Case Valuation by Phase

Phil Branigan
Memorial University

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Abstract

It is shown that Structural Case features are not present in the lexicon or supplied to "Case-assigners" in the numeration and that Case valuation is not a direct bi-product of AGREE. Instead, unvalued Case features are valued derivationally on the head of a phase at the phase level. Φ-feature valuation under AGREE produces structures in which features are shared between probe heads and their goal targets. In this model of structural Case valuation, a principled account of a plethora of problematic constructions becomes available, including Balkan-style ECM with subjunctive complements, Latin deponent verbs, English ECM with *want*-verbs, and Icelandic quirky case subjects.

1 Introduction

Conventional Case theory, since Chomsky (1980), has generally adopted the assumption that the properties of "Case assigners", such as T and verbs, are present in the lexicon, and as such, are available (and largely immutable) from the point of entry of a lexical item into the syntactic derivation. It is this premise which I examine, and challenge, in the present work. In its place, I will show that a more comprehensive account of Case checking/assignment operations can be constructed by supposing that some (in fact, most) Case features are supplied to "Case-assigners" in the course of the derivation. More precisely, I will argue that structural Case "assignment" is an operation on phases which supplies a value for an unvalued Case feature in the head of a phase, and nowhere else. This approach to the problem of Case is both conceptually simpler and empirically more defensible than models proposed elsewhere in the literature.

Let me begin by pointing out some of the outstanding problems in Case theory. For the most part, these are well understood, so I will aim only at a cursory review. The problems, as usual, are in part conceptual and in part empirical, with no clear boundary between the two.

In the standard model, structural Case features are part of the featural make-up of T, *v*, P, etc. As Pesetsky and Torrego (2000) observe, this starting point for Case theory is somewhat problematic, because there is no natural explanation for the fact that Case features—which are morphologically expressed on nouns and adjectives—should exist at all in T, v, or P. Their answer—that Case features are actually interpretable within T and the other Case-assigning

heads—is inconsistent with the idea that heads enter into Case relations to check uninterpretable features, so it requires some complication of the theory of checking.[1]

The notion that structural Case is a property of T, v, and P is also problematic on more concrete grounds. Inherent Case features are clearly properties of individual lexical heads, and inherent Cases therefore vary arbitrarily with the heads which bear them. In languages where Case morphology is rich enough to tell the difference, some verbs value inherent dative Case while others value inherent genitive, or instrumental, or locative. The same is true of prepositions: different prepositions will value different Cases.

Nothing of the like is found with structural Case. Consider the Case valued by finite T, for example. Finite T can be past, present or future in many languages. But there are no languages attested (to my knowledge) for which past T values a different Case than future T. (I put to the side the issue of split ergative languages like Hindi, where an ergative pattern is found in perfectives but a nominative pattern persists in other tenses. In the Bobaljik and Branigan (2004) approach to ergativity, T will check nominative in both ergative and nominative Case patterns.) The fact that structural Case properties cannot vary with the choice of T requires an explanation. And the same is true of *v*, which checks accusative Case both when it is agentive and when it is not.

Another question arises when we consider the relationship between inherent and structural Case. It appears to be true universally that structural Case valuation does not take place when inherent Case is available. Verbs with inherent Case features do not have the option of valuing Case structurally. We could imagine that language would pattern otherwise, though. There is nothing in the structure of Case theory which would prevent inherent Case features on a verb or preposition from being used as a last resort Case valuation strategy, which would then be activated only when the conditions for structural Case valuation failed to be satisfied. If both structural Case and inherent Case originate as features of individual heads, then any conflict in how they are used might in principle be resolved in either of two ways. The fact that inherent Case always wins out needs to be derived on principled grounds.

Finally, there is a well-known problem in Case theory involving contexts where too many Case valuation possibilities arise. This issue has been addressed in several recent works, including Schütze (1997) and Bejar and Massam (1999). The situation can be seen most clearly in ECM with finite complement clauses, as is notoriously possible in a number of Balkan languages, such as the Romanian (1), from Rivero (1991).

(1) a. Am vrut ca cineva să citească cartea
I-have wanted that somebody SUBJ *read book-the*
'I wanted somebody to read the book.'
b. Am vrut pe cineva să citească cartea
I-have wanted to somebody SUBJ *read book-the*

(The preposition *pe* in (1-b) is an accusative marker for the following DP. There is no visible

[1]The major empirical results of Pesetsky and Torrego are actually independant of the idea that T has an interpretable Case feature. cf. Branigan (2004) for discussion.

complementiser in the (1-b) sentence, possibly because the complement clause is a bare TP structure.)

T in subjunctive clauses in Romanian is evidently able to assign nominative Case to the subject in Spec-T, as in (1-a). This is as one would expect, since finite T normally has the features necessary for nominative Case assignment. But the subject shows up with accusative Case features in (1-b), apparently by virtue of Case assignment by the matrix verb. The usual diagnostics for ECM confirm that the matrix verb is indeed responsible for accusative Case here; passive morphology on the matrix verb takes away the option of using accusative Case on the downstairs subject, for example (Grosu and Horvath, 1984; Rivero, 1991).

Work on this problem has tended to draw either of two conclusions from data like (1). One body of literature has it that nominative Case is assigned by T only optionally in Balkan subjunctive complement clauses, and that a sentence like (1-b) is possible when the matrix verb checks accusative Case only because the subject of the complement clause would otherwise fail to be assigned Case. Under such an approach, subjunctive complements can optionally pattern with infinitival complements to bridge verbs in languages like English. This is the approach taken by Rivero (1991) and Iatridou (1993).[2] But this approach overgenerates. It implies that nominative Case should always be available for the subject of the complement clause. But this is false in the case of Romanian complement clauses which lack C:

(2) *Am vrut cineva să citească cartea
I-have wanted somebody SUBJ *read book-the*
'I wanted somebody to read the book.'

The second problem with this approach is the computational demands it imposes on the derivational process. The properties of subjunctive T are not imposed in the numeration by an invariant algorithm, but are instead to be determined after the fact, by establishing whether the subject will have an alternative source for Case-feature checking. The look-ahead is limited, since the presence of a verbal Case-checking source will always be established soon after TP is complete, but the computation is nonetheless not optimal.

The problem with the optionality of Case in T is mirrored by a familiar issue in the Case properties of the matrix verb. The verb *vrut* in (2) must be able to check accusative Case in (2-b), but not in (2-a). Assuming that verbal Case features are uninterpretable, this implies that two variants of the verb are available for the numeration to select from: one with a Case feature, and one without. And selection of the correct variant will depend on the internal properties of the complement clause, i.e. whether or not an appropriate T has been chosen to check nominative Case.

Again, the computational demands are not excessive, since the correct form of the verb can always be determined locally, but the system design appears to be less than optimal. If our model of Case valuation should aim at optimal system design, then this aspect of Case theory needs to be revisited.

[2]For Iatridou, a failure of Case checking results when tense features are absent from T (=Infl).

The other response to this data has it that subjunctive T always assigns nominative Case to its specifier, but Case can be assigned multiple times to a single target DP. Schütze (1997) develops this type of analysis in a treatment of Icelandic ECM structures, and suggests that the treatment extends other constructions in other languages, including Balkan-style ECM, as well. Bejar and Massam (1999) make a similar claim for parallel cases in Hungarian, Niuean, and Latin.[3] While this alternative approach accounts for tricky data like the Balkan ECM cases, it can provide no explanation for the contrast in (3) in Icelandic.

(3) a. Skessuna vantar mat. (Andrews, 1990)
the giantess-ACC *lacks* *food*-ACC
b. *Skessuna vantar matur
the giantess-ACC *lacks* *food*-NOM

In (3-a), the subject bears quirky Case by virtue of the special properties of the verb *vantar*. Assuming that quirky Case is valued *v*P-internally, it follows that T does not use up any nominative Case feature in this sentence. Therefore, T should be able to use its nominative Case feature to value another DP in the sentence. The object DP in (3-a) is valued with structural accusative Case by the verb. But if Case can be valued multiple times on a single DP, then it should be possible–and even preferable–for T to re-value the object with nominative Case. The ungrammaticality of (3-b) shows this to be impossible, however.[4] If Case is valued only once per DP, though, the ungrammaticality in (3) follows directly. But then the Romanian ECM and raising structures remain problematic.

2 Case by phase

In Chomsky's recent models (2001; 2004), the specific role played by Case features in the derivation is relatively small, with the heavy lifting role in driving movement relations ascribed directly to the ϕ-feature checking Agree operation. The motivation for this particular division of labor is theory-internal: in order to be able to characterise movement operations as driven by the uninterpretable features of an attracting probe, the Case feature of D, which is itself apparently uninterpretable, must be kept on the sidelines. And much of the work which had previously been ascribed to the Case-assignment/Case-checking operation can certainly be reassigned to the ϕ-checking operation instead, without any loss in empirical coverage.

Chomsky does not dispense with Case features altogether, though, for several reasons. First, there is the apparent fact that some DPs are "inert" with respect to the Agree operation. The class of inert DPs includes DPs which have undergone Agree with fully specified, finite T and with *v*.

[3] Bejar and Massam's discussion of Taraldsen's (1981) follows different lines, and is less obviously relevant to the problems examined here.

[4] While transitive *v*P is phasal in the (3) examples, the object DP will still be accessible for AGREE with T in these sentences. As Holmberg (1986) showed, definite objects in Icelandic undergo A-movement to the spec-*v*P position. (See also Jonas (1996).) As such, *Phase Impenetrability Constraint* will not shield the definite objects in (3) from T.

This is the same class of DPs which have morphological Case determined syntactically, i.e. they are structurally Case-marked. To capture the shared behaviour, Chomsky proposes that fully specified ϕ feature probes are able to value Case on DP when Agree takes place, and that valued Case has two effects: it determines morphological Case, and it renders DP inert to future Agree operations.

So both ϕ feature sets and Case features contribute to the derivation, but their roles are quite different.

What I propose to do here is take this general idea one step further. I will adopt Chomsky's notion that ϕ features are what drive movement, together with the idea that ϕ feature checking is a prerequisite for Case valuation. I assume, as well, that the presence of valued Case features renders an element inert to future agreement operations. I differ from Chomsky in the details of what the Agree operation involves, however, and in how Agree and Case valuation are related.

Chomsky's interpretation of Agree bases feature valuation entirely on the Principle of Full Interpretation. For him, unvalued ϕ features on *v* or finite T, for example, are toxic at the LF interface, leading to a crashing derivation. It follows that every T or *v* head which bears ϕ will need to be valued under Agree.

But there is substantial empirical evidence that this position is too strong, and that *v* and finite T can fail to undergo Agree without crashing the derivation. In Algonquian "copy-to-object" constructions, for example, a matrix verb always agrees with an operator at the edge of a (phasal) complement clause if the operator bears ϕ features.[5] The operator may be an interrogative pronoun, a focussed phrase, or a topic. If there is no such operator, however, the matrix verb simply appears in the default non-agreeing form. This pattern is seen in (4), from Branigan and MacKenzie (2001).

(4) a. Ni-tshissît-en kâ-uîtshî-shk Pûn ûtâuîa.
1-*remember-1* PRT-*helped*-3/2 *Paul father*
'I remember that Paul's father helped you.'

b. Tshi-tshissîtâ-tin kâ-uîtshî-shk Pûn ûtâuîa.
2-*remember-1* PRT-*helped*-3/2 *Paul father*
'I remember that as for you, Paul's father helped you.'

In (4-a), the matrix verb does not show morphological object agreement, but only the default *transitive inanimate* form for verbs with no animate object. (It agrees with the subject, as a matter of course.) In (4-b), however, where the object of the downstairs verb is interpreted as the topic of the complement clause, the matrix verb shows morphological object agreement with a 2nd person animate object. Branigan and MacKenzie show that the agreement in (4-b) must take place whenever the locality constraints on agreement are satisfied, even though object agreement in this case does not contribute to making the derivation of (4-b) convergent.

In short, this pan-Algonquian grammatical phenomenon cannot be dealt with by supposing that agreement is entirely driven by the need to eliminate unvalued ϕ features. Suppose we stipulate

[5] A similar pattern is identified in Tsez by Polinsky and Potsdam (2001).

that the matrix verb in (4-b) always bears unvalued ϕ. Then the derivation should crash in (4-a), contrary to fact, because the verb cannot Agree with a valued ϕ set. Taking the opposite approach, suppose that the matrix verb never bears ϕ features. Then the agreeing form in (4-b) should be impossible. The only way to accomodate both of these data is by allowing the verb to bear ϕ features optionally. Then it may process unvalued ϕ in (4-b) and nothing needs to happen with the ϕ-free verb in (4-a). But optionality is inconsistent with the fact that (4-a) cannot be understood as having a topic in the complement clause, with which the matrix verb simply takes the option of not agreeing.

So the facts cannot be accomodated by supposing that Agree is a matter of convergence alone. The right generalization for this data appears to be that agreement must take place whenever it is possible, whether or not agreement is required for convergence. In (4-a), for example, where there is no accessible target for the matrix verb to agree with, the verb simply does not agree. In (4-b), however, the syntactic conditions permit agreement, so it may and must take place.

Schütze (1997) follows a similar line of reasoning in describing the agreement patterns for finite T in Icelandic. The following data from Taraldsen (1996) illustrates the general pattern.

(5) Við fórum til Noregs.
we-NOM *went*-1PL *to Norway*
'We went to Norway.'

(6) a. Þá dreymdi illa.
they-ACC *dreamed*-3SG *badly*
'They had a bad dream.'
b. Okkur líður vel.
we-DAT *feel*-3SG *well*
'We are feeling well.'

With nominative subjects, for which Case is presumably valued "structurally", agreement with finite T is obligatory. With quirky subjects, with inherent Case, agreement with finite T is impossible, and only default 3rd singular forms are found. As with the Innu-aimûn data, optionality of agreement is insufficient to cover the facts. If ϕ features were optionally present in T, then default 3rd singular forms would be possible in (5); if ϕ were obligatory in T, then the (6) examples should be ungrammatical. But if agreement takes place whenever it is possible, then the Icelandic pattern is expected.

I conclude that the operation which values ϕ features in T or *v* is not driven by the Principle of Full Interpretation. Agreement does not take place to avoid a derivation crash (at LF or PF). Instead, the computational system seeks to maximize the expression of an unvalued ϕ complex in order to avoid the realization of ϕ with the default 3rd person singular values.

The general idea can be implemented quite simply. Given the acceptability of a default 3rd, singular form for finite T (in Icelandic) or for verbs (in Algonquian), let us conclude that a derivation may converge with heads bearing an "unvalued" set of ϕ features at Spell-Out. Conceivably, Spell-Out can delete the default ϕ feature complex even if it has not been given

explicit value. So T, *v*, and presumably other agreeing heads may enter the derivation with unvalued ϕ and never agree with anything in a convergent derivation. But agreement is still preferred by the computational system. In fact, agreement must take place when the syntactic context permits it to take place, by virtue of a general *Maximize* ϕ principle[6] (Branigan and MacKenzie, 2001). To a large extent, the *Maximize* Φ principle will have the same empirical consequences as Chomsky's notion that all ϕ features must be valued has.

The default ϕ feature complex in T, *v* and elsewhere differs from the ϕ features in DP in two respects. First, of course, ϕ features in DP are valued, and interpretable. Second, the ϕ features in DP contain an unvalued Case feature. I follow Chomsky in supposing that the Case feature must be unvalued in order for the ϕ features of DP to enter into any Agree operations.

Following Frampton and Gutmann (2000.) and Pesetsky and Torrego (2004), I understand feature valuation to be a feature sharing procedure, in which the content of a valued ϕ complex is does not simply supply information to an independant set of ϕ feature, but rather replaces an unvalued ϕ complex, appearing afterwards in two positions in a phrase marker. Let us also adopt Pesetsky and Torrego's terminology to refer to the subparts of such a feature chain: each position occupied by a component of a feature chain will be an *instance* of the feature complex. Where necessary, I will indicate that two feature matrices are instances of the same feature chain with a subscript notation, following familiar practice. Thus, following the Agree operation in (7), there are two instances of the valued ϕ complex: one in the subject DP, and one in T. (The same features will be present on the trace in Spec-*v*P, but their presence has no effect on the later derivation, so I will omit reference to them to streamline the discussion.)

(7) Becky may [*t* speak]
$\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i \left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$

Agree itself does nothing more than enable feature sharing/valuation. It has no direct effect on the unvalued Case feature of the subject DP, which must therefore still be valued in order for the derivation to converge. When the ϕ features of the subject are shared with T, the Case feature is shared too, as a matter of course.

As evaluation/interpretation of phrase structure takes place at the phase level, we should expect that uninterpretable features will play a major part in the derivation only at the phase level as well. It follows that unvalued Case features will be unproblematic in TP, but they may require valuation when a CP (or other) phase is constructed. In declarative root clauses, C will typically be lacking in phonetic content, but it must be present anyway in order for Spell-Out to operate (Branigan, 2004; Fitzpatrick, 2004-to appear). Following Merge of root C with TP, the structure of (7) will be (8):

(8) $[_{CP}$ C $\left[\begin{array}{c}\phi\end{array}\right]$ $[_{TP}$ Becky may [*t* speak]
$\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i \left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$

[6]This principle is suggested by, and corresponds in many respects to, Schutze's Accord Maximization Principle.

Default ϕ features on C must be replaced with a valued ϕ set, so C will agree with the features in T and the subject DP : (9).

(9) $[_{CP}$ C $\begin{bmatrix} \phi \\ \text{Case[]} \end{bmatrix}_i$ $[_{TP}$ Becky $\begin{bmatrix} \phi \\ \text{Case[]} \end{bmatrix}_i$ may $\begin{bmatrix} \phi \\ \text{Case[]} \end{bmatrix}_i$ [*t* speak]

At this point, all ϕ feature valuation is complete for the phase, but the Case feature is still unvalued, and uninterpretable. (In fact, unless the Case feature had remained unvalued up to this point, C would presumably not agree with the subject.) As the CP phase will be interpreted, the unvalued Case feature must be given a value or the derivation will now crash. At this point, then, the head of the CP phase may be fixed by supplying a value for the Case feature in C. Finite C is valued as nominative. The nominative feature given to C will simultaneously appear on T and the subject DP, since the Case feature is shared by all three. And the derivation may now converge.

The Case valuation procedure is similar to what Chomsky (2001) proposes in the case of successive cyclic $\bar{A}$-movement. For *v*P containing a wh-phrase, it will generally be necessary to force the wh-phrase to raise to the edge of *v*P in order to be accessible to later operations which can attract a wh-phrase to C. (Otherwise, the *Phase Impenetrability Constraint* will prevent C from finding the wh-phrase inside *v*P.) Chomsky suggests that movement through the Spec-*v*P escape hatch is driven by a procedure which adds an EPP-bearing probe to the head of the *v*P phase, so that the probe can draw the wh-phrase out. For Case, I am proposing the same type of operation, in which there is no EPP feature involved, but where a new feature value is supplied to the head of the relevant phase.[7]

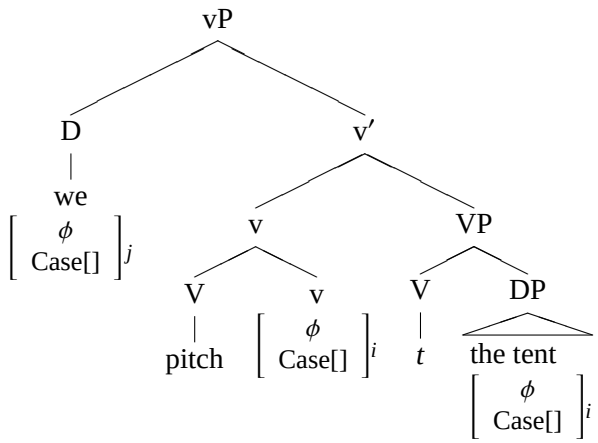
Valuation of Case on objects in *v*P will be possible in essentially the same way. Consider the derivation of *v*P in (10).

(10) We should pitch the tent.

A series of external Merge operations and Agree operations will form a *v*P with the structure in (11):

[7] In fact, the parallelism may be even stronger if the thesis of Branigan (2004) is corrent, in which subjects typically raise to the lowest Spec-CP position in all declarative clauses. In that case, the addition of a Case value to C might also trigger an EPP movement to Spec-CP.

(11)



The *v* bears unvalued ϕ from the numeration, and by *Maximize* Φ, it must replace unvalued ϕ with a valued ϕ feature set if it is possible. The *v* therefore Agrees with the direct object, taking on an unvalued Case feature in the process. The Case feature of the agent DP is also unvalued, but as it is at the edge of *v*P it may be valued at a later point in the derivation. The Case feature of *v* must be valued now, however, and the computational system therefore supplies a value for Case to *v*, which for *v*P phases is always accusative.[8]

Notice how some of the problems in Case theory with which we began are eliminated under this approach. Structural Case features are not a part of the featural content of T or *v* in the lexicon, or even in the numeration, so the question of why these head should bear such features does not arise. (The question remains, and becomes somewhat more urgent, why such heads should bear ϕ features, however.) And since there is no direct relationship between T and Case, we will not expect variation in tense specifications to affect the type of Case which is valued on the subject of a sentence. Finally, it makes sense in this model that inherent or quirky Case should win out over structural Case in general. Since inherent and quirky Cases are lexically controlled, these features will uncontroversially be a part of the content of the verb (or other head) in the lexicon. We may in fact suppose that quirky Case verbs value Case features on nominal arguments at the point of first Merge. It follows that no unvalued Case features will be present on the head when the *v*P phase is completed, so there will be no reason for the derivation to supply a structural Case value at all. Inherent/quirky Case must win out by virtue of the architecture of the derivation.

With unaccusative verbs, Case must not be valued on the head of *v*P, although the verb itself agrees with its deep object, transparently so in many languages (Kayne, 1985). Assuming that *v* Agrees with its object, the full structure of *v*P in (12-a) will be (12-b).

(12) a. The package has arrived.

[8]While *v* is accessible in principle to operations external to the *v*P phase, any external Agree operation will have to select the unvalued nominative DP to agree with. The Case feature of *v* must therefore be valued internal to *v*P.

b. $[_{vP}$ arrive-v $\begin{bmatrix} \phi \\ \text{Case[]} \end{bmatrix}_i$ $[_{VP}$ *t* the package]] $\begin{bmatrix} \phi \\ \text{Case[]} \end{bmatrix}_i$

While *v* bears an unvalued Case feature, *v*P is not a strong phase, as is clear from the fact that T is able to attract the object inside the verb phase. Therefore, *v* will never be assigned a value for its Case feature, and the object DP will depend on the CP phase to have its Case valued.

Burzio's generalization (Burzio, 1986) must be viewed in this approach as a condition on the phasal status of vP; the absence of an argument in spec-*v*P correlates with vP being non-phasal :

(13) *Burzio's generalization - revised* (BGR)
*v*P is a strong phase only if *v* has a specifier.

The generalization itself still remains axiomatic, unfortunately.

Passive voice will look somewhat different in this model from what the literature has accustomed us to. If accusative Case properties are not available in a verb from the numeration, then it cannot be the case that passive morphology has any direct effect on the case properties of a verb either. Passive sentences are, however, structures in which it is clear that vP must be non-phasal, since the object of a passive verb is directly accessible to T with AGREE, as seen in (14), where the finite auxiliary agrees in number with the DP object of *purchased*.

(14) ?$[_{CP}$ (C) $[_{TP}$ there were $[_{vP}$ purchased several new backhoes at that auction.]]]

If passive morphology somehow eliminates the external Θ-role from *v*, then under Burzio's generalisation - revised, *v*P will automatically be non-phasal.

But if *v*P is non-phasal, then there is no point in the derivation at which the Case feature of *v* and its object DP can be valued as accusative. The earliest point in the derivation of (14) at which Case valuation for the object can occur is at the CP phase level, where C, T, *v*, and *several new backhoes* will be valued as nominative. And the same is true for more natural passives like (15), with the object raised to Spec-TP.

(15) $[_{CP}$ (C) $[_{TP}$ this tent was $[_{vP}$ purchased *t* at a yard sale]]]

Since passive morphology does not affect the Case properties of the verb directly, no problem arises in explaining how apparent passive forms may sometimes continue to value accusative objects, as is possible with Latin deponent verbs, as in Embick's (2000) example: (16).

(16) Cethegus Cicerōnis iānuam obsidēret eumque vī aggrederētur.
Cethegus Cicero-GEN *door*-ACC *beset* *him*-ACC=*and violently attack*-IMPERF-SUBJ-3SG
'Cethegus was to beset Cicero's door and attack him.'

In (16), the deponent verb *aggredior* takes a passive form, but retains its active behavior otherwise. Embick's take on this pattern is that deponent verbs bear a special, unpredictable diacritic [pass] which does not interact with the syntax, but which forces passive morphology post-syntactically.

The same [pass] feature may appear on *v* or on the root (with deponents), but when it appears on *v* the result is passive syntax, which Embick attributes to a missing external argument in Spec-*v*P. Embick's approach is consistent with the model developed here, where deponent verbs, bearing the [pass] feature at the root level, will freely appear in phasal *v*P, while passive verbs—deponent or otherwise—will appear only in non-phasal *v*P because of their missing external arguments.

Something similar is possible in East Slavic, where Ukranian passives (Sobin, 1985) and Russian "accusative unaccusatives" permit accusative Case on objects of passive and unaccusative verbs, respectively, as in the Russian (17):

(17) Soldata ranilo pulej.
solder-ACC *wounded bullet*-INST
'A soldier was wounded by a bullet.'

Lavine and Freidin (2002) show that the accusative Case found on the subject is both structural and valued within *v*P, before the object raises to subject position.

If structural accusative Case requires phasal status for *v*P, then we must suppose that Russian and Ukranian allow *v*P to be phasal sometimes in the absence of an argumental specifier for *v*. Other than this stipulation, which must be made in some form to account for cross-linguistic variation, nothing else need be said to find a space for these Slavic constructions in this model.

The situation opposite to that of Latin deponents arises in languages like Mandarin, where passive syntax occurs with no change in the verbal morphology, as in the following examples from Huang (1993.).

(18) a. Zhangsan kan-le liang ci de shu.
Zhangsan read-PERF *two time book*
'Zhangsan read the book twice.'
b. Shu bei Zhangsan kan-le liang ci.
book by Zhangsan read-PERF *two time*
'The book was read twice by Zhangsan.'

In Mandarin, the absence of an argument in Spec-*v*P is evidently not signalled in the verbal morphology. Under BGR, however, the absence of the external argument makes *v*P non-phasal. It follows that the object of the verb will not have Case valued internal to *v*P, and that the object will undergo normal movement to the Spec-TP subject position.

Now let us return to the Romanian ECM cases discussed already, which have proven problematic for Case theory. If we recast the role of Case, the issues which arise with sentences like (19), for example, appear in a different light.

(1) a. Am vrut ca cineva să citească cartea
I-have wanted that somebody SUBJ *read book-the*
'I wanted somebody to read the book.'

b. Am vrut pe cineva să citească cartea
I-have wanted to somebody SUBJ *read book-the*

Consider first the derivation of the complement clause in (1)[a]. The numeration supplies the verb, T and the nominal expressions to Merge operations, together with certain sets of category specific grammatical features. T bears unvalued ϕ features, but no Case feature. Nominals (DPs) bear valued ϕ features, and an unvalued Case feature.

In (1)[a], the complement clause subject is checked by T of the complement clause. The ϕ features of T are thereby valued, and a DP projection of the goal ϕ features is identified (pied piping) as a category to be re-Merged with TP as its specifier, in order to check the EPP feature of T.

(19) $[_{TP}\ [_{DP}$ cineva $\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$ $]\ [_{T'}\ [_{T}$ să $\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$ citească $]\ [_{vP}\ t\ t$ cartea $]]]$

Merge of TP with the complementiser *ca* takes place next. C, like T, has an unvalued ϕ complex, which should optimally be valued by an AGREE operation under *Maximize* Φ. The unvalued ϕ probe therefore seeks valued ϕ features, and it finds its goal simultaneously in the subject DP and T, both of which are equidistant from C (Pesetsky and Torrego, 2000; Branigan, 2004), and both of which contain an instance of the same valued ϕ complex. The unvalued features of C are then replaced with an instance of the valued ϕ complex on T and the subject. The result is a 3-membered feature chain, instances of which appear in C, T, and the subject DP. And the unvalued Case feature will now appear in all three positions as well.

It is when the complementizer *ca* merges with TP that Case features become relevant.

(20) $[_{CP}\ [_{C}$ ca $\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$ $]\ [_{TP}\ [_{DP}$ cineva $\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$ $]\ [_{T'}\ [_{T}$ să $\left[\begin{array}{c}\phi\\ \text{Case[]}\end{array}\right]_i$ citească $]\ [_{vP}\ t\ t$ cartea $]]]]$

The introduction of C creates a phase-level constituent, and phases are subject to evaluation/interpretation Chomsky (2001). Therefore the unvalued Case feature of the shared feature chain is now problematic, and a solution to this problem should be found to ensure that the phase as a whole is convergent. And as the problem is one in which an unvalued feature is present in the phase, the optimal solution is to add a matching valued feature to the head of the phase. A value for the Case feature is therefore supplied to C. And as C shares its Case feature with T and the subject DP, a value is simultaneously provided for the other instances of the Case feature.

(21) $[_{CP}\ [_{C}$ ca $\left[\begin{array}{c}\phi\\ \text{Case[NOM]}\end{array}\right]_i$ $]\ [_{TP}\ [_{DP}$ cineva $\left[\begin{array}{c}\phi\\ \text{Case[NOM]}\end{array}\right]_i$ $]\ [_{T}$ să $\left[\begin{array}{c}\phi\\ \text{Case[NOM]}\end{array}\right]_i$ citească $]\ t\ t$
cartea $]]$

The Case problem is resolved, and the phase is now convergent.[9]

At the next stage in the derivation, the CP complement is merged with the verb *vrut* and then *v* in the matrix clause. Transitive *v* bears an unvalued ϕ complex, supplied by the numeration. But with no visible goal to allow an AGREE operation, the ϕ complex in *v* will remain 'unvalued', to be realized only as the default 3rd, singular values.[10] (There is no morphological consequence to the realization of ϕ features with an active transitive verb in Romanian.) And since no shared feature chain is established with *v*, there is no question of *v* bearing an unvalued Case feature, so at the *v*P phase level, no Case feature needs to be supplied.

(22) $[_{vP}\ v \underset{\left[\ \phi\ \right]_j}{\ } \text{vrut}\ [_{CP}\ \text{ca} \underset{\left[\ \begin{matrix}\phi\\ \text{Case}[\text{NOM}]\end{matrix}\ \right]_i}{\ } \text{cineva să citească cartea }]] \ldots$

Consider now the situation with the ECM complement in (22-b). As in (22-a), AGREE in TP will produce a structure in which the ϕ/Case feature complex of the subject DP is shared with T. But unlike (22-a), TP in (22-b) is not merged with a complementiser, so no phase-level effects are inflicted on TP, and the Case feature in the subject-T feature chain will remain unvalued into the matrix clause.

At the point where the matrix *v* is introduced into the derivation, however, the structure again becomes phasal.

(23) $[_{vP}\ v \underset{\left[\ \phi\ \right]_j}{\ } \text{vrut}\ [_{TP}\ \text{cineva} \underset{\left[\ \begin{matrix}\phi\\ \text{Case}[]\end{matrix}\ \right]_i}{\ } \text{să} \underset{\left[\ \begin{matrix}\phi\\ \text{Case}[]\end{matrix}\ \right]_i}{\ } \text{citească cartea }]]$

Again, matrix *v* bears unvalued ϕ features, which seek a goal in the VP complement. In (23), the probe finds matching features in both the subject and T, both of which carry an instance of the same ϕ/Case feature complex. AGREE then extends the goal feature chain to *v*, so that *v* now bears an unvalued Case feature (and valued ϕ features): (24).

(24) $[_{vP}\ v \underset{\left[\ \begin{matrix}\phi\\ \text{Case}[]\end{matrix}\ \right]_i}{\ } \text{vrut}\ [_{TP}\ \text{cineva} \underset{\left[\ \begin{matrix}\phi\\ \text{Case}[]\end{matrix}\ \right]_i}{\ } \text{să} \underset{\left[\ \begin{matrix}\phi\\ \text{Case}[]\end{matrix}\ \right]_i}{\ } \text{citească cartea }]]$

Again, a Case problem at the phase level will be resolved by supplying a value for Case to the head of the phase. This time, of course, the value is supplied to *v* (not C), and the valued Case feature will be realized as accusative. The accusative Case feature is automatically shared by the downstairs subject and subjunctive T, and the derivation of *v*P is then convergent: (25).

[9] As Case features will automatically be shared across a ϕ feature chain, the empirical achievements of Frampton and Gutmann (2000.) will be available in this model, too. In particular, their analysis of Case-agreement with Icelandic participles will carry over automatically.

[10] With valuation of the Case feature, the ϕ features on C become inaccessible for AGREE (Chomsky, 1995), so matrix *v* cannot take C as a goal.

(25) $[_{vP}\ v \begin{bmatrix} \phi \\ \text{Case}[\text{ACC}] \end{bmatrix}_i$ vrut $[_{TP}$ cineva $\begin{bmatrix} \phi \\ \text{Case}[\text{ACC}] \end{bmatrix}_i$ să $\begin{bmatrix} \phi \\ \text{Case}[\text{ACC}] \end{bmatrix}_i$ citească cartea]]

Raising is also possible from Romanian subjunctive complements, as documented by Grosu and Horvath (1984), as in (26) (from Rivero and Geber (2004)).

(26) Copiii îi par Mariei să lucreze bine.
children-NOM *Cl*-DAT *seem Mary*-DAT SUBJ *work* *well*
'The children seem to Mary to work well.'

As with ECM complements, raising structures will be expected when a complement clause is non-phasal TP. In (26), then, the downstairs subject *copiii* may AGREE with the downstairs subjunctive T, but no Case feature is valued in the process. And since there is no complementiser merged into the complement clause, the Case feature on the resulting agreement chain is not valued downstairs. Subsequent movement of the subject into the matrix clause takes place along the usual lines, via AGREE with matrix T. And when finally C is (covertly) merged into the matrix clause, a nominative Case value is assigned simultaneously to C, the subject, and both upstairs and downstairs T (together with any intermediate functional heads which may have undergone AGREE with the subject along the way).

Although the problem is most transparent in Balkan ECM and raising sentences, the same general issue arises even in English. A clausal complement of *want*, for example, may be transparent to Case relations or opaque (Bresnan, 1972; Pesetsky, 1988).

(27) a. We wanted [them to arrive on time]
b. We wanted [PRO to arrive on time]

The usual explanation for this is that the complement clause may be smallish (TP) or largeish (CP), and that ECM can take place only with a smaller sized complement clause. In other words, the contrast reflects the interaction of the *Phase Impenetrability Constraint* with a choice between phasal or non-phasal complement clauses. And as expected under such a view, only internally valued Case—null Case for PRO, here (Chomsky and Lasnik, 1991)—will be available if the complement clause is forced to be phasal to allow for wh-movement:

(28) We wondered $[_{CP}$ when [PRO to arrive]]

But this explanation is incomplete, since it does not explain the absence of internally valued (null) Case in structures where the CP layer must be absent in a complement clause, as is the situation with English *believe*-class verbs.[11] An account must still be provided for the ungrammaticality in English of (29), for example.[12]

[11] Under Pesetsky's (1988 characterization, these include verbs which have a non-agentive external argument.

[12] The literature on this problem is enormous. Martin (1996) provides perhaps the most comprehensive coverage of the issues.

(29) *We consider [$_{TP}$ PRO to be reliable]

In the model I am proposing, the solution to (29) is the same as we have already seen in the Balkan ECM cases. If null Case is valued only on the head of a CP phase, then it follows that no null Case will be available when a complement clause is a bare TP. PRO is therefore excluded in (29) because it cannot have null Case valued.

Clearly lexical properties of individual heads must play some role in the availability of Case-assignment potential. Some verbs appear to be unable to validate accusative Case altogether, while other verbs can (Pesetsky, 1982). Hence, the contrast between (30-a) and (30-b):

(30) a. She asked the time.
b. *She wondered the time.

If Case is valued at the *v*P phase level only, though, this contrast cannot reflect a difference in the Case properties of lexical items. It can, however, reflect a difference in the ability of different lexical items to participate in AGREE operations. Suppose that *v* for *wonder*, unlike the *v* for *ask*, brings no ϕ features into the derivation. As AGREE replaces a default ϕ set with a more richly specified ϕ set, there will be no way for *wonder* to AGREE with any ϕ-bearing goal DP. Consequently, no unvalued Case feature will be acquired by *v* in (30-b), and no Case valuation can take place at the *v*P phase level.

The difference between verbs which undergo AGREE and those which do not is morphologically transparent in Algonquian languages. Consider the Innu-aimûn sentence in (31).

(31) Ni-kukuetshitshemû tshetshî mâ mûpishtuâkuenit ukâuîuâu Pûn mâk Mânî.
1-*asked* *if* *visit*-3PL *mother Paul and* *Marie*
'I asked about Paul and Marie if they visited their mother' or 'I asked about their mother if Paul and Marie visited her.'

In this sentence, the matrix verb *kukuetshimâu* 'ask' is morphologically incompatible object agreement morphology, i.e. it has a lexical property which prevents it from bearing ϕ features.[13] In contrast with the (4) data, the presence of a topic in the complement clause does not force agreement to take place on the matrix verb because agreement takes place only when it is not in conflict with other properties of the sentence. So (31) is ambiguous: either Paul and Marie or their mother can be understood as the topic of the complement clause.

What is significant for Case theory about the (31) data is that the failure of agreement to occur in (31) actually has no consequence for Case valuation in this sentence. The long-distance agreement found with topics in complement clauses never allows Case to be checked (Branigan and MacKenzie, 2002). Instead, lexical properties of the matrix verb simply prevent AGREE from taking place. If the same possibility is available in English, as I have suggested, then the contrast in (30) follows in the same way.

[13] Algonquianists call verbs of this class *animate intransitive* or AI verbs, despite the fact that many of the AI verbs are fully transitive in their syntactic and semantic properties.

3 The Case filter and cross-linguistic variation

The approach to ϕ/Case feature valuation presented above is obviously, and deliberately, unable to account for sentences in which a failure of checking leads to an unsuccessful structure, such as (32).

(32) *There seems that these tents are flimsy.

In (32), the Case feature of *these tents* is valued at the CP phase level in the complement clause. Matrix T will not agree with anything, since there are no accessible ϕ features for the ϕ probe in T to AGREE with, so T should appear in the default 3rd, singular form. The EPP feature of matrix T can be checked by expletive *there*. Yet the sentence is ungrammatical.

The problem with (32) appears to be clear enough: one of the two finite Ts in the sentence is not involved in Case valuation. This problem is addressed in earlier theories by supposing that T bears a Case feature automatically, when it is brought from the numeration into the derivation. In place of this essentially stipulatory account, I propose the more flexible (if still somewhat stipulatory) principle (33):

(33) *Case Condition*[14]
At Spell-Out, T must bear a (valued) Case feature.

In (32), finite T in the matrix clause is never part of a ϕ feature chain, so it never acquires an unvalued Case feature. The same is true of the silent root C. Therefore, no Case value will be supplied to C and T at the CP phase level, and the root phase will violate the Case condition at Spell-Out.

Notice that the Case Condition must apply to T instead of C because of non-phasal bare TP complements:

(34) *We imagine [$_{\text{TP}}$ there to seem that these tents are flimsy].

Again, the ungrammaticality reflects a failure of T—infinitival, in this case—to acquire a valued Case feature, because T does not AGREE with any accessible DP.

Unlike an LF constraint, which is presumably universal, the Case Condition (33) may apply differently in different languages, i.e. it is subject to parametric variation. In Icelandic, for example, the Case Condition appears not to constrain T in simple sentences. Consider again the quirky Case examples in (35) (from Taraldsen (1996)):

[14]Note that this is a constraint on the "surface structure" of the sentence, since (33) applies after narrow syntax, and before the LF interface. The Case condition cannot be an LF constraint, because the uninterpretable Case features must all be erased from the phrase marker (by Spell-Out) before the LF interface is reached. Lasnik and Freidin's (1981) argument against a surface structure Case filter are irrelevant to this model, though, first because it is not the form of the nominal which is controlled by the Case condition in (33), and secondly, because the role of Spell-Out in the derivation is not simply to control phonetic content, but also to ensure that uninterpretable features get removed from the phrase marker. If (33) is a constraint on how Spell-Out deals with uninterpretable features, then phonetic content is irrelevant.

(35) a. Þá dreymdi illa.
they-ACC *dreamed*-3SG *badly*
'They had a bad dream.'
b. Okkur líður vel.
we-DAT *feel*-3SG *well*
'We are feeling well.'

In the (35) examples, the subject bears inherent Case, which I suppose is valued by *v* inside *v*P in the subject's θ-position. It raises to Spec-TP to satisfy the EPP feature of T, but T does not participate in an AGREE relation, so T bears only default ϕ features, and they are not shared with the subject. Without AGREE, T does not acquire Case features, but this is permissable in Icelandic where the Case condition does not constrain T.

The Case Condition appears to apply to heads other than T, as well. English passive verb forms are found only with transitive verbs.

(36) a. There was discovered a better solution./A better solution was discovered.
b. *It was laughed about the problem.

If passive forms are verbs in which *v* fails to assign a θ-role to its specifier (for whatever reason), then the ungrammaticality of (36-b) requires explanation. T in (36) AGREEs with the expletive *it* subject, which allows the checking requirements of T and C to be satisfied. The problem with (36-b) must be explained by some property of the sentence internal to *v*P.

If the Case condition applies to *v* in passives, then the contrast between (36-a) and (36-b) follows. In (36-a), the passive participle can AGREE with its object, acquiring an unvalued Case feature in the process. Subsequent AGREE with T and C, and valuation of the Case feature at the CP phase level, will then ensure that *v* will bear a valued Case feature. In contrast, the intransitive verb in (36-b) cannot AGREE with anything, so it can never get a Case feature. If the Case Condition applies to passive *v*, then (36-b) must violate it.

Once again, languages appear to differ in this respect. Most of the Germanic languages allow impersonal passives, which combine passive morphology with unergative intransitive verbs, as in the German (37) (from Cardinaletti (1990)).

(37) Ich weiß [$_{CP}$ wo [$_{TP}$ getanzt wurde]]
I know where dance-PASS *become*
'I know where there was dancing.'

Structures like these will be permissable only if *v* does not need a valued Case feature at Spell-Out. So the Case Condition cannot apply to passive *v* in German.[15]

[15] Jan-Wouter Zwart (personal communication) observes that the grammaticality of the Dutch counterpart to (37) does not follow from my account, since the subject is impersonal *er*, which, like English *there*, does not have a Case feature. I must suppose for this case that the passive participle itself may bring an unvalued Case feature into the derivation.

It may be that the Case condition applies not only to passive verbs in English, but to all verbs with a DP complement. For normal transitive verbs, this is, of course, unproblematic. The issue is more delicate with unaccusative verbs. The discussion in Lasnik (1996) suggests, however, that unaccusative verbs actually do pattern with transitive verbs in this respect, as does the verb *be*. Lasnik observes that unaccusatives and *be* must be adjacent to a DP complement when the verb and its DP object both remain *in situ*, as in the following:

(38) a. ?There usually arrives a bus (at this time).
b. *There arrives usually a bus (at this time).

(39) a. There will usually be a man here.
b. *There will be usually a man here.

Lasnik concludes from these data that *be* and *arrive* value Case on their complements, but this conclusion is at odds with the agreement between the finite verb (=T) and the complement DP. Suppose, however, that *arrives* in (38-b) bears a ϕ feature set. Then under *Maximize* Φ *arrives* will AGREE with the closest accessible goal in its complement. But the presence of the adverb *usually* blocks AGREE, so *arrives* will not acquire an unvalued Case feature. When later a nominative Case value is supplied to root C and shared with T and the complement DP *a bus*, the verb *arrives* will not be affected, and no Case value will ever be given to the verb.

In contrast, in (38-a), the verb *arrives* may AGREE freely with its DP complement, so that ultimate valuation of the Case feature on the DP will simultaneously value a Case feature on the verb, allowing it to satisfy the Case Condition. And the same reasoning holds for the (39) examples, as well.

4 Conclusions

Chomsky's theory of AGREE and ϕ feature valuation offers an optimal solution to the general problem of long-distance dependencies, i.e. movement and related phenomena. Although Case relations have historically been intimately involved with discussions of movement, especially A-movement, it is now clearer than before that the relationship between Case and movement may be epiphenomenal. In the model proposed here, Case and movement are entirely separate syntactic phenomena, but as both are dependant on the effects of the AGREE operation, they are expected often to coincide.

What is interesting in this more modular account of the interactions between Case and agreement is how the notion of convergence plays out in each area of the grammar. Convergence does not drive the AGREE relation directly, since agreement is simply a matter of producing an optimally rich feature-set for a given (non-nominal) head. But if agreement does not occur, then the conditions which will allow Case-valuation of a DP will never arise. AGREE is selfish, and never "altruistic", but the end result of agreement will often turn out to reflect "enlightened self-interest".

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