Structural case, locality and cyclicity

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It is argued that long-distance case assignment does not actually exist. Unlike long-distance agreement, it would necessarily violate the Phase Impenetrability Condition. All examples that have been analyzed in terms of long-distance case actually involve the appearance of the nominative as the default case. Cases that are actually assigned – the accusative and the non-structural cases – always obey locality. Yet assignment of the accusative does appear to violate cyclicity. This problem can however be solved as well with the right view on when case is assigned, once the dependency between structural accusatives and other DPs is properly understood. As a result, the alternative solution put forward by Sigurðsson (2006b), requiring that subjects first-merge lower than objects, is shown to be unnecessary.

1. Phases and long-distance agreement

Apparent long-distance agreement and case-assignment, as exemplified in the Icelandic example (1a) (from Sigurðsson 2006b) and the English example (1b) (from Legate 2005), raise important questions for the locality of syntactic operations.

(1) a. Það voru taldir hafa verið veiddir fjórir laxar.
there were:**PL** believed have been caught four salmon:**N.PL**
'People believed there to have been four salmon caught.'

b. There seem to have arrived ten trains into this station today.

On the one hand, nominative case on the DP *fjórir laxar* 'four salmon' in the embedded non-finite clause would appear to be assigned or licensed from finite T in the matrix clause. On the other, the case and phi-features on *fjórir laxar* must trigger nominative plural agreement on *veiddir* 'caught', *taldir* 'believed' and *voru* 'were' (similarly in the English example). Crucially, the dependencies here are in principle unbounded, as arbitrarily many non-finite raising clauses can intervene between the finite verb and the clause containing the DP.

In Chomsky (2000, 2001, 2008) this is handled by defining the units of syntactic representation relevant for locality in such a way that no boundaries intervene between the low nominative DP and the agreeing finite T in such sentences. Specifically, only C and v* (the flavor of v which introduces an external argument) define phases, and neither of these is present at the relevant levels. Crucially, plain v (the version which appears in passive and unaccusative clauses like in (1) and does not introduce an external argument) is not assumed to be a phase head.[1] However, the distinction between the two types of v is suspicious, especially if phases are really supposed to be "the closest syntactic counterpart to a proposition: either a verb phrase in which all θ-roles are assigned or a full clause including tense and force" (Chomsky 2000: 106). There is no reason to think that unaccusatives and passives are any less propositional than transitives, and they have certainly had all of their θ-roles assigned in the only sense that can be relevant.[2] Indeed, Legate (2003) presents evidence from reconstruction, quantifier raising, parasitic gap licensing and stress assignment suggesting that all vPs do indeed constitute phases, whether they have an external argument or not.

If this conclusion about the phasehood of vP is correct, the facts in (1) present a puzzle. The Agree operation between finite matrix T and *fjórir laxar* in (1a) – or between T and *ten trains* in (1b) – would have to cross intervening phase boundaries, and this would violate Chomsky's Phase Impenetrability Condition (henceforth PIC). In order to avoid this problem, Legate (2005) proposes something called *Cyclic Agreement*, a mechanism parallel to what is standardly assumed to capture the unbounded dependencies of successive-cyclic *wh*-movement and subject raising.[3] These varieties

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[1] In some formulations of the theory, vP is considered a phase, but not a **strong** phase. Since what matters for the locality of operations under those formulations is the strong phase, this point is not relevant for our concerns.

[2] That is, once the vP is constructed, passives and unaccusatives have had all of the θ-roles assigned which are going to be assigned, just as transitives do. The other conceivable interpretation of Chomsky's statement is that phases are verb phrases where all **possible** θ-roles have been assigned. This, however, cannot be what is relevant, since transitive phrases like [vP *John* [VP *sell his car*]] must certainly count as phases, in spite of the fact that the optional recipient θ-role (which we see in examples like *John sold Mary his car*) has not been assigned.

[3] Legate also points out that the locality problem cannot be avoided by assuming with Chomsky (2001) that a given phase is not spelled out until the next higher phase head has been reached. While this would allow agreement to cross one phase boundary, the examples in (1) both involve the intervention of at least two (in (1b) e.g. we have the little v associated with *arrive* and that with *seem*).

of movement have in common that they would be non-local if they were implemented as single steps from base position to landing site. The standard analysis instead breaks up the movement into a series of shorter steps, each of which is individually local. What Legate proposes is that long-distance agreement is exactly parallel, proceeding in local steps through intermediate phase heads until finally reaching an instance of finite T. In a sentence like (1b), *ten trains* will thus agree first with the v in the embedded clause, i.e. the one connected with *arrive*. This v will then agree with the matrix v (connected with seem), and it is finally this matrix v which agrees with finite matrix T. A similar analysis will apply to the Icelandic example (1a).

2. Long-distance case?

Legate's proposal of *Cyclic Agreement* is well-suited to handle the agreement facts in sentences like (1). However, it can't account for the case-assignment patterns in the same class of examples. The dependency in long-distance agreement is of something in a higher phase – the finite T showing agreement – on something in a lower phase – the DP in the embedded clause. As phases are constructed, information is passed successively further up the tree in standard, cyclic fashion, and the φ-features of the embedded DP can thus (indirectly) influence the form of the matrix verb. The direction of the dependency in case assignment, on the other hand, is crucially reversed. The DP in the lower phase is assumed to depend for the licensing or assignment of its nominative case on finite T in a higher phase. In fact, if we take cyclic, phase-based Spell-out seriously, the phase containing a DP like *fjórir laxar* would actually be sent to Spell-out before the finite T apparently responsible for its case has even been merged into the derivation.[4]

Legate considers this issue and suggests two possibilities for getting around it. First, she says we could adopt the view of early Minimalism, according to which DPs enter the derivation with valued but uninterpretable case features, which must be deleted by checking. The idea would be that derivations where the DPs happen to have been inserted with the right case

[4] This asymmetry of course applies only to theories that assume a bottom-up derivation. Precisely the opposite would hold in a left-to-right derivation as proposed by Phillips (2003), and there would be no asymmetry in either direction in a theory like Tree Adjoining Grammar, where long-distance dependencies are derived by inserting material between the dependent elements (see e.g. Frank 2006). Evidence regarding the existence and nature of such asymmetries can thus help us to decide between such theories.

features will eventually converge, once agreement makes its way cyclically up to the case-assigning head. Those where they have the wrong cases will crash and be filtered from consideration. The observed patterns of case-marking would thus emerge more or less by process of elimination. Such a scenario is less than ideal, since it essentially implies that multiple derivations must be considered in parallel. The second possibility she considers is that DPs that engage in long-distance agreement are actually sent off to Spell-out without case. The morphological component can wait until the construction of the phase which contains finite T, at which point it has the information necessary to go back into the previous phase and add in the appropriate case after the fact. Again, such an option is unattractive, as it would violate the spirit of a phase-based approach to syntax. We would ideally like to maintain the idea that, once a phase is sent off to Spell-out, it cannot be affected by subsequent steps of the derivation. The objections to these two approaches to long-distance case assignment may not be serious enough to eliminate them from consideration completely, but they suffice to make it worthwhile to look for alternatives.

To this end, we must examine more carefully the conditions under which long-distance case-assignment actually occurs. Alongside (1) above, consider the following examples of long-distance case and agreement ((2a–c) are from Sigurðsson 2006b; (2d) is from Boeckx 2000):[5]

(2) a. Þá hafði skyndilega birst maður/*mann.
then had:SG suddenly appeared man:N/*A
'Then a man had suddenly appeared.'

b. Þá höfðu verið lesnir kaflar.
then had:PL been read chapters:N
'Then chapters had been read.'

c. Henni höfðu alltaf leiðst strákarnir.
her:D had:PL always found-boring boys-the:N
'She had always found the boys boring.'

d. Honum eru taldir hafa verið gefnir peningarnir.
him:D are:PL thought have been given money:N.PL
'He is thought to have been given the money.'

[5] My discussion in the rest of this paper will focus on Icelandic data for the simple reason that it has rich case marking and agreement and (almost) all of the phenomena that provide crucial tests of locality in case-assignment, viz. ECM, raising and subjects bearing non-structural cases.

What we find are several variations on the following theme. Some non-nominative element occupies the surface subject position, either an expletive ((2a–b), as well as (1a–b) above) or a quirky subject (2c–d). An argument we would expect to start out low in the VP – an unaccusative subject (1b, 2a), or the underlying object in a passive (1a, 2b and 2d) or in a clause with a quirky subject (2c) – is able to remain low because the expletive or quirky subject satisfies the EPP. In spite of its position, this low argument receives nominative case and triggers agreement on the verb, which may be in the same clause (2a–c) or in a higher clause containing a raising predicate (1b) or passivized ECM verb (1a, 2d). A clear generalization emerges here.[6] The case that appears to be assigned in non-local configurations is always the nominative, at least in nominative-accusative languages.[7]

Now, it is not particularly surprising that non-structural cases should never involve long-distance dependencies: they are generally assumed to be assigned in highly local fashion by specific lexical items or functional heads. What is intriguing is that the structural accusative is not assigned over long distances either. Rather, it is apparently always assigned or checked locally, within the minimal phase. In a simple transitive sentence like (3a) (from Sigurðsson, 2006a), this is standardly assumed to be handled by v. As shown by the relevant portion of the structure shown in (3b), v is indeed local to the accusative DP *hana* (both in boldface), as both are contained within the same minimal phase, here vP.[8]

(3) a. Þeir völdu hana.
they:N chose:PL her:A
'They chose her.'

b. [$_{vP}$ Þeir **v** [$_{VP}$ völdu **hana**]]

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[6] I suspect that I am not the first to notice this generalization, but I present it here without citation because I am not aware of any previous discussion in the literature.

[7] It may be that non-nominative cases can be copied over longer distances as part of concord processes in certain languages (see e.g. Richards 2007, for discussion of interesting data from Lardil). The morphophonological mechanisms involved are however poorly understood and are plausibly distinct from those involved in actual case assignment.

[8] The structures I give throughout are simplified for clarity's sake. E.g. movement is not indicated unless relevant to the discussion of the example, and I use a single, undifferentiated v rather than taking a position on whether, e.g., a head introducing the external argument should be distinguished as Voice from heads responsible for eventivity or the verbalization of a category-neutral root.

(4) a. Ég tel hana hafa séð myndina.
I:N believe her:A have seen picture-the:A
'I believe her to have seen the picture.'

b. [$_{vP}$ Ég **v** [$_{VP}$ tel [$_{TP}$ **hana**$_i$ hafa [$_{vP}$ t$_i$ v[$_{VP}$ séð myndina]]]]]

Even in ECM configurations like (4a) (from Sigurðsson 1992), the embedded subject is local to the matrix v for the purposes of structural accusative assignment, as shown in the structure in (4b). Though it may be first-merged in the phase defined by the embedded v, it is at the edge of that phase and can escape without violating the PIC. Depending on which account one adopts, it either raises to the Spec of the embedded TP (as indicated in (4b)) or even further into a derived object position in the matrix clause. In either case, it ends up within the minimal phase defined by the matrix v, and thus it can receive/check structural accusative there in strictly local fashion.

What we do not find are examples which are parallel to 1a, but where the case assigned long distance is accusative. The relevant scenario would be where a DP is able to remain in a low position due to the presence of an expletive or quirky subject, yet still gets structural accusative from an ECM verb further up. In Icelandic, this would look something like (5a) (from Bowers 2002) or (5b) (from Sigurðsson 2006b):

(5) a. *Ég hafði talið það vera villu í essu handriti.
I:N had believed there be error:A in this manuscript
intended: 'I had believed there to be an error in this manuscript.'

b. *Við töldum henni hafa leiðst strákana.
we:N believed her:D have found-boring boys-the:A
intended: 'We believed her to have found the boys boring.'

Interestingly enough, structures like (5a), with an expletive occupying the embedded subject position under an ECM verb, aren't possible in Icelandic. A possible explanation for this is that Icelandic expletive *það* appears in Spec-CP, and thus won't fit into ECM infinitives, which are only TPs (see e.g. Bowers 2002). Whatever the reason, case is not involved, so sentences of this kind cannot tell us anything about locality in case-assignment.[9] The

[9] Of course, such structures are possible in English, as shown by the perfectly grammatical translation given for (5a). Unfortunately, they cannot tell us anything about case locality either because the English case system is highly impoverished and organized along different lines than in languages with a more fully developed nominative-accusative system (see McFadden 2007, for discussion of this point).

interesting example for our purposes is (5b), because the configuration here is indeed possible in Icelandic. The problem with the way that it stands above is that the embedded object is in the accusative. The grammatical version of this structure has nominative case on the lowest DP, as in (6a) (also from Sigurðsson 2006b):

(6) a. Við töldum henni hafa leiðst strákanir.
we:N believed her:D have found-boring boys-the:N
'We believed her to have found the boys boring.'

b. [$_{vP_1}$Við **v** [$_{VP}$ töldum [$_{TP}$ henni$_i$ hafa [$_{vP_2}$ t$_i$ v[VP leiðst **strákanir**]]]]]

The structure in (6b) (simplified as above) shows how locality plays out in examples like this. The embedded clause is built around a verb that assigns quirky dative to its subject and thus does not assign accusative to its object. Nonetheless, the embedded clause does involve a vP, here labeled vP_2, which constitutes a phase. Now, since the embedded subject gets quirky dative, the matrix ECM verb does not get a chance to assign it structural accusative as it normally would. We expect that in principle it should be able to assign this accusative elsewhere, but as it turns out there is no eligible DP local enough for the assignment to go through. The embedded object *strákanir* is simply too far away from the matrix v, because it remains within the phase defined by vP_2, and does not raise to its edge.[10] If the *Cyclic Agreement* mechanism proposed by Legate (2005) were really responsible for case as well as agreement, we might expect it to allow a long-distance accusative in instances like this, but apparently it only works for the nominative.[11]

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[10] Note that the impossibility of structural accusative here is not due to an intervention effect caused by the presence of the dative. Accusative is assigned unproblematically across dative arguments in standard ditransitive clauses. This fact would also seem to indicate that the head which introduces indirect object datives in Icelandic does not define a phase boundary. See McGinnis (2005) and earlier work cited there for discussion of the phasal status of various kinds of applicatives cross-linguistically.

[11] Halldór Sigurðsson, p.c., has alerted me to another Icelandic construction which might be a legitimate counterexample to the ban on long-distance accusative assignment. Under certain circumstances, subjects of ECM infinitives can surface in post-verbal position without an overt expletive or quirky subject, and they crucially show up accusative, not nominative:

3. Nominative case is independent of agreement

Now, one might take the facts just presented as confirmation that long-distance case assignment is crucially tied to agreement. After all, in Icelandic and many other languages, we only find overt morphological agreement with nominatives, never with accusatives. One could propose that while nominative is assigned via agreement, accusative comes about differently, and thus long-distance assignment via *Cyclic Agreement* is available only to the former. However, there is very good reason to doubt the standard assumption that nominative case depends on agreement with finite T. For example, Sigurðsson (2006b) presents a number of Icelandic examples like those in (7) where a nominative object appears in a non-finite clause:

(7) a. Að líka svona fáránleiki/*fáránleika!
to like:INF such absurdity:N/*A
'To like such absurdity!'

b. Ekki ÞIÐ/*YKKUR fara líka!
not you:N.PL/*A.PL leave:INF too
'Please, don't YOU leave too!'

Note that (6a) above fits into this category as well. What is crucial about these examples is not just that we have nominative in a non-finite embedded clause. After all, 1a has such a thing as well. The difference here is that the embedded nominative does not and cannot trigger agreement on a finite

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i. Þeir töldu líklega hafa verið veidda fjóra laxa
they believed probably have been caught four salmon:**A.PL**
'They believed there to have probably been caught four salmon.'

If such subjects never leave the embedded vP phase, as the word order would suggest, then they are not local to matrix v for purposes of accusative assignment, and we would have an instance of long-distance accusative. This construction is, however, mysterious for other reasons. It is an instance of a more general phenomenon which Sigurðsson (2000) calls 'subject float', involving indefinite subjects of passives and unaccusatives in clauses where something else fills Spec-CP (expletive *það* or a topicalized XP) or CP is absent entirely (as in these ECM infinitives). Among other things, if the low subjects really are in situ in such structures, it is not clear why they don't violate the EPP, which otherwise seems to hold consistently in the language. Judgment on whether sentences like (i) really involve long-distance accusative assignment must thus be postponed until their structure is better understood.

matrix verb. In (6a) above, the finite matrix verb already agrees with the matrix subject, and in the examples in (7) there **is** no finite verb.

To these we can add a class of examples discussed by Boeckx (2000):

(8) a. Mér fannst/*fundust henni leiðast þeir.
me:D seemed:SG/*PL her:D bore they:N
'I thought she was bored with them.'

b. Mér hefur/*hafa alltaf virst honum líka bækur.
me:D has/*have often seemed him:D like books:N.PL
'It has often seemed to me that he likes books.'

These are more or less parallel to (2d) above, except that there is a quirky dative subject in the embedded clause. This dative intervenes between the embedded object and the finite matrix verb and somehow blocks the expected long-distance agreement. The verb thus shows up in a default 3rd singular form rather than the expected 3rd plural. Crucially however, whatever it is that disrupts agreement here, it has no effect on case assignment: the embedded objects are still nominative, in spite of having nothing to agree with.

Finally, in most nominative-accusative languages, we find the nominative in a wide range of contexts which are in some sense extra-sentential, like citation forms and (at least in some languages) vocatives. Particularly instructive are instances of left dislocation, exemplified for German, Russian, Arabic and Icelandic in (9). We might expect a dislocated DP to agree in case with its coreferent resumptive element, and indeed it often does. Sometimes, however, under language-specific circumstances, this fails, and the nominative shows up:

(9) a. Der/*Dem Hans, mit dem spreche ich nicht mehr.
the:N/*D Hans with him:D speak I not more
'Hans, I don't speak with him anymore.' (German)

b. Vanja/?Vanju, ego ja ne ljublju.
John:N/?A him:A I don't like
'John, I don't like him.' (Russian)

c. al-kitaab-u qaraʔt-u-hu.
the-book-N read-1SG-it
'The book, I read it.' (Arabic)

d. Strákarnir, við þá hafði aldrei verið talað.
boys-the:N with them:A had never been spoken
'The boys, they had never been spoken with.' (Icelandic)

In instances like these, there is again no question of the nominative showing up as a result of agreement. Not only is there no overt agreement, there is no predicate in the local context that the nominative DP could even be abstractly agreeing with. Schütze (2001) argues convincingly that in instances like these, the nominative is appearing in its capacity as the default case, which surfaces whenever normal rules of case assignment fail.[12]

Now, if we need to assume that nominative can appear as a default in order to account for examples like these, there is actually nothing to prevent us from arguing that the 'structural' instances of the nominative are really default nominatives as well. They are not assigned due to agreement with finite T, as we have seen, but simply appear because the conditions for assignment of the other cases are not met. This interpretation is attractive precisely because it provides a principled explanation for why the nominative – and only the nominative – appears to be assigned long-distance. In fact, there is no such thing as long-distance case assignment. As noted above, unlike long-distance agreement such a thing would necessarily violate the PIC. Accusative and the various non-structural cases are assigned under identifiable syntactic and/or lexical conditions, due to relationships with other elements present in the structure. Because of the involvement of other syntactic elements, such assignment strictly obeys locality conditions, and does not apply when those conditions are not met, as we saw in (6a) above. Nominative, on the other hand, is different, because it is not assigned on the basis of a relationship with an easily identifiable local element. Most of the central examples which have formed the basis for the discussion of case were consistent with the idea that nominative depended on agreement with finite T. This led to the impression that examples like (1a) require long-distance case assignment. However, once we understand that the nominative-agreement connection was illusory, we can see that such examples simply involve a nominative appearing as a default, just like (7) and (9d) where no confusion is possible because there is no agreement. Even in a simple transitive sentence like (3a), where there is local agreement between the nomina-

[12] Note that I am talking here about morphological case, not case in the sense of syntactic DP licensing. It has been amply demonstrated that the two are independent (see e.g. Marantz 1991; Harley 1995; Schütze 1997; Sigurðsson 2003; McFadden 2004; Bobaljik 2006; and also Legate 2008 for a recent dissenting view.), and default case is one of the key pieces of evidence. If morphological case were really responsible for licensing, then the availability of a default case would mean that everything would be licensed, and the Case Filter (or its equivalent) would be vacuous (Schütze 2001; McFadden 2004).

tive subject and the finite verb, we can assume that the nominative shows up as the default, unmarked case, not because of the agreement.[13] We can thus maintain the idea that case-assignment is always local within the minimal phase.[14]

4. Accusative case and cyclicity

Sigurðsson (2006b) argues for a similar view on the independence of the nominative case. The central concern of his paper, however, is a different issue which arises when we consider how the accusative is assigned. Adopting an idea presented in different forms by Yip, Maling, and Jackendoff (1987); Marantz (1991) and others, he proposes that there is a dependency relationship between nominative and accusative. The nominative is the independent case of the structural pair, assigned first in a given domain, while the accusative can only be assigned after a nominative is already present.[15] As a simple empirical generalization, this works rather well. If we consider how such a dependency should be implemented in the theory, however, we run into a problem, which Sigurðsson dubs the *Nominative Puzzle*. If the assignment of structural accusative really depends on the prior assignment of structural nominative, then it is counter-cyclic on standard assumptions about where arguments are first-merged in the structure. In a simple transitive clause, V combines first with the object, then one or more functional heads are merged, and finally the subject enters the picture, yielding a standard vP structure, as depicted in (3b) above. This would lead us to expect, if anything, that properties of the subject would depend on properties of the object, because the object is already present at the point in the derivation when the subject is merged. What we see with the structural cases is, however, precisely the opposite. The case of the object apparently

[13] The inverse claim is not necessarily correct. That is, in Icelandic and many other languages there does indeed seem to be a dependency of agreement on nominative case. See Bobaljik (2006) for recent discussion.

[14] See Sigurðsson (2000) and Marantz (2006) for related discussion and conclusions.

[15] This is intended as an alternative to Burzio's Generalization (Burzio 1986), according to which structural accusative depends not on nominative, but on the assignment of an external θ-role. See e.g. Marantz (1991); Woolford (2003); Sigurðsson (2006b); Zwart (to appear) as well as the papers collected in Reuland (2000) for discussion of the relative merits of these and other approaches to the data. See Gehrke (2007) for an attempt to extend the dependency idea to accusative objects of directional prepositions.

depends on the case of the subject, which should not be possible. At the point when the object is merged, the subject is not yet there, and thus accusative cannot be assigned – we do not yet know whether the clause will be transitive, unaccusative or passive, and even if there is going to be a subject, what case it will get.

Sigurðsson (2006b) argues quite rightly that this is out of line with what we expect of the derivation under standard Minimalist assumptions, and that something in our theory must be adjusted so that the inconsistency is avoided. I would like to suggest that the inconsistency arises from the combination of three assumptions:

1. The derivation is strictly cyclic.
2. The assignment of structural accusative depends on the presence of a nominative.
3. Subjects are first-merged higher than objects.

In order to solve the *Nominative Puzzle*, one or more of these assumptions must be abandoned or revised. Sigurðsson chooses to maintain 1 and 2, which leaves him with no other choice but to question the order in which arguments are merged. What he proposes is that the subject originates **lower** than the object in a simple transitive clause, later moving past for reasons independent of case. This allows the structural case on a DP to be determined in purely cyclic fashion at the point when it enters the derivation. As an example, consider what happens in a simple transitive clause. First the subject is merged with the verb. The nominative is the independent case, always assigned first in a clause, thus the subject is assigned nominative. Then the object is merged, and since the subject is already present and bears nominative, the object can be assigned the dependent accusative. Each DP gets the correct structural case, as soon as it enters the derivation, and in a way that respects cyclicity.

Nonetheless, while Sigurðsson's *Low Nominative Hypothesis* works as a technical solution to the *Nominative Puzzle*, it faces significant problems. For one thing, the movement that gets the subject from its low starting position to a place above the object is implemented in a somewhat ad hoc fashion. After the object has entered the derivation and received its accusative case, a series of functional heads are merged, including T, Asp and crucially one or more heads which agree with the object. As a result, all of the active features on the object will have been checked or valued, and the object is "frozen in place". The subject, on the other hand, still has unchecked *φ*-features. At this point, a Num head is merged, which targets these unchecked features on the subject, and since the *φ*-features on the object have

already been matched, it intervenes, but only inactively. Sigurðsson proposes then that inactive intervention as in this case does not block agreement entirely, but does disrupt it enough to drive movement: the subject must move past the inactive object in order to match properly with the Num head, and hence we find the subject surfacing above the object in normal transitive clauses. On a technical level this works, but it remains a bit mysterious why inactive intervention should have precisely this movement deriving effect and not another. Note furthermore that the reordering process depends on the stipulation that the Pers and Num heads related to the subject be merged higher in the structure than those related to the object, since otherwise the movement-driving agreement across an inactive intervener would never come about. Considering that the relative order of the arguments at first merge is precisely the opposite, this is not a trivial stipulation. The lack of principled motivation for these two theoretical assumptions is especially suspicious as the mechanism they derive happens to drive precisely the movement that is required to undo the unwanted word-order effects of the *Low Nominative Hypothesis*.

Perhaps more importantly, however, the revision of the first-merge order of subjects and objects is not sufficiently supported. The standard assumption that verbs are more tightly connected to their objects than to their subjects is backed up by considerable evidence (see e.g. the standard discussions in Marantz 1984; Kratzer 1996), which Sigurðsson (2006b) does not really address. The point is not that the standard view is sacrosanct, but that it is well enough supported that we should be hesitant to give it up. I thus submit that an alternative solution to the *Nominative Puzzle* which allows us to retain a reasonably familiar-looking VP would be preferable to the *Low Nominative Hypothesis*.

5. Accusative case depends on structural case

Let us then reconsider the conundrum presented to us by the combination of cyclicity, case dependency and the relative position of subjects and objects. I would suggest that the most uncertain point in this constellation is the dependency relationship between nominative and accusative case. What makes it clearly problematic, as Sigurðsson formulates it, is that it involves the two cases directly. We cannot determine the case on the object until we have made precisely the same determination on the higher subject, and this will violate cyclicity no matter what we do. However, there is evidence that this formulation is not quite correct. Consider again what happens in ECM sen-

tences like (4a) above, repeated here as (10a). It is clear that the accusative on the embedded subject *hana* must depend on the matrix subject *Ég*, and as noted above, this presents no problem for locality. Matters are not so obvious, however, for the embedded object *myndina*. One might imagine that it too depends on the matrix subject, which is after all the only nominative argument in the sentence – but this would be non-local. The embedded object never raises out of the embedded vP, or even to its specifier, thus it remains firmly within the lowest phase. The matrix subject, on the other hand, is in a higher phase from the beginning, starting out in the specifier of the matrix vP. Crucially, it does not enter the derivation until after the lower phase has been sent to Spell-out. Without violating the PIC, the accusative on the embedded object *myndina* thus can only depend on the embedded subject *hana* – specifically on its first-merge position in the specifier of the embedded vP.

(10) a. Ég tel hana hafa séð myndina.
I:N believe her:A have seen picture-the:A
'I believe her to have seen the picture.'

b. Við töldum henni hafa leiðst strákanir/*strákana.
we:N believed her:D have found-boring boys-the:**N/*A**
'We believed her to have found the boys boring.'

That this is indeed the case can be seen again from the comparison of (5b) and (6a) above, collapsed together here as (10b). The clause embedded under the ECM verb has a quirky dative subject, and under these circumstances the embedded object is marked nominative, not accusative. If the case on embedded objects in ECM clauses depended on the matrix subject, we would expect the same results here as in (10a), since in both the matrix subject is a structural nominative. The fact that we get a difference shows that it is the status of the embedded subject that matters, just as locality predicts.

What is crucial for our consideration of the *Nominative Puzzle* is that in sentences like (10a) we have a structural accusative depending not on a nominative, but on another structural accusative. The correct generalization thus seems to be that structural accusative can only be assigned in the same phase as another, higher DP with structural case. Which of the two structural cases that other DP bears is irrelevant.[16] What this means, as I will argue in the following sections, it that the dependency is not necessarily counter-cyclic.

[16] Sigurðsson also assumes that the embedded accusative in examples like (10a) depends on the embedded subject, not the matrix subject. However, he assumes

6. Structural case marking is structurally predictable

While the precise identity of the case on the subject should not be known before the identity of the case on the object, some information about the subject could be available at the time that case is determined for the object. This is so if we adopt a realizational view of morphology like Distributed Morphology (Halle and Marantz 1993; Embick and Noyer 2007) and assume that the actual morphological cases are assigned post-syntactically, in the branch of the derivation leading to PF (as Sigurðsson 2006b, himself does: fn. 6, p. 296; see also McFadden 2004). Under such assumptions, we can revise our expectations about exactly when all of the necessary information must be available. There are in principle (at least) two cycles for the construction of each phase. First comes the narrow syntactic cycle, which builds up the structure of each successive phase, sending it off when it is complete to PF and LF for further processing. We then have a second cycle on the PF branch, during which operations take place affecting the form of an utterance, but not its interpretation, e.g. linearization, morphological merger, impoverishment and vocabulary insertion (see especially Embick and Noyer 2001, for relevant discussion). In such a system, we would expect that the determination of morphological cases need not be completed until sometime in the second cycle.[17] This means that at the time when case is determined for a particular DP, information about higher portions of the structure will in principle be available, as long as it comes from the first cycle. Information about higher elements from the second cycle will still not be available, thus it should still be impossible for the case on a lower DP to depend directly on the case of a higher DP. However, it **should** be able to depend on the syntactic status of the higher DP. Crucially, this is sufficient to determine whether a higher DP will ultimately receive a structural case, and thus can serve as the basis for the dependency of structural accusative.

A great deal of recent work has argued that DPs bearing various kinds of non-structural cases are associated with specific positions in a syntactically articulated argument structure. For example, dative verbal arguments have been convincingly argued to be introduced by applicative heads in a variety of languages (see e.g. Pylkkänen 2002; Cuervo 2003; Schäfer 2005;

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that ECM subjects initially have nominative, which is only later "overwritten" by the acussative. The determination of case on the embedded object takes place before the overwriting, so the dependency on the nominative is maintained.

[17] Again, it should be noted that syntactic DP licensing is an independent matter and would in fact belong in the first, narrow syntactic cycle.

Sundaresan 2006; and the papers collected in Hole, Meinunger, and Abraham 2006). The standard external argument position, on the other hand, never seems to host arguments with non-structural cases. Consider that the clearest and least controversial generalization about quirky and inherent cases in Icelandic and German is that they are never assigned to agentive subjects (Yip et al. 1987; Sigurðsson 1992; Fanselow 2000; Jónsson 2003, and many others).

The instances of non-structural cases which most look like they are truly lexical – in the sense that they are not predictable from the position where a DP enters the derivation – involve internal arguments (see Woolford 2006, for recent discussion of this issue). E.g., a number of verbs in Icelandic unexpectedly assign dative to what look like typical, internal-argument themes, including transitive *kasta* 'throw' and unaccusative *hvolfa* 'capsize'. These are the sorts of examples which could potentially cause problems if we want to determine based on a DP's syntactic position whether it is going to be assigned a structural case. Arguments of these types would seem to be introduced as normal complements of the verb – a position which is typically associated with structural case. Yet they are marked with non-structural case. Interestingly enough, however, DPs in this position turn out to be irrelevant for the purposes that we are discussing here – they never play a role in the determination of structural case on lower arguments. Consider why this is. First of all, there is no additional position, which is within the VP, yet below the complement of V, where additional DPs could be introduced and be assigned a structural case.[18] Verbal complements could thus only potentially affect case-assignment to DPs in embedded clauses, i.e. in ECM configurations. There are, however, apparently no verbs which simultaneously take a DP complement and an ECM complement – presumably because both would be vying for the same structural position. Thus the only DPs that can potentially be relevant for the determination of accusative case on a lower DP are those introduced outside the VP proper, in the vP layer.

[18] DPs which do appear to be introduced in such a low position always seem to bear non-structural cases, perhaps because the relevant structures involve PPs. Included in this category would be e.g. the dative with German Acc-Dat verbs like *aussetzen* 'expose' (Haider 1993; McFadden 2004: ch. 4), and the various classes of Icelandic verbs taking dative or genitive objects below the structural accusative direct object (Zaenen, Maling, and Thráinsson 1985; Sigurðsson 1992).

7. The details

If this is correct, the choice between structural nominative and accusative on a DP can indeed depend on whether a higher argument will have a structural case, without violating cyclicity. If there is a higher filled Spec-vP within the same minimal phase, accusative is assigned (see also Marantz 2006). Otherwise, nominative appears as the default.[19] To see how this can work, let us consider the derivations of the crucial sentence types discussed above. We begin with our simple transitive (3a), repeated here as (11a), along with the associated structure repeated in (11b) with slight modifications.

(11) a. Þeir völdu hana.
they:N chose:PL her:A
'They chose her.'

b. [$_{vP}$ **Þeir** v [$_{VP}$ völdu **hana**]]

When the object is considered during the morphological cycle, the subject DP will already be present in Spec-vP, though nothing will yet be known about its morphological properties, in particular its case. The fact that it is in Spec-vP is sufficient to know that it will receive a structural case and triggers the assignment of structural accusative to the object *hana*.[20] The subject itself will be considered for case in the next phase up, after having moved to Spec-TP (not shown in (11b)). As there is no higher DP of any kind in the structure, accusative assignment will fail, and nominative will appear as the default, correctly yielding *þeir*.

As a contrast, consider the superficially similar sentence (12a) (from Boeckx 2000). The case marking comes out quite differently here, and the structure in (12b) shows my analysis of why:

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[19] If the featural make-up of the v head unambiguously determines whether it will take a specifier or not, this could potentially be the trigger for accusative assignment rather than the presence of the DP itself. In that case, accusative assignment would actually be triggered by features on v, as in Chomsky (2001) and related accounts. However, unlike for Chomsky, agreement would not be involved, and the assignment would crucially occur post-syntactically. Nominative 'assignment' as a default in my system of course remains completely different than what is standardly assumed.

[20] The actual mechanism assigning the structural accusative is of course blind to the fact that the subject DP will eventually get a structural case and depends solely on its position in Spec-vP.

(12) a. Henni leiddust þeir.
her:D bored they:N
'She was bored with them.'

b. [$_{vP}$ Ø v[$_{ApplP}$ **Henni** Appl [$_{VP}$ leiddust **þeir**]]]

The verb *leiðast* 'be bored by' assigns quirky dative to its subject, which by hypothesis is merged in the specifier of an applicative head. The actual dative will not yet have been assigned to *henni* at the point in the derivation when the case for the object is considered, yet it will nonetheless be clear from the structure – in particular the fact that *henni* is in Spec-ApplP – that there will be no higher structural-case-bearing DP in the phase. Crucially, Spec-vP is empty, thus the condition for the assignment of structural accusative to the object is not met, and nominative is assigned as a default, yielding *þeir*.

Consider next our basic ECM example (4a), repeated here one more time as (13a), with the slightly modified structure in (13b):

(13) a. Ég tel hana hafa séð myndina.
I:N believe her:A have seen picture-the:A
'I believe her to have seen the picture.'

b. [$_{vP}$ **Ég** v [$_{VP}$ tel [$_{TP}$ **hana**$_i$ hafa [$_{vP}$ *hana*$_i$ v [$_{VP}$ séð *myndina*]]]]]

Accusative on the embedded object *myndina* will be triggered by the presence of (the lower copy of) the matrix subject *hana* in the embedded Spec-vP, essentially just as in a simple transitive sentence.[21] Remember that at the time this occurs, the embedded subject *hana* will not yet have had its own case determined. So the fact that it will end up accusative, whereas *þeir* in (11a) ended up nominative, is completely irrelevant. Both subjects started out in Spec-vP, and thus license the assignment of dependent structural accusative to the objects below them. Where things get interesting here is of course in the assignment of case to the embedded subject itself. This will occur on the morphological cycle of the higher phase, after *hana* has raised to the embedded Spec-TP (or higher). The matrix subject in the matrix Spec-vP is sufficiently local, and thus we again get structural accusative. The determination of case for the matrix subject is the same as in (11a).

[21] For clarity, I have put the DPs involved in the lower dependency in italics, and those involved in the higher dependency in bold.

Finally, consider again our example of ECM on top of quirky case, repeated here as (14a), with the revised structure in (14b):

(14) a. Við töldum henni hafa leiðst strákanir.
we:N believed her:D have found-boring boys-the:N
'We believed her to have found the boys boring.'

b. [$_{vP_1}$ **Við v** [$_{VP}$ töldum [$_{TP}$ **henni**$_i$ hafa [$_{vP_2}$ Ø v[$_{ApplP}$ *henni*$_i$ Appl [$_{VP}$ leiðst *strákanir*]]]]]]

As in (12a), accusative assignment to the embedded object fails because the embedded subject is introduced as the specifier of an applicative head, and Spec-vP is empty. In this case there will eventually be a higher DP that will receive structural case – the matrix subject – but it will not be merged until the higher phase is constructed, crucially after the stage in the derivation when the embedded object is being considered for case. The embedded subject itself receives dative case on the strength of having been introduced in Spec-ApplP, and simply does not come under consideration for a structural case. It does raises to Spec-TP to satisfy the EPP, but this is unrelated to case. Finally, the matrix subject receives nominative like the others above: it is first-merged in a position that is not associated with a non-structural case, thus it is open to a structural case. There is no higher DP in the structure to trigger assignment of accusative, and thus nominative appears as the default.

8. Conclusion

I have argued that it is possible to analyze morphological case-assignment in a purely local, cyclic fashion, without comparison of parallel derivations, violations of the PIC or unorthodox assumptions about phase structure. Crucial to the success of the account are a series of both theoretical and empirical considerations. On the theoretical side, I assumed that case is independent of DP licensing and is assigned on a post-syntactic morphological cycle, and that DPs destined to bear structural case can be identified on a purely syntactic basis. On the empirical side, I argued that nominative is the only case which appears to be assigned long-distance, and that it crucially also appears as the default case on DPs for which other case-assignment fails. If any of these assumptions or generalizations are successfully challenged, the analysis presented here must be altered or abandoned.

Of course, the discussion here has had a relatively narrow empirical base, restricted primarily to facts from Icelandic. In part this is due to the practical restriction that relatively few languages have all the characteristics that allow clear investigation of potential long-distance case dependencies (as pointed out in fn. 6 above).[22] Full-fledged ECM in particular seems to be quite rare.[23] However, this is also because my primary goal in this paper has not been to examine the full array of attested case-marking patterns, but to work out what is predicted to be possible if we apply fairly restricted views on locality and cyclicity to the issues of case-assignment. If the generalization I proposed about long-distance case in Section 2 turns out to be incorrect when additional languages are considered, then some revision will be needed – not just in how we handle case-assignment, but also in the implementation of locality restrictions in general.

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[22] Particularly notable is the absence of any discussion of ergative-absolutive languages. There is good reason to believe that ergative is actually an inherent case (see Woolford 2006; Anand and Nevins 2006, for some recent discussion), while the absolutive may well be a morphological default. Without something like the dependency relationship of accusative assignment, it difficult to even construct examples that would challenge the locality of case-assignment.

[23] German for example has an ECM-like construction with causative and perception verbs, but this involves a demonstrably smaller structure than true ECM with different locality properties (Wurmbrand 2002; McFadden 2004). Latin, on the other hand, allows overt accusative subjects of infinitives in a variety of contexts where there is no external source for that case. (vanden Wyngaerd 1994). It is apparently coming from within the non-finite clause and thus again can tell us little about locality.

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