether they contained a finite verb form or not. Only once this move was made did it make sense to talk extensively about syntactic aspects of finiteness, like the ability of a clause built around a particular verb form to serve as an independent utterance. More recently, work in both the Generative and non-Generative traditions has noted and explored the tendency for the finiteness of the verb form to have implications for things like the case of the subject, whether or not it is pronounced, and how its reference is determined. It is at this point that things start to get really interesting, but also that problems start to arise. This is partly because we inevitably run into mismatches between the morphological status of a verb form and its syntactic behavior, and partly because a wider range of languages begins to be considered, which do not necessarily have the same distribution of inflectional categories across verb forms.

In the GB era, in what was a major theoretical innovation, finiteness was re-analyzed, from referring to an inflectional property of a verb, to being an abstract structural category of the clause. This category, initially labelled Aux and later Infl (or simply I) was arguably the most important category of a clause, without which the clause simply couldn't come to be. I.e. Infl/I came to be regarded as the *head* of

the clause. This move had important consequences for the way in which finiteness was perceived. First, it was no longer seen to be the property of a verb, but of the clause as a whole. Second, it was envisioned as an abstract structural category, not as a surface inflectional form. Taken together, these properties had the effect of driving a separation between the surface inflectional marking on a verb and the finiteness of a clause. The idea (going back to Chomsky (1957)), that lexical items were the output of phrase-structural rules that took non-terminal category labels as input, and that one possible lexical realization could be the null element ϕ, was of particular consequence. As a result, while the presence of inflectional marking on the verb entailed the presence of a positively specified, finite Infl in the syntax, its absence didn't entail the absence of finite Infl in the syntax. This allowed one to maintain, at least in theory, that languages like Chinese, which lacked overt tense and agreement inflection altogether, nevertheless did differentiate clauses according to finiteness underlyingly.

Finiteness was recognized early on as a particularly *useful* concept for understanding other aspects of syntactic theory. It was observed to play an important role in issues pertaining to syntactic locality, for instance. Early work on syntactic locality (e.g. Chomsky, 1973) recognized that finite and non-finite clauses were differentiated with respect to their ability to act as "barriers" between two elements involved in a syntactic dependency, such that finite clauses are barriers while at least some non-finite clauses are not. This could be seen in action in structures involving the binding of anaphors and reciprocals. The basic observation is that anaphors and reciprocals must be local to their antecedents, while non-anaphoric pronouns like *they* cannot be too local to other DPs that they are coreferent with. Thus, only an anaphor may occur in the same clause as a DP it is coreferent with, as shown by (1):

(1) a. The candidates$_i$ liked each other$_{\{i,*j\}}$.
    b. * The candidates$_i$ liked them$_i$.

If a finite clause boundary intervenes between two coreferent DPs, the pattern is reversed – anaphors are no longer possible, but non-anaphoric pronouns are:

(2) a. * The candidates$_i$ expected [that each other$_{\{i,*j\}}$ would win].
    b. The candidates$_i$ expected [that they$_i$ would win].

Crucially, at least some non-finite boundaries do not constitute locality barriers in this sense. Thus, in (3), binding is possible into the non-finite ECM clause:

(3) a. The candidates$_i$ expected [each other$_{\{i,*j\}}$ to win].
    b. * The candidates$_i$ expected [them$_i$ to win].

In order to account for this contrast, Chomsky (1973) proposed (4) as one of several locality restrictions on syntactic rules, including the ones underlying anaphora:

(4) **Tensed-S Condition**
No rule can involve X, Y in the structure ... X ... [α... Y ...] ... where α is a tensed sentence.

With the advent of GB theory, locality of binding was handled in a different way, in terms of Governing Categories (i.e. the domain within which an anaphor must be bound, and in which a pronoun must be free).[1]

But here as well, finiteness played an important role. One of the points characterizing a Governing Category is that it contain a SUBJECT, one instantiation of which is the AGR of a finite clause. In effect, this means that a finite clause will always constitute a locality domain for binding, while a non-finite clause may also be one, but only if it contains a SUBJECT of a different kind.

Another crucial type of syntactic dependency within the GB framework was that holding between a moved element and its trace, and here too, finiteness was observed to play a role. In particular, it was observed that A-movement out of a finite clause is blocked, whereas A-movement out of a non-finite clause is not, yielding minimal pairs like the one below:[2]

(5) John$_i$ seems [to t$_i$ be smart].
(6) * John$_i$ seems [that t$_i$ is smart]

Interestingly however, this sort of opacity effect was not treated directly in terms of restrictions on locality, but rather in terms of Case theory. In particular, it was stipulated that the DP *John* in a sentence like (5) couldn't get Case in situ as the subject of the non-finite clausal complement of *seems*; as a result, it was forced to move up to the matrix clause where it could get its Case-needs satisfied. As the

[1] X is a **governing category** for Y iff X is the minimal category containing Y, a governor of Y, and an accessible SUBJECT for Y. The notion of "government" itself is defined as follows (Chomsky, 1981, p. 250):

i. [$_\beta$ ... γ ... α ... γ ...], where
   a. α = X^0 or is coindexed with γ
   b. where ϕ is a maximal projection, if ϕ dominates γ then ϕ dominates α
   c. α c-commands γ

In this case, α *governs* γ.

[2] Since we are discussing the state of the theory within the GB framework, we are using the trace notation that was prevalent then; of course, the existence of traces as distinct objects has since been questioned and entirely abandoned within the Minimalist framework.

subject of the finite clausal complement of *seems* in (6), on the other hand, *John* could get its Case licensed in situ. As a result, it didn't have to move up to the matrix clause and indeed *could* not, given the assumption that a single DP could not be assigned Case twice. In more recent Minimalist proposals, the treatment of the grammaticality distinction between (5) and (6) has more prominently featured the role of locality, in a way that is sensitive to finiteness. At least certain types of non-finite clauses are assumed to involve a smaller structure than typical finite clauses, with the difference crucially involving the presence or absence of a barrier for locality. Non-finite clauses like that in (5) are argued to be TPs, which don't include a phase-boundary, thus are transparent to syntactic operations involving next higher clause. In contrast, finite clausal complements like that in (6) are CPs, which are phasal, thus only the edge of the CP (i.e. the specifier + the head C) is visible to operations in the next higher clause. Since the embedded subject is in Spec-TP, it cannot interact with the matrix clause, and the raising is blocked.

Within the GB era, clauses were subject to a binary classification into finite and non-finite. The latter included clauses such as the complement of 'try' in (7) in English, which lacked (overt) tense and agreement inflection, and the former included those like (8), which were inflected for both tense and agreement:

(7) John$_i$ tried [EC$_{\{i,*j\}}$ to swim underwater].
(8) Mary saw [that John swam underwater].

The hitherto observed hallmarks of finiteness, such as the ability to distinguish between clauses that could stand alone and those that were dependent on another, seemed to correlate with this inflectional distinction, at least for English. However, the finiteness distinction also seemed to correlate with other apparently disparate properties of elements within the clause, such as the overtness and Case-marking of the clausal subject. Non-finite clauses seemed to require morphophonologically silent subjects (with, trivially, no Case-marking) whereas those of finite clauses were typically (in languages with nominative-accusative case systems) nominative-marked and overt:

(9) * John$_i$ tried [Bill$_j$ to swim underwater].
(10) * Mary$_i$ saw [that EC$_i$ swam underwater].

Another property of the subject that seemed to be closely tied to finiteness was its ability to refer independently. The subjects of non-finite clauses like that in (7) are referentially anaphoric on the immediately higher subject or object; in contrast, the subjects of finite clause like (8) can refer independently. The GB-era analysis was that the relationship between clausal finiteness and subject (c)overtness, Case and reference is a causal one. I.e. the pronounceability and reference of the subject

and its ability to be Case-marked were taken to be a direct result of the finiteness of the clause. Subject were analyzed as occupying the specifier of the Infl head, which meant that the correlations between the properties of the subject and the finiteness of the clause could be stated structurally, given the locality of the Spec-Head relation and the further assumption that finite Infl counted as a proper governor, while non-finite Infl did not. The null subject of non-finite clauses, labelled "PRO", was uniquely characterized as possessing properties that conformed simultaneously to those of anaphors and pronominals: it was anaphoric in the sense that it required a c-commanding antecedent for its reference, and pronominal in that it resisted being bound locally. To resolve this dilemma, Chomsky (1981, 1986), among others, proposed that obligatorily controlled (OC) PRO was lexically specified as [+pronominal] and [+anaphoric] – a feature combination that imposed mutually inconsistent Binding Theoretic restrictions which could only be vacuously satisfied by its being ungoverned, and thus having no Governing Category within which the Binding Conditions could apply. In other words, it could be satisfied only in the Spec of non-finite Infl. Furthermore, the GB Case filter (Chomsky, 1981) claimed that overt N/DPs had to be Case-marked. Since Case-marking was restricted to apply under government, an N/DP in ungoverned position could not be Case-marked and thus also could not be overt. Thus, the conception of PRO as a pronominal anaphor explained not only its (putative) lack of Case-marking but also its phonetic silence. In contrast, the subject of a finite clause, appearing in the Specifier of finite Infl, could be governed and thus Case-marked by that Infl and, by extension, be capable of being overtly pronounced. The observed correlation between the finiteness of a clause and the properties of its subject (its reference, Case-marking, and (c)overtness) could thus all be derived by means of conditions on structural wellformedness.

Subsequently, the work done by Infl was broken down into smaller functional categories such as Agr and T, the former being further differentiated into AgrS (for subject agreement) and AgrO (for object agreement). This opened up the possibility, at least in theory, to extend the finiteness dialogue to clauses where the tense- and agreement-marking seemed to make different predictions, such as "agreeing infinitives" in Portuguese (Raposo, 1987) or non-agreeing tensed participles in Lezgian (Nikolaeva, 2007); one could, for instance, claim that it is tense rather than agreement that defines finiteness in European Portuguese whereas, in Lezgian and Lezgian-like languages, it is the other way around, with agreement rather than tense instantiating clausal finiteness. Other changes were proposed as well. For instance, standard Minimalist theories of Case-assignment (Chomsky and Lasnik, 1993; Martin, 2001) argued that the PRO subject of a non-finite clause

(assumed to be in [Spec, TP]) does, in fact, get assigned Case by T but claimed that this is a special "null" Case which is always and only assigned to PRO. But although the details of the implementation have varied according to the package of assumptions on hand, the basic idea has still been retained, that the properties of a subject (Case-marking, (c)overtness, and reference) are somehow licensed by, thus a direct function of, the properties of the structural category that instantiates clausal finiteness.

Finiteness was also observed to correlate, to a large degree, with the ability of a clause to stand alone or qualify as an independent assertion. In its simplest form, a clause that lacked tense and agreement couldn't function as an independent proposition, but had to be embedded (via adjunction or complementation) within a finite one; in contrast, a clause that was fully inflected for tense and agreement could be embedded or serve as an independent assertion. This is familiar from examples like the following:

(11) Billy$_i$ asked [EC$_{\{i,*j\}}$ to smoke in the plane].
(12) * EC$_i$ to smoke in the plane.
(13) Billy$_i$ asked [that he$_i$ may smoke in the plane].
(14) Billy/He may smoke in the plane.

The standard explanation for such patterns was that an independent proposition definitionally required positive specifications for tense and agreement in the syntax, an idea that has been retained in more recent analyses.

To sum up, then, finiteness within GB and standard Minimalist analyses is "a binary morphosyntactic category of the clause that (i) regulates tense and agreement on the verb, (ii) controls the realization of the subject argument, and (iii) creates domains opaque for some syntactic rules" (Nikolaeva, 2007, 6); to this, we might add that it was also held to play a crucial role in the ability of a clause to serve as an independent assertion. However, empirical research into a wider array of languages, many typologically very different from English and other languages within the more familiar Romance and Germanic families, has since led to a re-examination of every single one of these supposed hallmarks of finiteness, as we discuss below.

2.1 The need for a better theory

As already noted in passing, some languages, like European Portuguese, contain clauses that look infinitival in the sense that they lack tense, but look finite in showing marking for agreement; additionally, such clauses also take overt

pronominal subjects. This is illustrated by (15), taken from Raposo (1987, 86) (formatting ours):

(15) Será dificil [eles aprovar-em á proposta].
It will.be.difficult they to.approve-3PL the proposal
"It will be difficult [for them to approve the proposal]."

In contrast, languages like Tamil have clauses that show the opposite effect: they are apparently inflected for tense, but uninflected for agreement. The sentence in (16) denotes a gerundival participle from Tamil with this type of inflection:

(16) Raman$_i$ [EC$_i$ Seetha-væ naaḷekki paar-pp-adaagæ] so-nn-aan.
Raman EC Seetha-ACC tomorrow see-FUT-GER-ACC say-PST-3MSG
"Raman$_i$ spoke of [EC$_i$ seeing Seetha tomorrow]."

The problem, of course, is that the embedded clauses in these structures look non-finite according to one diagnostic (tense in European Portuguese and agreement in Tamil) but finite according to another (agreement in European Portuguese; tense in Tamil). On the other hand, as discussed by Raposo for European Portuguese, and as is also true for Tamil, these clauses both look non-finite in that they must always be embedded within a higher clause and cannot stand alone.

As discussed earlier, the decomposition of Infl into the categories T and Agr did make it possible to maintain, at least in theory, that in sentences like (15), the embedded clause is non-finite despite bearing agreement morphology. Raposo e.g. proposes that it is Tense that defines finiteness cross-linguistically, but that languages are parametrized in whether a [+Agr] specification is possible in a [+Tense] clause. In most languages it is not, so that agreement is restricted to finite clauses, but in a few, like European Portuguese, Agr is (partially) independent of Tense. An issue is raised, however, by the Tamil sentence in (16), which also seems to be non-finite in its inability to stand alone, but which has the exact opposite specification for Tense and Agr. I.e. it seems to be [+Tense, -Agr], a combination which Raposo's theory does not countenance, but which would presumably be regarded as finite on the basis of Tense alone.

A potentially different sort of complication arises from the properties of the clausal subject. As already noted above, inflected infinitives in European Portuguese seem to also allow a lexical subject (e.g. the pronominal *eles* in (15)), which is entirely unexpected under standard GB and Minimalist accounts of Case theory, as we have seen. Raposo ties the presence of an overt subject in such structures to that of agreement, building, in particular, on older ideas about the close parallels between agreement and pronominals (Chomsky, 1981; Reuland, 1983) to propose

that the Agr head in inflected infinitives is Case-marked; this in turn allows it to assign nominative Case to the lexical subject in [Spec, Infl].

The idea is an attractive one and finds close parallels in later analyses of similar phenomena in other languages. For instance, working within a Minimalist framework, Szabolcsi (2009) argues for Hungarian and Italian that overt pronominal subjects can be licensed even in infinitives, just in case they are able to Agree with a "finite" T in a different clause. Since that finite T must also Agree with its own subject, this can only work when the subjects of matrix and embedded clauses are coreferent. This analysis thus derives not only the possibility of overt subjects in infinitives but also their status as pronouns that are obligatorily coreferent with the subject of the next higher finite clause. Similarly, Landau (2004) uses an intricate "calculus" of T and Agr features, specified on Infl and C, and an R-feature, specified on DPs, to derive the full paradigm of overt vs. covert, and referentially independent vs. anaphoric subjects in different morphological and semantic types of "infinitives" in European Portuguese, Hebrew, and other languages. Landau's *R-assignment Rule*, reproduced in (17) below, stipulates an exact correlation between the finiteness of a clause (defined in terms of T and Agr features) and the nature of its subject:

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

The crucial point about the R-assignment Rule is that Infl must have both tense and agreement in order to license a referentially independent ([+R]) subject. So, for example, in languages like Hebrew and Greek that have control into apparently finite clauses, Landau shows that, while these clauses are overtly inflected for agreement, they lack tense. Given the R-assignment Rule above, this automatically means that they will only be able to have referentially anaphoric subjects. European Portuguese inflected infinitives (as in (15)), on the other hand, are shown to have independent tense interpretation, despite their apparently nonfinite inflection. They are thus [+T, +Agr] and license referentially independent subjects by (17).[3]

Despite differences in the details of their implementation, these analyses all have in common the idea that finiteness is not very useful as a monolithic concept but, rather, must be broken down into smaller components, and that behaviors

[3]This specification differs from that proposed by Raposo (1987) with respect to the tense feature, but is in line with his own discussion of the temporal *interpretation* of the relevant clauses.

attributed to finiteness must be made derivative of the interplay between these components. However, while these analyses mark a clear advance in our understanding of finiteness and, in particular, demonstrate the necessity and usefulness of decomposing finiteness in the manner described, they also fall short of explaining the full range of attested data.

As Sundaresan and McFadden (2009) note, clauses that lack all tense and agreement marking, thus are arguably non-finite in even the loosest sense, can still allow overt, referentially independent subjects. Evidence for such structures is attested in a typologically varied array of languages, including Tamil, Malayalam, Sinhala, Irish, Latin, Middle and even Modern English. Examples are provided below from Sinhala, Irish, and Middle English (see Gair, 2005; McCloskey, 1985; Garrett, 2012, respectively, for further discussion):

(18) **Sinhala:**
[Maṭə teerennə issella] ləkcərekə iwərə unaa.
I.DAT understand.INF before lecture finish become.PST
"The lecture ended before I understood (it)."

(19) **Modern Irish:**
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.'

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

Such data seriously undermine a simple correlation between subject reference and clausal finiteness, in the manner assumed in standard GB and Minimalist theories, but also in more sophisticated proposals such as Landau (2004) and Szabolcsi (2009), and suggest that the relationship, to the extent that one exists, must be potentially mediated by other factors.

A different sort of challenge is posed by structures involving partial control. On one end of the spectrum, we have the classic non-finite subject, obligatorily controlled (OC) PRO, which would be classified as a DP with a [-R] referential specification, in Landau's terms; on the other end of the spectrum, we have the subject of a fully finite clause (e.g. a *that*-CP in English or a root clause), which typically is referentially fully independent (thus [+R] in Landau's system):

(21) Maggie$_i$ tried [EC$_{\{i,*j\}}$to work before dinner].
(22) Maggie asked [whether John worked before dinner].

However, there is a third possibility, which is that of a partially controlled subject of a clause that, at least on the surface, looks non-finite in languages like English, as in the 'want'-class complement in (23) below:

(23) Maggie$_i$ wants [EC$_{\{i+,*j\}}$ to assemble before dinner].

Such subjects are also labelled PRO, following convention, but it is clear that partially controlled PRO has very different referential properties from the OC PRO subject in (21), as indicated by the subscripted indices on each. The difference is, briefly, that the embedded subject in a sentence like (23) must, in addition to referring to Maggie, also refer to one or more other discourse salient entities: after all, Maggie can hardly assemble somewhere by herself. The choice of whether the embedded subject is partially or fully controlled is not random, but seems to be closely tied to the syntactico-semantics of the selecting predicate: verbs like 'want', 'hope', 'expect' and 'ask' introduce clauses whose subjects may be partially controlled; verbs like 'try' and 'begin', on the other hand, may only select for clauses with exhaustively controlled (i.e. fully anaphoric) subjects (as shown in 24). Even more interestingly, perhaps, the possibility for a clause to have a semi-independent subject, as in structures like (23), seems to correlate with its ability to be independent from the matrix clause in other ways, such as being able to vary temporally and aspectually from the matrix (cf. example (25)). In contrast, clauses that cannot host partially or fully independent subjects, like that in (21), also cannot have independent tense and aspectual specifications, as illustrated by (26) (see Stowell, 1982; Chierchia, 1989; Wurmbrand, 2001; Landau, 2004, for extensive discussion of these and related facts in languages like English, Italian, and German):

(24) * Maggie$_i$ tried [EC$_{i+j}$ to assemble before dinner].
(25) Maggie wanted [EC$_{i+j}$ to have assembled before dinner tomorrow].
(26) * Maggie$_i$ tried [EC$_i$ to have worked before dinner tomorrow]

These types of data clearly show that a binary classification of finiteness into [±finite] and of subject reference into [±R] is not fine-grained enough on its own to derive the full range of attested empirical patterns. For instance, Landau (2004) proposes that, while both exhaustively controlled and partially controlled PRO are specified as [-R], and the reference of both determined by an Agree relationship with the antecedent, in the partial control cases this relationship is more indirect, because it is mediated by an intervening C. This mediation in turn introduces the possibility of a referential mismatch.

We have just seen that two of the standard diagnostics of finiteness, namely the appearance of tense and agreement on the verb and the regulation of the properties of the subject, fail in interesting ways in different languages. Some of the other traditional hallmarks of finiteness, as discussed earlier, have to do with opacity effects for certain types of syntactic dependency, and the ability of a clause to serve as an independent utterance. The validity of these has also since been called into question by novel cross-linguistic data.

It is quite easy to demonstrate that opacity and transparency effects in syntactic dependencies cannot be straightforwardly treated to be a function of finiteness if the latter is interepreted as a strictly binary concept defined in the traditional way. As noted at the outset, anaphoric dependencies often show clear opacity effects. For instance, in the Scandinavian languages, long-distance anaphora obtains predominantly across non-finite clauses (Hellan, 1988). However, in some languages, like Icelandic, long-distance anaphora is also possible across subjunctive clauses, though not across indicative ones (as shown in the following examples from Hicks, 2009, formatting ours, see also Sigurðsson (1991); Reuland (2001) for discussion):

(27) Jón$_i$ heyr-ð-i [$_{CP}$ að ég **hef-ð-i**
Jon hear$_{\text{IND.PST-3SG}}$ that I have.$_{\text{SBJV-PST-3SG}}$
svikið sig$_{\{i,*j\}}$].
betrayed.$_{\text{PTCP}}$ $_{\text{ANAPH}}$
"Jon$_i$ heard [$_{CP}$ that I had betrayed him$_{\{i,*j\}}$]."

(28) * Jón$_i$ heyr-ð-i [$_{CP}$ að ég **haf-ð-i**
Jon hear$_{\text{IND.PST-3SG}}$ that I have.$_{\text{IND-PST-3SG}}$
svikið sig$_i$].
betrayed.$_{\text{PTCP}}$ $_{\text{ANAPH}}$
"Jon$_i$ heard [$_{CP}$ that I had betrayed him$_{\{i,*j\}}$]."

Observe that both subjunctive and indicative clauses look "finite" in the sense that they are inflected for tense and agreement. And yet, they are clearly distinct for the purposes of opacity effects. Under a purely binary classificatory system of finiteness, these grammaticality patterns would be difficult to capture: one would either have to relinquish the idea that they are a function of clausal finiteness, or one would have to find an independent way to account for the lack of opacity effects in the subjunctive structure in (27). Further complicating the picture is the fact, noted in Culy (1994), Speas (2004) and others, that languages systematically vary in the types of clauses that they allow long-distance anaphora into, with distinctions far more fine-grained than even the subjunctive-indicative

one. Some, like the Chadic language Mupun, allow long-distance anaphora only into the complement of speech predicates; others, like Tamil, allow long-distance anaphora into all clauses of all types, regardless of the modal, temporal, aspectual or agreement properties of the clause, and independent of whether the clause is embedded under a predicate via adjunction or subordination. In order to make such facts be somehow correlated to finiteness, one would need to heavily parametrize the notion of finiteness itself – an inelegant and arguably uninsightful result.

Finally, the utility of clausal independence as a window into finiteness is threatened by evidence showing that clauses are not simply divided into those that can stand alone and those that cannot. Rather, they seem to vary in subtle, and often complex, ways in the *extent* to which they can stand alone – i.e. qualify as independent root clauses. In other words, clausal independence itself seems to be a graded, not a binary, phenomenon. Hooper and Thompson (1973) test the independence of a range of embedded clauses by investigating the extent to which they can undergo root transformations, where a root transformation is defined as "one in which any constituents moved, inserted or copied are immediately dominated by a root in the derived structure" (Emonds, 1969). The evidence they unearth shows that root transformations such as VP-preposing, topicalization, tag question formation, and left-dislocation can apply to an embedded clause with a degree of ease that can be predicted by the nature of the predicate that selects that clause. For instance, they show that root-transformations apply most easily to complements of speech predicates, and least easily to those direct perception predicates, a fact that the examples below attest to:

(29) **Root transformation – VP preposing:**

a. Manu intends to marry her, and marry her he will!
b. Manu intends to marry her, and he says [$_{CP}$ that marry her he will!]
c. * Manu intends to marry her, but he doubts [$_{CP}$ that marry her he will!]

(30) **Root transformation – Negative constituent preposing:**

a. Never before had Sally seen such a crowd of daffodils.
b. Sally exclaimed [$_{CP}$ that never before had she seen such a crowd of daffodils.]
c. ?? Sally discovered [$_{CP}$ that never before had she seen such a crowd of daffodils.]
d. * Sally wondered [$_{CP}$ whether ever before had she seen such a crowd of daffodils.]

Thus, in the sentences above, VP-preposing, a root phenomenon (see (29a)), is grammatical under a speech predicate, as in (29b), but ungrammatical under a counterfactual one like that in (29c). Similarly, negative constituent preposing, also a root phenomenon (see (30a)), is most easily available under the speech-verb *exclaimed* in (30b) and is either pragmatically marked or outright ungrammatical under other types of verbs ((30c)-(30d)). Wiklund et al. (2009) extend Hooper and Thompson's insight to Scandinavian languages and use the possibility of embedded V2 in these languages to confirm the ordering above.

More directly, it is well known that clauses which pass all of the other diagnostics of being non-finite are allowed to appear as independent utterances under certain (often language-specific) circumstances. Consider in this light the English *wh*-infinitive in 31, the 'Mad Magazine' sentence in 32, and the Latin infinitive in 33:

(31) What to do?

(32) Me eat cheese curls? Never!

(33) Hominem-ne Rōmānum tam Graecē loquī?
man:ACC-PART Roman:ACC such Greek:ABL speak
'A Roman speak such good Greek? (To think that a Roman should speak such good Greek.)' (PLIN., *Ep.*, IV. 3, 5)

While this type of evidence doesn't necessarily negate the role of finiteness in clausal independence, it does show that simple correlations of the form: FINITE → INDEPENDENT and NON-FINITE → DEPENDENT, are neither useful nor insightful, but are tendential at best. Thus, both finiteness and clausal (in)dependence need to be redefined in more fine-grained terms in order for us to be able to draw accurate correlations between the two.

2.2 More recent advances

In recent years, there has been a move from identifying finiteness as a property of the inflectional (i.e. TP) domain, to one that is instantiated higher in the clausal structure, namely in the complementizer domain. Evidence for this position comes both from data suggesting a strong connection between the T and C layers and those illustrating that the choice of complementizer in a clause correlates closely with other diagnostics of its finiteness (Rizzi, 1997; Adger, 2007). A number of theoretical strategies have been proposed to account for the attested correlation between T and C. For instance, Pesetsky and Torrego (2001) propose that there is a syntactic dependency created as a result of T moving to C and, in

recent work, Chomsky (2008) argues that the relevant features on T, i.e. agreement and tense, are not inherent to T but inherited from C.

A different approach to this set of issues is set out in Rizzi (1997) (and much subsequent work), which proposes that finiteness is a structural primitive localized on a dedicated functional head, Fin, which appears low in an "expanded" C domain, at the boundary with an "expanded" Infl domain. In one sense, this is reminiscent of older approaches which, as we have seen, treated finiteness as a structural category realized on a single head, Infl. But in another, it differs substantively from these in (at least) two ways: first, finiteness is encoded on a functional head that is distinct from the loci of tense and agreement, and second, this head is placed in the C domain whereas the tense and agreement are held to be realized lower down, in the Infl domain. In other words, finiteness is a more abstract concept that is explicitly divorced from tense and agreement, thus allowing for mismatches between syntactic realizations of finiteness and tense and agreement marking. Proposing that finiteness is encoded in the C domain further allows us to draw correlations between the phasehood of a clause and its finiteness. For instance, the fact that subjunctives, but not indicatives, show transparency effects with respect to long-distance anaphora in Icelandic (see again exx. (27) and (28)) despite the fact that both are marked for tense and agreement, can be modelled within this system. Specifically, we could argue that Fin normally constitutes a phase boundary, but that subjunctive clauses, as in (27), either lack a Fin head altogether or have a featurally defective Fin which fails to mark a phase.[4]

Another striking and central aspect of Rizzi (1997) is the idea that syntactic structures are built out of a larger number of heads than was previously thought. This has the consequence that each head makes a smaller, but more clearly defined, contribution. What previously had been conceived of as a single head with a bundle of features (e.g. tense, agreement, and Case on Infl) now decomposes into a series of heads, each bearing perhaps only a single feature. This level of structural granularity allows one to more straightforwardly model the granularity in levels of clausal finiteness observed earlier. If we furthermore assume that this expanded structural inventory of functional heads is organized in a universal hierarchy, we can account for crosslinguistically robust observations pertaining to ordering restrictions between elements realizing these heads. The locus classicus for this kind of argumentation is Cinque (1999), which demonstrates, for a range

[4]Whether such an analysis ultimately proves to be the correct one can, of course, only be decided upon the careful examination of these and related data. The point we are making here is simply that this model provides us with the syntactic tools and vocabulary needed to deal with such empirical patterns.

of typologically unrelated languages, a consistent relative ordering of adverbs and their morphological counterparts in agglutinative head-final languages. For instance, adverbs in English are rigidly ordered according to the partial hierarchy given below (Cinque, 1999, 47):

(34) *frankly* > *fortunately* > *allegedly* > *probably* > *once/then* > *perhaps* > *wisely* > *usually* > *already* > *no longer* > *always* > *completely* > *well.*

Strikingly, this same hierarchy finds parallels, to a greater or lesser degree, in many other languages, for instance, those of the Romance family, Norwegian, Bosnian/Serbo-Croatian, Hebrew, Chinese, Albanian, and Malagasy, to name but a few. In a head-final language like Korean, this same ordering is reflected in the rigid linear sequence of verbal suffixes, as illustrated below Cinque (1999, p. 53):

(35) Ku say-ka cwuk-ess-keyss-kwun-a!
that bird-NOM die-ANT-EPIST-EVAL-DECL
"That bird must have died!"

Based on this type of data, Cinque proposes a *universal functional sequence* of heads in a clause, a portion of which is reproduced in (36):

(36) **Cinque Hierarchy:**
SPEECH ACT » EVALUATIVE » EVIDENTIAL » EPISTEMOLOGICAL.

The idea is that there is a designated position in a clause for the relevant adverbs which corresponds to the syntactico-semantic types of the predicates that they modify. Each of the functional heads in (36) makes a well-defined contribution to the compositional semantics of the clause, and either the head itself or an adverbial in its specifier can be realized by a piece of morphosyntax in a position that c-commands the realization related to any head to its right in the hierarchy.

Let us consider the potenial relevance of this model for a theory of clausal finiteness. We observed above that the availability of root phenomena in embedded clauses is sensitive to the nature of the selecting predicate: specifically, that it is most easily available under speech predicates and least easily under direct perception predicates. Culy (1994), reporting on a study of thirty-two different languages, shows that long-distance anaphora into clauses also obtains most easily into clauses embedded under speech verbs and least easily under direct perception verbs. Based on this type of evidence, Speas and Tenny (2003) incorporate the Cinque model into an account of clausal selection, proposing that different predicates select for different portions of the functional sequence given in (36). Thus, a speech predicate, like 'say' would select a clause of the largest size, one that specifically included a SpeechActP and all the other phrases below it on the

Cinque Hierarchy. On the other hand, a clause selected by a direct perception predicate like 'hear' would be the smallest, containing at its root the Epistemological Phrase. This model seamlessly extends into lower portions of the clausal hierarchy involving the inflectional domain, where we might expect to find heads like Rizzi's Fin, as well as those responsible for tense, mood, agreement, and aspect. This gives us a natural way to reconfigure finiteness, not as a binary property, but as something that is scaled or graded. At its simplest, this means that a clause with more structure is more finite than one with less. This is an extension of the traditional proposal that finite clauses are CPs while at least some infinitives are TPs. This basic dichotomy has been extended to a wider array of clause types and corresponding sizes, for example by Wurmbrand (2001) and is explored further in several of the contributions to this volume.

But while attractive, this approach, known as cartography, is not without its challenges. One potential shortcoming is the proliferation of syntactic projections, in theory without an upper bound. If there is no way to restrict the number of heads in the syntax, we could potentially "explain" every recalcitrant fact by, so to speak, simply throwing a few more heads at it. Concomitant with this is the issue of learnability: if the functional sequence grows to be too large, it is difficult to imagine that it will be completely innate, but at the same time, it's hard to see how it could be learned if the sequence is supposed to hold universally across languages. Another potential problem is that of overgeneration. Splitting up categories like Infl into a series of component parts allows us to handle mismatches, e.g. between agreement and other potential fingerprints of finiteness, such as agreement marking and subject reference, as discussed above. However, this same decomposition potentially undermines our ability to explain systematic empirical *correlations* between those same categories. To give a concrete example, there is nothing in the classic cartographic model that automatically derives the correlation, attested in so many languages, between the temporal interpretation of a clause and the referential independence of the subject, since these are handled by distinct heads. In other words, the system, taken by itself, is too powerful and needs to be restricted in some way.

A potentially attractive solution to these issues is to assume that there is a semantic underpinning for the clausal functional sequence. Many recent proposals, such as Bianchi (2003); Sigurðsson (2004) and Ritter and Wiltschko (2009), have explored the idea that finiteness be represented in terms of anchoring conditions on a clause, either to the utterance context or with respect to the intensional properties associated with the embedding clause. Svenonius (2008) and Ramchand and Svenonius (2013) explicitly frame such a discussion within the context of how

the functional sequence maps onto the semantics. This strategy can potentially alleviate, or perhaps even entirely eliminate, the overgeneration problem by placing externally motivated restrictions on the inventory, ordering, and interaction of specific heads. Specific proposals about the details of the sequence should have testable semantic consequences, in addition to the more familiar morphosyntactic ones, allowing us to rule out a number of the logical possibilities that do not seem to arise. However, while this idea is attractive in theory, progress in implementing it in practice has been slow thus far, a point which Ramchand and Svenonius (2013) explicitly discuss. An important open question for the cartographic approach in general, and its application to finiteness in particular, is the extent to which it can be successfully grounded and constrained.

3 The papers

The South Asian languages offer a fertile ground for investigations of finiteness. As noted above, they remain relatively understudied in the theoretical literature and, as we will see, present a challenging set of morphological, syntactic, and semantic patterns in the behavior of their embedded clauses. The contributions to this Topic…Comment special issue offer a series of investigations of the pressing theoretical issues surrounding finiteness described above and an infusion of novel data from an array of South Asian languages that help to further shape our understanding of the phenomenon. As noted above, ten of the contributions are organized as pairings of an original Topic article with an associated Comment article. The original articles examine specific phenomena related to finiteness, typically within a single language or small group of languages, but relate them to broader theoretical concerns. The commentaries, rather than simply responding to and critiquing the original articles, take those articles as a starting point for a more wide-ranging discussion, often bringing in additional languages and trying to tackle the bigger theoretical questions. The eleventh contribution is a stand-alone article on finiteness in the Dravidian languages which has clear points of contact with several of the other contributions. Given the coherent and well-defined topic, the papers are tightly integrated with each other and show numerous points of contact. We have ordered them in this volume in a sequence which allows us to highlight some of what we see as the more important connections, and we will introduce them here in that same order so that those connections can be explicitly pointed out.

Madelyn Kissock's contribution, "Evidence for 'finiteness' in Telugu, tackles

one of the trickiest parts of working with finiteness – defining what exactly finiteness is, how different levels of finiteness can be identified, and what direct relevance the notion has for the grammar of specific languages. Focussing on Telugu, a Dravidian language, she argues that the traditional diagnostics of finiteness in terms of the morphological marking of tense and agreement fail to pick out a unified class of clauses with a consistent set of syntactico-semantic behaviors, in this language. She then looks for evidence in the language of one of the prototypical syntactic correlates of non-finiteness, namely (obligatory) control, where the subject of an embedded clause is typically unpronounced and must have its reference determined by an element in the matrix clause. She argues that even in sentences that at first appear to fit this pattern in Telugu, the unpronounced subject does not show the behavior characteristic of obligatorily-controlled PRO – e.g. it is not obligatorily coreferent with a matrix argument, is not interpreted obligatorily *de se*, and allows both strict and sloppy readings under ellipsis. Kissock thus proposes that all such null subjects should be analyzed as *pro* in Telugu, concluding, by extension, that the language lacks control entirely.

Given the lack of its prototypical morphological and syntactic realizations, one might thus conclude that finiteness is entirely lacking from Telugu, as well; i.e. that there is no such category in the language that the grammar makes reference to. However, Kissock then considers one last way of defining finiteness, and argues that it actually does identify a real distinction in Telugu. In particular, as we have noted above, prototypical non-finite clauses are unable to stand on their own, and must instead appear embedded in some larger clause. Prototypical finite clauses, on the other hand, are able to constitute independent, complete utterances. This seems to be an expression of the fact that fully finite clauses contain information necessary to anchor them temporally and referentially to the context of a speech event, while non-finite clauses lack this information and thus depend on a higher clause for their anchoring. Kissock shows that there is a real distinction in Telugu between clause types that can stand on their own and those that cannot, and furthermore that there are additional diagnostics that are sensitive to this distinction, e.g. the ability to be coordinated. Thus, finiteness in Telugu is a substantive and useful notion, but we must reject the traditional definitions in terms of tense and agreement morphology and properties of the subject in favor of a more abstract one in terms of anchoring and the potential for independence.

In her commentary on Kissock's contribution, entitled "Making sense of silence: Finiteness and the (OC) PRO vs. *pro* distinction", **Sandhya Sundaresan** examines more closely the status of silent subject positions and how they relate to finiteness. She takes as her starting point Kissock's arguments about the OC PRO

vs. *pro* status of the silent subject in Telugu clauses that appear to be non-finite, and breaks the question down into more basic terms. One important thrust of the paper is that it is important to keep the question of whether the subject is silent or pronounced separate from that of its referential properties in the syntax and at LF. Sundaresan's point is that what defines instances of control is not the (obligatory) silence of the subject position, but a particular collection of interpretive properties that Landau (2013) summarizes as the OC Signature. Specifically, OC PRO always requires a syntactic antecedent (its "controller") and is always variable bound at LF; *pro*, on the other hand, can refer deictically. Once this foundation has been established, Sundaresan takes a closer look at the data from Telugu. She ultimately argues contra Kissock that in fact in at least some clause types, the language might have controlled PRO, after all.

Sundaresan then turns to another issue for the discussion of PRO vs. *pro*, which arises in cases where OC PRO seems to be in alternation with overt, non-coreferent subjects in a single clause type. A series of such cases were discussed in Sundaresan and McFadden (2009), which was concerned in large part with the implications that these alternations have for theories of finiteness and subject distribution. Traditional approaches to the distribution of PRO in terms of Case run into trouble in the face of these alternations because they are built in part on the assumption that PRO and overt, non-coreferent subjects are in complementary distribution. Kissock suggests that the standard theories are actually on the right track here and that, in fact, what we are seeing in the relevant examples is an alternation between overt subjects and *pro*, but where the discourse context leads to interpretive effects that mimic those with controlled PRO. Sundaresan re-examines clauses of this type from the perspective of the interpretive diagnostics for OC PRO that she established in the first part of her paper. She looks in greater detail at the original examples from Tamil discussed in Sundaresan and McFadden (2009), but also introduces similar data from a series of other subject *pro*-drop languages, including Spanish, Italian, Hindi, Hungarian, Romanian and Japanese, and concludes that all of them show clear evidence not just for alternations between PRO and overt subjects, but for the impossibility of *pro* in those same clauses. The puzzle that remains is how *pro* could be blocked in such instances, given that the subject can be non-coreferent in these same clause types when it is overt, and given that these languages are known to allow *pro*-drop in other types of clauses. Based on the distribution of the different null subject types that she observes in these languages, Sundaresan preliminarily suggests that this is ultimately an effect of finiteness distinctions across clause types and may be somehow related to the often observed relationship between rich agreement and *pro*-drop across languages

(i.e. Taraldsen's Generalization, see Taraldsen, 1978).

The second original article in this special issue – "The role of tense and agreement in the licensing of subjects: evidence from participial clauses in Bangla" by **Priyanka Biswas** – is also heavily concerned with the distribution of subject types across different types of clauses, and in particular the question of whether particular null subjects are OC PRO or *pro*. Biswas discusses the behavior of five different clause types built around participial forms in Bangla, which show a mixture of different behaviors with respect to their temporal interpretation and the types of subjects they allow. She presents evidence from the placement of negation that all five clause types are non-finite, not just in the morphological sense that they lack tense and agreement marking, but also in their syntactic behavior. Beyond this, however, their behavior differs. All five types allow a null subject, but the conditional and temporal adjuncts additionally allow overt subjects. The question that arises then, just as in Kissock's paper, is the nature of the empty subjects in such clauses. On the one hand, since all of the clause types are non-finite in a way that has syntactic consequences, one might expect them all to be OC PRO. On the other hand, since Bangla is a *pro*-drop language, it is also possible that at least some of the empty subjects are *pro*.

Thus, like Kissock, Biswas carries out a series of interpretive tests to determine the nature of the empty subject in the five participial clause types. Her conclusion is that those clause types which do not allow overt subjects (the perfective and purpose adjuncts and the complement clauses) have OC PRO, while those which show an alternation with overt subjects actually have *pro*. The evidence again comes from coreference possibilities, the availability of strict and sloppy readings under ellipsis, and the distribution of *de se* and *de re* readings. Biswas then proposes an account for the observed distribution of subject types in terms of Landau (2004)'s calculus of control. Specifically, she argues that most of the participial clause types in Bangla have [-Agr] specifications, as we might expect from their lack of morphological agreement, and thus license only [-R] subjects, i.e. PRO. The conditional and temporal clauses, however, are specified [+T, +Agr], hence license overt and *pro* subjects. These clauses don't show overt agreement any more than the others, but Biswas proposes that the [+Agr] specification here is not related to simple ϕ features, but rather to properties of the tense of the matrix clause. She shows, namely, that the temporal clause can only appear below matrix clauses with episodic tenses, while the conditional clause can only occur below those with non-episodic ones.

"On subject reference and the cartography of clause types", by **Thomas McFadden**, takes this theoretical treatment of the different participial clause types

as its starting point. McFadden accepts the essential points of Biswas' analysis, her determination of the PRO vs. *pro* status of the null subjects, and the proposed relationship between the temporal interpretation of a clause type and the kind of subject(s) it allows. He takes issue, however with the specifics of how the analysis is implemented and, in particular, with the use of abstract Agr features to model crucial differences between clause types. As we saw in the discussion surrounding 17 above, Agr features are an important part of Landau's theory of control, helping to derive the distribution of PRO subjects. McFadden argues that the problem with Landau's theory, which carries over directly into Biswas' paper, is that, unlike abstract T features, which have interpretive effects that can be tested for, abstract Agr features essentially have no effects except for the distribution of subject types. Agr features can thus be posited or not posited, as needed in order to describe the facts but, for that same reason, lack any real explanatory power. He thus argues that a new kind of theory of embedding subject distribution is required. This will have to subsume the clear relationship between the referential properties of those subjects and the temporal interpretation of the clause embodied in Biswas and Landau's reliance on T features, but must also find something to replace the abstract Agr features in their work with something that is independently identifiable and makes non-trivial, testable predictions. It must, of course, also be able to accommodate the array of data on finiteness and subject distribution amassed by works like Raposo (1987); Wurmbrand (2001); Landau (2004); Sundaresan and McFadden (2009), and Biswas' contribution itself, all of which point toward treating finiteness as a graded, rather than binary, concept.

McFadden then lays out a programmatic view of such a theory, based on the idea that degrees of finiteness, or rather degrees of dependence or independence of an embedded clause on the matrix, correspond to different structural sizes for the embedded clause. The central advantage of such an approach is that, unlike a theory that is framed in terms of bundles of unordered features on a smaller number of heads, it can derive implicational relationships between different clausal properties in a straightforward structural way. If we assume that the functional sequence is universal and monotonic (i.e. no gaps are allowed), but that a given sequence can be truncated at the top, then if property X is realized in a head above property Y in the sequence, every clause showing property X should also show property Y. McFadden explores this approach by applying it to the different levels of referential dependence of subjects observed in different clause types. Specifically, he looks at the three distinct classes identified in an array of languages by Sundaresan and McFadden (2009): anaphoric clauses, which allow only controlled subjects, independent clauses, which allow only non-controlled subjects,

and dependent clauses, which show an alternation between the two types. He makes a specific proposal for a series of heads in a stretch of the functional sequence that can derive these patterns of behavior based on how they interact with the interpretation of anaphoric and non-anaphoric subjects, and then shows how the different participial clause types identified by Biswas in Bangla, as well as the English and Tamil clause types discussed by Sundaresan and McFadden (2009), can be made to fall out of the proposed hierarchy.

The next pairing is also concerned with the proper analysis of specific non-finite clause types, including the question of whether distinctions between clause types correspond to differences in the size of the structure they embody. The primary empirical focus of the papers is quite specific – the clausal complements of *de-na* 'allow' in Hindi-Urdu. In her original contribution, entitled "Non-finite complements and modality in *de-na* 'allow' in Hindi-Urdu", **Alice Davison** argues that there are two distinct types of complement to *de-na*, which represent two distinct structures. One, which she paraphrases as 'allow X to do A' (as in 37a), involves (object) control under her analysis. The other, paraphrased as 'allow A to happen' (as in 37b), she analyzes as involving ECM:

(37) a. mã =ne bɑccõ =ko kɪtab -ẽ pɑɽ^{h} -ne dĩ
mother =ERG child.M.PL =DAT book -F.PL.NOM read -INF give.PF.F.PL
'Mother allowed/let (the) children read (the) books.'

b. pɪta =ne per kɑṭ -ne di -e
father =ERG tree.M.PL[NOM] be.cut -INF.OBL give -PF.M.PL
'Father allowed the trees to be cut.'

The evidence for the control structure comes from similarities to uncontroversial object control predicates in terms of thematic roles, case marking, restrictions on lexical case-assignment, and reflexive binding. Arguments for the ECM structure comes from examples where there is no realized locus of permission which could be controlling a PRO in the embedded clause, and from the pattern of case-assignment on an overt embedded argument, which indeed appears to be getting accusative case from the matrix clause. A further difference between the two clause types is in their modal interpretation. In the control structure, there is a DP which corresponds to the locus of permission whereas, in the ECM structure, the locus of permission is either absent or is part of the discourse context. Thus in effect, in the ECM structure, it is the embedded event that is allowed to happen, whereas in the control structure, it is the matrix object who is allowed to make the embedded event happen. Davison then argues that the embedded clause in the control cases must be a CP, or at least a TP, with the ability to license case

on PRO. The ECM cases, on the other hand, involve either a defective TP with no case-licensing abilities or, more likely, an even smaller AspP. Finally, Davison considers an alternative analysis of the permissive construction with *de-na*, due originally to Butt (1995), according to which it is a monoclausal complex predicate. She casts doubt on this account, which had not dealt with the 'allow A to happen reading', by presenting some additional evidence that the *de-na* examples are in fact biclausal, as her own control and ECM analyses imply.

Miriam Butt, in "Control vs. Complex Predication: Identifying Non-finite Complements", considers the new set of facts introduced by Davison, in particular regarding the two distinct readings for the complements of *de-na* 'allow', but concludes that her original 1995 complex predicate analysis can be extended to handle them. Butt's contribution provides an especially interesting comparison because she operates within the LFG framework, whereas Davison and the other contributors to this volume all adopt (various versions of) Minimalism. The distinction is in fact crucial, as Butt's account of differences in embedded clause types makes use of a mechanism which is available in LFG but not in Minimalism. She notes, as we have discussed above, that different types of embedding are typically modeled within Minimalism in terms of clauses with differing amounts of functional structure in a highly articulated left periphery. LFG, on the other hand, adopts a less granular inventory of syntactic heads, in large part because only a subset of the relevant grammatical properties and relationships, namely those essentially related to surface constituency and ordering, are modelled in terms of c(onstituent)-structure. Additional dependencies and relationships are modeled at f(unctional)-structure and a(rgument)-structure. This means that LFG has the option of implementing embedding at different levels of grammatical structure. In particular, Butt proposes that control involves embedding at f-structure, but complex predication is realized at a-structure, with monoclausal f-structures and c-structures.

Butt begins her contribution with an overview of the properties of Hindi-Urdu that are relevant to present concerns, including the marking of tense and agreement, the system of clausal complementation, and the case-agreement system. Against this backdrop, she then discusses complex predication, showing how it is distinct from control/raising, and lays out the basics of the LFG account of the difference, according to which the former is monoclausal while the latter is biclausal. This then leads to arguments in favor of taking the permissive construction with *de-na* to be, in fact, an instance of complex predication, rather than a control or ECM structure, as argued by Davison. The evidence she presents comes from anaphora resolution, agreement, NPI-licensing, restrictions on lexical case assign-

ment and control possibilities. Butt then develops her complex predication analysis in more detail, elucidating linking theory within LFG and showing how it will apply properly in both the 'allow-to-do' and 'allow-to-happen' versions of the permissive. She concludes with more general discussion of different levels of cohesion in clausal embedding, making a plea for a richer inventory of distinct embedding types and considering briefly how the different types might be implemented in Minimalist terms.

The next pairing in this special issue is also concerned with the structure of the left periphery of embedded clauses, and with different ways in which cohesion with the matrix clause can be expressed. Rather than involving a detailed consideration of a particular construction in a single language, however, the concern here is a much broader one: the nature and representation of finiteness in the Dravidian languages and how it interacts unexpectedly with other properties of the clause. "Coordination, Relativization and Finiteness in Dravidan", by **K.A. Jayaseelan**, begins with a series of observations about clausal categories which are in complementary distribution in Dravidian. Specifically, while the verb can show subject agreement, this agreement disappears in the presence of a modal or when the clause is negated.[5] At the same time, the normal marker of negation is incompatible with modals. Furthermore, clauses bearing any one of these markers cannot be conjoined, nor can they be relativized. That is, conjoined clauses and relative clauses must be non-finite. This set of properties clearly distinguishes the Dravidian languages from most familiar languages, where agreement, negation and modality freely combine, and clauses bearing any combination of the relevant markings are able to be coordinated and relativized. Jayaseelan proposes to deal with this cluster of properties by positing a 'narrow' C domain for the Dravidian languages. That is, where other languages have an articulated C domain containing a series of functional heads which can be realized independent of each other, several such heads are compressed together in a single position in Dravidian. Jayaseelan labels this position Mood and places it roughly where Rizzi (1997) placed his Fin head. This is the locus of finiteness, which in Dravidian languages is normally realized as a modal or as agreement. However, if the sentence is negated, a marker (*illa/ille*) is generated as the head of NegP, but raises to and incorporates the head of MoodP. The heads responsible for Relativization and Coordination compete for this position as well, preempting MoodP (and each other) when they are present. It is important to note that what have typically been taken

[5]Of the four literary Dravidian languages, this strictly applies only to Kannada, Tamil and Telugu. Malayalam lacks verb agreement, but it behaves the same as the other three languages on the remaining points of complementary distribution.

to be tense markers in the Dravidian languages appear in a position that is below MoodP and thus (subject to certain restrictions) can co-occur with the categories competing for that position. Jayaseelan argued that these markers are, therefore, strictly independent of finiteness and appear, in fact, to realize aspect rather than tense: in other words, Dravidian languages lack a syntactic T projection entirely, as was originally argued by Amritavalli and Jayaseelan (2005).

Note, however, that even the Dravidian languages show evidence for some articulation of the C domain. There is a position for a question or correlative marker above that of MoodP/RelP/CoordP, which Jayaseelan identifies as Force. Hence it is possible to form questions from all of the clause types that are in competition with each other. Furthermore, all of these structures can be embedded under the so-called 'quotative' complementizer. As Jayaseelan notes, however, in the Dravidian languages, this marker can embed all sorts of elements, not just clauses, thus there is good reason to think that it occupies a rather high position in the structure outside of the traditional C domain. As regards the broader theoretical interpretation of the narrow C domain of Dravidian, Jayaseelan relates this to the proposal in Chomsky (2008) that the features of T are inherited from C and, further, that the enriched left periphery posited by Rizzi (1997) is in fact the result of feature spread from a single phase head C. If Force, Topic, Focus, Fin and T are really just structural manifestations of features originating in one C head, it is not so strange to propose that languages can differ in the number of distinct positions that are so created. As Jayaseelan points out, this also puts Amritavalli and Jayaseelan (2005)'s claim that Dravidian lacks T in a more favorable light, since it can be understood as part of a general tendency for C not to spawn new positions in the languages.

In his response, entitled "Coordination and finiteness in Malayalam", **Rajesh Bhatt** tries to make sense of the Malayalam facts discussed by Jayaseelan differently, in terms of subcategorization. Bhatt commences the paper with the observation that patterns of complementary distribution of linguistic elements can, in principle, arise in a number of different ways. The most popular analytic strategy since the days of structuralism has been competition i.e. the idea that the two elements in complementary distribution are in fact distinct realizations of the same underlying category or structural position. This is of course the strategy that Jayaseelan adopts to analyze the complementarity of certain clausal properties in Dravidian. A different possibility, however, is that two elements A and B do not co-occur because A specifically selects for something distinct from B. As an example of the latter he gives the facts in 38 from English showing that prepositions don't co-occur with finite declaratives:

(38) a. * You can depend on that John will be late.
b. You can depend on it that John will be late.
c. You can depend on John's being late.

Rather than attributing the ungrammaticality of 38a to P and finite C occupying the same position, we can say that P selects for something nominal, which finite C is not.

Bhatt follows Jayaseelan's explanation in terms of structural competition for the complementarity of agreement, modality, negation and relativization, but proposes that the incompatibility with coordination has a different source. Specifically, he argues that the coordination marker *-um* in Malayalam and the other Dravidian languages selects for nominal categories, and the various types of finite clauses do not count as nominal, thus cannot be coordinated. Non-finite clauses can be successfully coordinated, but given independent evidence that they are nominal, this fits in just fine with the subcategorization proposal. Bhatt then considers how this approach fares in handling the strategies that the Dravidian languages adopt to deal with the ban on finite clausal-coordination, which, he argues, bear a certain resemblance to English *do* support. Finally, he discusses the relevance of the polysyndetic nature of the coordination marker *-um* (i.e. the fact that it can potentially appear on all conjuncts) for the structure of coordination in general, and examines its connections with a homophonous focus marker.

Interactions between finiteness and negation are also central to the fifth and final pairing in this special issue. In "Finiteness, negation and the directionality of headedness in Bangla", **Andrew Simpson** and **Syed Saurov** examine the ordering of the negation marker relative to finite and non-finite verbs in this language, and the implications this has for head directionality and verb movement. The basic pattern in Bangla is that the negative marker *na* follows the verb in finite clauses, but precedes it in various types of non-finite ones. Simpson & Saurov observe that this is initially reminiscent of the well-known pattern in French, which has been taken as evidence that the finite verb in that language raises across negation to a higher position in the functional structure of the clause, whereas the non-finite verb remains in a lower position (Pollock, 1989). The crucial difference with French, however, is that Bangla in general is a fairly strictly head-final language, with the verb surfacing at the right edge of the clause, rather than in the middle or left periphery. As Simpson & Saurov show, it turns out to be extremely difficult to get the Bangla V-Neg ordering facts to fall out of leftward movement of the finite verb from an underlying head-initial structure, as we might be inclined to assume following the proposals of Kayne (1994) and subsequent work in the antisymmetry tradition. What they propose instead is that Bangla is in fact underlyingly head

final, with no leftward head movement. The difference in position of the negative marker results from an alternation, not in the surface position of the verb, but in where the marker *na* is inserted. In both cases, NegP is projected above the VP, but in finite clauses *na* spells out the head position, which follows its VP complement, while in non-finite clauses *na* is pronounced in Spec-NegP, which precedes the VP. While postulating an alternation between head and specifier for the same element seems, at first, blush unorthodox, Simpson & Saurov present evidence from language comparison, from language change, and from other elements in Bangla itself, like the question particle *ki* and the conditional marker *jodi*, to suggest that such alternations are, in fact, widely attested.

In "Deriving variable linearization", **Gillian Ramchand** proposes an alternative analysis of the Bangla word-order facts, which she embeds in a broader consideration of the notion of finiteness relevant for the observed distinction. Ramchand first considers the collection of distinct clause types that show pre-verbal negation and are thus considered 'non-finite'. She notes that they cannot be unified in terms of traditional finiteness diagnostics like tense/agreement marking and subject licensing, since the different types show all different combinations of these properties, yet all follow the negative particle *na*. What they do have in common, she argues, is that none of them can constitute an independent utterance, a point that, incidentally, parallels closely the conclusion Kissock reaches for Telugu. Rather, they all must be embedded in a matrix clause, which they depend on for anchoring. Ramchand interprets this to mean that all of these clause types lack a Fin head that is independently anchored to the speech event.

She then takes issue with the analysis of Neg-V orders proposed by Simpson & Saurov, and in particular their reliance on the variable appearance of *na* as either the specifier or the head of NegP. Acknowledging the difficulties faced by a Kaynean head-initial analysis of the Bangla facts, she points out a series of general problems for the alternative idea that head-initial and head-final structures are essentially symmetrical. She argues that we should adopt a universal asymmetric underlying base for all languages, but that surface word order differences should not be derived in terms of special word-order movements. Instead, she proposes that we adopt a theory wherein the linearization properties for a given language are directly read off of the underlying structure. That is, in place of Kayne's universal LCA, we have parametrized statements describing how hierarchical structures are mapped onto linear orders. Her specific proposal for the Bangla facts builds heavily on Brody (2000)'s Mirror Theory, and assumes that Neg in Bangla is located directly above Fin. Ramchand then provides language-specific word-formation statements for Bangla, stipulating that Neg forms a word with Fin, Fin

forms a word with T, and so on, down the (cartographic) clausal spine to the verb. In Mirror theory, this implies that Neg will be realized as a suffix to Fin, which will be a suffix to T etc., deriving the post-verbal position of Neg in finite clauses. What happens in the relevant group of non-finite clauses is that they lack the Fin head, meaning that Neg will not end up in the same morphological word as the verb and its various functional dependents. Hence, in this case, Neg and V will not be spelled out in mirror order, and instead *na* will appear pre-verbally.

The final paper in this special issue also considers finiteness in the context of its role in anchoring a clause to the speech act. In "Separating tense and finiteness: anchoring in Dravidian", **R. Amritavalli** examines the way that finiteness is manifested in languages that seem to lack a syntactic representation of tense. She begins by questioning a series of common assumptions in current syntactic theory that attribute a crucial role to tense in the definition of finiteness, assignment of nominative case, licensing of subjects and semantic interpretation. In the course of the paper, she undermines all of these assumptions on the basis of evidence from the Dravidian languages and several others. Perhaps most importantly, Amritavalli argues that the defining feature of finiteness is actually event anchoring, and that, although this is often accomplished by temporal means, it can also be done in terms of mood, location or person (as also argued for by Ritter and Wiltschko, 2009). Building on Amritavalli and Jayaseelan (2005) with new evidence, she argues that, in the Dravidian languages, anchoring is in terms of mood. What appear to be tense markers are in fact realizations of aspect, which are actually independent of finiteness. This is why certain clauses which otherwise seem finite can lack the 'tense' marking (e.g. in the presence of negation). As to why they must lack that marking, Amritavalli proposes that the tense-aspect markers in the Dravidian languages are actually Positive Polarity Items which cannot scope under negation. She uses these building blocks to explain differences among the four literary Dravidian languages, in particular in the tense/aspect marking and temporal interpretation of the negated verb forms. Finally, she notes the availability of nominative subjects in Dravidian in clearly non-finite clauses like those built around gerunds. While she does not offer an account of the distribution of the nominative, it clearly constitutes one more case where, contrary to standard theoretical assumptions, tense turns out not to be morphosyntactically relevant in the Dravidian languages.

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