Case and Agreement in Distributed Morphology

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to appear in: The Cambridge Handbook of Distributed Morphology (A. Alexiadou, R. Kramer, A. Marantz & I. Oltra-Massuet, eds.). Cambridge University Press.

In this chapter, we discuss an alternative treatment of morphological case and finite verbal agreement that developed within the paradigm of distributed morphology (DM).[1] According to this treatment, both case and agreement are computed post-syntactically at the PF-branch of the grammar. It thereby deviates fundamentally from the treatment of these phenomena in Government & Binding Theory (GB) and the Minimalist Program (MP) that take them to be reflexes of syntactic processes or operations.[2] The following four central points of deviation will be elaborated on in the following sections.

i) The Case Filter does not hold true – abstract (or syntactic) Case (with a capital C) as a formal licensing requirement for nominal expressions (NPs/DPs) does not exist.[3] Consequently, neither is A-movement driven by the need to receive or check Case nor does Case constrain A-movement. Furthermore, the distribution of PRO is not subject to a theory of abstract Case. Note that in Chomsky's (2000, 2001) system, the Case Filter does not trigger syntactic operations, but it does filter-out sentences and it does have a crucial role in activating NPs (we will come back to this in section 2.2).

ii) Morphological cases (with a small c), and especially structural cases, are not determined by syntactic relations between an NP and a particular (functional) head F (i.e., movement to Spec,F or Agree with F). Instead, the structural case of an NP is determined configurationally, based on whether this NP stands in a local c-command relation with another NP or not, in a particular syntactic context.

iii) Finite verbal agreement does not provide case for its NP-target, but the head that realizes finite agreement searches for a NP with particular case-features.

iv) The feature values underlying case and agreement morphology are determined post-syntactically at the PF-branch of the grammar. To this end, PF interprets the syntactic structures provided by spell-out, and, consequently, case and verbal agreement cannot trigger or interact with genuine syntactic processes. Furthermore, since the interpretative PF-mechanism provides default values as a last resort, genuine syntactic ungrammaticality cannot possibly follow from any failure to compute case and/or agreement values.

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[1] We would like to thank the editors and the anonymous reviewer as well as Omer Preminger and Halldór Ármann Sigurðsson for very helpful comments that improved this paper. All shortcomings are our own responsibility.

The following abbreviations are used in the glosses of example sentences: 1/2/3; first/second/third person; ABS, absolutive case; ACC, accusative case; AOR, aorist tense; CAUS, causative; DAT, dative CASE; DEF, definite; DEM, demonstrative; ERG, ergative case; EXPL, expletive; FEM, feminine; FUT, future tense; GEN, genitive case; HON, honorific; ILL, illative INF, infinitive; LOC, locative case; MASC, masculine; NEG, negation; NOM, nominative case; NPST, non-past; OBJ, object; OBL, oblique case; PASS, passive; PF, perfective; PL, plural; PRTCL, particle; PST, past tense; SG, singular; SUBJ, subject.

[2] The question of whether case and agreement features are assigned in syntax or PF is still under discussion. As far as we can see, the computation of case and agreement in syntax is, in principle, compatible with the overall DM architecture. However, DM's structured PF offers the possibility to treat these as post-syntactic operations. From this perspective, the answer to the question of whether there is any true conceptual or empirical difference between e.g., Marantz's (1991) proposal that case features are assigned in M(orphological) S(tructure) (see section 5) and Baker's (2015) proposal to treat the computation of case as a syntactic process taking place at spell-out in order to enable linearization (see Section 6) is probably negative. What is crucial is that in both approaches, case and agreement features are assigned late, interpreting syntactic structure rather than triggering syntactic operations. See Sections 6 and 9 for further discussion.

[3] We mainly use the term NP instead of DP, but without any deeper theoretical implications. For most of what we have to say this choice is irrelevant. However, the assumption of DPs raises certain issues mentioned in fn. 20.

Since at least some of these points do not necessarily depend on one another, some scholars working on case and agreement which are not committed to (all aspects of) DM only accept a subset of them, as will become clear during this chapter.

2. The Classical Case Theory

2.1 Case in GB

In order to motivate these four points of deviation, we first review the relevant aspects of the classical conception of Case and Agreement in GB and the MP (see Lasnik 2008, Bobaljik & Wurmbrand 2008, Pesetsky & Torrego 2011 for detailed overviews).

'Case Theory' in GB (Chomsky & Lasnik 1977, Chomsky 1980, 1981, 1986, Chomsky & Lasnik 1993) aimed to capture those i) distributional and ii) morphological properties of NPs that do not follow from their lexical properties. Since NPs are overtly case-inflected in some languages only, i) is taken to be the universal aspect of Case Theory (the concept of *abstract [C]ase*) while ii) involves the morphological realization (*morphological [c]ase*) of abstract Case-features. Languages differ in whether they morphologically realize abstract Case-features on all/most nominals (e.g., Icelandic), some (e.g., English pronouns) or no nominal expression at all (e.g., Mandarin Chinese).

The basic assumption underlying i) takes overt NPs to be inherently defective. Therefore, they need to be formally licensed by being assigned abstract Case in syntax. This is reflected in the formulation of the classical *Case Filter*:

(1) **Case Filter** (Chomsky 1981: 175):
*[NP α] if α has no Case and α contains a phonetic matrix (or is a variable).

Abstract Case is assigned to an NP under Government by a Case-assigning head, either at D-structure due to selection of the NP by that head (inherent/lexical Case) or at S-structure due to the NP's structural relation to that head (structural Case). The Case assigners are V, P and finite INFL, where V and P govern their complement and finite INFL governs its specifier. In NOM-ACC languages, finite INFL assigns NOM and transitive V assigns ACC. After George & Kornfilt (1981), the crucial property making INFL a NOM-assigner is its agreement specification (Iatridou 1993 argues that Tense is the decisive feature in some languages). NOM and agreement are thus conceived of as two sides of the same coin, as "nominative is assigned as a concomitant of Agreement" (Chomsky 1981: 172): "AGR [being inherently pronominal, F.S. & E.A.] is coindexed with the NP it governs" and "nominative Case is assigned to (or checked for) the NP governed by AGR" (Chomsky 1981: 259). Different parametric adjustments have been proposed to derive ergative case systems (e.g., Bok-Bennema 1984, Levin and Massam 1985, Bobaljik 1993, Campana 1992, and Murasugi 1992, and, in a MP context, Ura 2000, Otsuka 2006, Legate 2008).

Within these assumptions, the need to satisfy the Case Filter was taken to be the driving force of A-movement, which was conceived of as movement of an NP from a non-Case position into a position governed by a Case-assigning head. The subject position of infinitives is a non-Case position as non-finite INFL is not a governor. Moreover, Burzio's Generalization in (2) (BG) stipulated that a verb lacks the ability to assign structural object Case (in)to its complement if it does not project an external argument.

(2) **Burzio's generalization** (Haegeman 1994: 321; cf. Burzio, 1986: 178-186):
A verb which lacks an external argument fails to assign accusative case.

This allowed for a unified analysis of different D-structure/S-structure mismatches which involve promotion to subject (as with unaccusative verbs in (3a), raising verbs in (3b) and

passives (3c) as well as promotion to object (ECM (3d)).[4] In all these cases, an NP A-moves from the position where it receives its θ-role to a position where it receives abstract Case – thematic licensing and Case licensing are two obligatory but independent constraints that must be fulfilled at different levels (the θ-Criterion applies at D-structure; the Case Filter applies at S-structure, or LF for expletive constructions). Crucially, since lexical Cases are assigned at D-structure and are not subject to BG, NPs marked with lexical/inherent Case are predicted not to undergo A-Movement, a prediction that turned out to be problematic, as we will see.

(3) a. The door$_1$ opened t_1 suddenly.
b. Mary$_1$ seemed [$_{IP}$ t_1 to have written the letter]
c. The book$_1$ was read t_1 with joy.
d. I believe Mary$_1$ with all my heart [$_{IP}$ t_1 to be innocent].
e. John$_1$ decided [$_{CP}$ PRO$_1$/*he$_1$ to eat the cake completely]

Finally, the distribution of PRO was related to the theory of abstract Case. This covert pronoun was argued to be licensed only in ungoverned positions, i.e., it must not receive Case. In (3e), the embedded INFL is non-finite, and the CP-layer prohibits A-movement as well as government by the matrix verb. PRO and overt NPs were thus predicted to be in complementary distribution. Again, we will see that the empirical picture challenges these assumptions.

2.2 Case in the MP

While the basic conception of abstract Case and its relationship to finite verbal agreement was taken over in the MP, their technical implementation changed. When the concept of Government was given up for broader conceptual reasons, early minimalist theories (Chomsky 1991, 1993, a.o.) proposed that not only nominative NPs but also accusative NPs move to the specifier position of a designated functional head above the VP, where features of both, the NP and the functional head are reciprocally checked under specifier-head agreement. These NPs enter the derivation with NOM or ACC Case-features which must be checked against the Agreement Subject (or TP) and Agreement Object (or vP) head, respectively, and these functional heads come with φ-features specifications which must be checked against the φ-features of the NPs. Chomsky and Lasnik (1993) subsume the licensing of PRO under this mechanism by proposing that an infinitival Agreement Subject/T-head assigns a special "null Case" to PRO (see also Martin 2001).

Whether these checked φ-features are overtly realized in the verbal complex as subject and object agreement is subject to parametric variation. In early Minimalism, a further parametric distinction between strong and weak Case-features determines whether an NP moves overtly or covertly to the specifier of its Case-checking head. English subject NPs (and/or the corresponding nominal features of T) have a strong NOM-Case feature and move in overt syntax, while objects (and/or the corresponding nominal features of v) have a weak ACC-Case feature and move only at LF.[5]

The idea of Case-checking via A-movement, could, however, not be upheld. Many NOM-ACC languages allow nominative NPs triggering verbal agreement to stay inside the VP,

[4] With the rise of the *VP-internal subject hypothesis* (Koopman & Sportiche 1991), the movement of the external argument from Spec,VP to Spec,INFL also followed from the Case Filter.

[5] Chomsky (1993, 1995) does not, strictly speaking, make use of the term Case-features but rather he refers to nominal features – NP-features, N-features or D-features. We are abstracting away from these in order to make our text accessible to a broader audience. Moreover, we are omitting several technical details. For example, on the assumption that AgrS and AgrO have identical features, also in terms of their strength, when the subject moves overtly and the object doesn't, then this must be because the nominal features of T are strong and those of v are weak. If both the subject and the object move overtly, then this can, in principle, be also due to the strength of the nominal features of AgrS and AgrO.

suggesting that the assignment of NOM with the concomitant subject-verb agreement and A-movement out of the verbal phrase (to Spec,TP or AgrSP) do not necessarily go hand in hand. Pro-drop languages (Romance, Greek) all allow subjects to remain vP-internal showing overt agreement with the inflected verb.[6] Dutch or German passives of double object verbs also illustrate this (Den Besten 1985; Haider 1993). The lower object of double object verbs, which would receive structural ACC in the active, appears with NOM in the passive in (4) and triggers verbal agreement even though it appears in its base position following the dative NP. Crucially, Wurmbrand (2006) shows on the basis of scope freezing facts (not illustrated here for reasons of space) that this nominative NP does not even move covertly.

(4) weil noch nie [$_{VP}$ einer Frau ein/viele Orden verliehen] wurde/wurden.
since yet never a.DAT woman a.NOM/many.NOM medal(s) awarded] was/were
'Since a woman has never been awarded a medal/many medals.'

Similarly, the nominative NP of English expletive constructions as in (5a) stays in the VP. And while the quantified NP that overtly rises to Spec,TP in (5b) shows a scope ambiguity with respect to the negation, the quantified NP in (5a) must take scope below the negation (Chomsky 1991, Lasnik 1995). This suggests that this NP (or its formal features) does not rise covertly to replace the expletive at LF (see McFadden 2004 for further discussion).

(5) a. There are not many students here.
b. Many students aren't here.

Consequently, the computation of structural Case and verbal Agreement was proposed in Chomsky (2000, 2001) to be based on the operation AGREE, which takes place between a functional head F bearing an unvalued feature (the 'probe') and the hierarchically closest constituent C in the c-command domain of F which bears the valued counterpart of this feature (the 'goal'). Finite T, the locus of verbal agreement, has uninterpretable and unvalued φ-features and probes its c-command domain for the closest goal with matching valued φ-features. Once a NP in T's c-command domain matches the features on T, AGREE copies the φ-feature values of this NP onto T ('valuation').[7] At PF, these features are realized as finite verbal agreement in languages with overt subject agreement. In passive and unaccusative sentences (see (3) and (4)), finite T AGREES with the internal argument NP inside VP. Similarly, transitive v is equipped with φ-features, which probe for and are valued by the internal argument NP. The features values thereby acquired by v are realized in some languages as object agreement at PF.

Chomsky (2000, 2001) proposes that Case-feature valuation is parasitic on simultaneous φ-feature valuation. NPs enter the derivation with a semantically uninterpretable and unvalued Case-feature in addition to their valued φ-features. Probes (T, v, …) do not come with a Case-feature, but the Case-feature on a NP is assigned a value as a side effect of φ-AGREE with a probe. The particular Case-feature value depends on the particular probing head. NOM is the value that is parasitic on AGREE with finite T. ACC results from AGREE with transitive v, GEN with a D-head. These Case-feature values trigger the insertion of particular case morphemes at PF in languages with morphological case.[8]

[6] Cf. Koopman & Sportiche (1991) for an early proposal to parametrize this in terms of Government vs. Spec-Head agreement.

[7] In the interest of space and given that our goal here is to provide a general background, we are glossing over many details concerning interpretability and valuation. See Pesetsky & Torrego (2007) and many building on them for illuminating discussion of the two concepts and their relationship.

[8] Non-structural cases are basically not implemented in this framework. As McFadden (2004:ch. 4.2) discusses, a technical integration of non-structural cases under the feature-checking/valuation theory used in Minimalism, which dismissed D-structure, is problematic. He argues in detail that NPs with inherent and lexical case (in the

Uninterpretable and unvalued Case-features on NPs amount to the MP-version of the Case Filter. Uninterpretable features must be deleted before the interface with the semantics (LF) and deletion is assumed to depend on prior valuation. While in early versions of the MP, the Case-feature itself was seen as the trigger of A-movement because this feature could be checked only under specifier-head agreement (Chomsky 1993), Case-features cannot be the ultimate trigger of A-movement if they can receive a value under AGREE (Chomsky 2000, 2001). Instead, A-movement is ultimately driven by EPP-features on functional heads (Wurmbrand 2006 argues that German T differs from English T in not being equipped with an EPP-feature; cf. (4)). However, Case is still assumed to be relevant for A-movement indirectly. EPP-triggered A-movement is assumed to depend on a prior AGREE operation, and AGREE is assumed to be subject to the *Activity Condition* (Chomsky 2000: 123, 127; Chomsky 2001: 6), which states that an XP is accessible for further operations only if it has an unvalued feature. Thus, a NP is visible for the EPP-feature on a functional head only if this head enters φ-AGREE with the NP, and the latter is possible only if the Case-feature on the NP has not yet received a value. NPs whose Case-feature has been valued are *inactive* and cannot undergo (further) A-movement. As pointed out in e.g., McFadden (2004), the syntactic role of abstract Case in this system basically reduces to filtering out *hyperraising* as in (6b) and (6d), where the NP has been raised to the matrix clause even though its Case-feature has already been checked off by the embedded finite T.

(6) a. [$_{TP}$ John$_i$ seems [t$_i$ to be sick]].
b. *[$_{TP}$ John$_i$ seems [(that) t$_i$ is sick]].
c. I believe Mary$_i$ with all my heart [t_i to be innocent].
d. *I believe Mary$_i$ will all my heart [(that) t_i is innocent].

3. Questioning Abstract Case-Licensing

While abstract Case was assumed to determine various grammatical phenomena (see Pesetsky (to appear) for an illuminating and concise summary of the achievements of abstract Case), its conceptual motivation remained unclear. In particular, no convincing answers have crystallized as to what is meant by abstract Case licensing and why NPs, but no other categories, should require such formal licensing. Chomsky (1986) suggested that Case makes an NP *visible* for θ-role assignment at LF, but it remained open why the assignment of a θ-role (which amounts to the integration of an NP into a predicate's argument structure) should need such an intermediate formal licensing step and how PRO, which in GB was assumed to lack Case, could, nevertheless, receive a θ-role. The latter problem was formally eliminated with the assumption in Chomsky & Lasnik (1993) that PRO receives "null case" from non-finite T, but the idea that PRO receives a special case which determines its distribution has a circular flavor in the absence of independent evidence. While Case was technically integrated into the feature checking/valuation algorithm of the MP, its conceptual motivation remained unclear.

terminology of Woolford 2006) are *structurally* distinguished from NPs with structural case. Inherently case-marked NPs originate in specifiers of specific verbal heads (e.g., applicative heads, Marantz 1993, Anagnostopoulou 2003, Pylkkänen 2008, Woolford 2006 and many others), and lexically case-marked arguments are complements of silent prepositions. Similarly, adverbially used NPs marked with so-called 'semantic case' (e.g., instrumental case or different locational cases) are actually complements of silent prepositions which relate the adverbial NP syntactically and semantically to the clause (cf. Emonds 1985: 224-237, Emonds 1987, Nikanne 1993, Baker 2015: 2, fn. 2). These particular structural relations of NPs with inherent and lexical case (including so-called semantic cases) inform both interfaces. CI computes the particular semantics of the NP and at PF, a case algorithm computes the particular morphological case-properties of the NP (see Section 5 on case morphemes as dissociated morphemes). Crucially, inherent and lexical case morphology is, thereby, related to meaning only indirectly (see Section 5 and fn. 19 for discussion).

At the same time, a closer look at the empirical phenomena that were assumed to be deeply connected with the theory of abstract Case revealed that abstract Case, if it exists at all, must be fundamentally disconnected from morphological case (McFadden 2004).

3.1 Case, case and the Trigger of A-Movement

In standard GB and MP, Case is crucially involved in the distribution and the placement of argument NPs. NPs A-move because they lack a Case value in their base-position and they receive a structural Case value in their final A-position. However, languages with a morphologically rich case system and, in particular, languages where NPs marked with inherent or lexical case undergo A-movement retaining their case morphology, challenge these assumptions. While these, so-called, quirky subjects exist in many typologically diverse languages (see McFadden 2004 and the references there for an overview), they are famously discussed and investigated especially in Icelandic. As Zaenen et al. (1985), Maling (1990), Sigurðsson (1991) and much later literature have pointed out, all the distributional/placement phenomena that have been argued to show that Case Theory relates to the (non-)licensing of Case in particular positions are also found in Icelandic, even with NPs marked with inherent or lexical case.

Quirky subjects are NPs marked with oblique case that move into or through the structural subject position, Spec,TP. The literature has provided a battery of tests that converge on the conclusion that the oblique pre-verbal NPs in Icelandic examples such as (7) behave like canonical nominative subjects (e.g., Andrews 1976, Thráinsson 1979, Zaenen et al. 1985, Sigurðsson 1989). For example, just as canonical subjects, they A-move in the context of raising verbs (8a), are realized as PRO in CP-infinitives (8b), but are realized as an overt NP if the infinitive appears embedded under an ECM-verb (8c).

(7) Barninu batnaði veikin.
child-the.DAT recovered disease-the.NOM
'The child recovered from the disease.' (Yip et al. 1987: 240)

(8) a. Barninu virtist batna veikin.
child-the.DAT seemed to.recover disease-the.NOM
'The child seemed to recover from the disease.' (Yip et al. 1987: 240)
b. að PRO batna veikin einum er erfitt.
to PRO.DAT to.recover the.disease.NOM alone.DAT.MASC is difficult
'To recover from the disease is difficult.' (Freidin & Sprouse 1991: 409)
c. Ég tel Jóni hafa batnað veikin/*veikina.
I believe John.DAT to.have recovered disease-the.NOM/disease-the.ACC
'I believe John to have recovered from the disease.' (Freidin & Sprouse 1991: 409)

Furthermore, the nominative NPs following the verb in quirky-subject constructions behave like canonical objects with respect to all relevant diagnostics (Harley 1995a, b, Jónsson 1996, Sigurðsson 2000). But despite being structural objects, their nominative shows the hallmarks of structural case. For example, in contrast to oblique cases, nominative does not depend on the presence of particular lexical verbs. This can be seen with double object verbs as in (9a, b). In the active clause (9a), the indirect object receives inherent dative and the direct object receives accusative. Under passivization in (9b), the indirect object becomes a quirky subject and the direct object remains in the VP but shifts from accusative to nominative. Furthermore, like nominative subjects such nominative objects trigger agreement on the finite verb (and on the passive participle).

(9) a. Þeir hafa selt bóndanum kýrnar.

they.NOM have sold farmer-the.DAT.SG cow-the.ACC.PL.FEM
'They sold the cows to the farmer.'

b. Bóndanum hafa verið seldar kýrnar.
farmer-the.DAT.SG have.PL been sold.PL.FEM cow-the.NOM.PL.FEM
'The cows were sold to the farmer.' (Thráinsson 2007: 239)

Examples as in (8) and (9) thus challenge the idea that raising to subject or object is necessarily correlated with the assignment of structural Case in the landing A-position.

In order to reconcile quirky subjects with standard Case Theory, some authors proposed that quirky subjects are, in fact, licensed by structural Case (e.g., Freidin & Sprouse 1991, Jónsson 1996, Bejar & Massam 1999, Chomsky 2000, 2001, Bošković 2002, Richards 2008). According to this hypothesis, quirky subjects receive lexical C/case in their base position, but this lexical C/case does not license them (it is quirky), so that they have to move to a structural Case position in order to be licensed. Since no further case is overtly realized on quirky subjects, this structural licensing must be fully dissociated from morphological case, i.e., abstract Case and morphological case no longer correspond in any predictive way. As McFadden (2004) points out, however, this idea raises a number of issues: First, it basically turns the concept of abstract Case into a pure diacritic feature for A-movement (cf. the discussion of the EPP below). Furthermore, in order to handle nominative objects in quirky subject constructions, a further complication of the theory of abstract Case is necessary. In e.g., (7) and (9b), finite T would have to provide NOM two times (via multiple AGREE), once to the quirky subject (where it remains without morphological realization) and once to the object (where it is reflected as nominative case).[9] But even this assumption does not suffice. Examples such as (8a-c) show that low nominatives are also licensed in infinitives in the absence of any agreement. Since T is non-finite, there is no functional head present that could be responsible for the assignment of NOM (Yip et al. 1987, Marantz 1991, Sigurðsson 2000, 2006a, McFadden 2009). Note that matrix T is too far away from the low nominative NP under standard locality measures (two vP-borders intervene) and, in addition, this T head already agrees with the matrix subject in (8c). Further, if the object would need licensing from a functional head, we might actually expect the ECM-verb in (8c) to assign ACC to the object, but this is not possible.

The idea that finite T Case-licenses quirky subjects runs into further non-trivial complications. Marantz (1991) discusses the Icelandic double object verb in (10) where both objects receive lexical case and the higher one can optionally remain implicit (10a). If this verb is passivized, *the highest projected* object must rise to subject. A theory that puts forward the idea that NPs with lexical case need additional abstract Case licensing must identify a vP-internal abstract licenser for the genitive NP in a) and c) which, however, must be absent from b), so that the genitive NP is forced to rise to Spec,TP for licensing. The theory must also identify a vP-internal abstract licenser for the dative NP in a) which must be absent in c) to enforce raising of the dative NP. Even if such a theory could be formulated, it seems suspicious that a lexically marked NP should lack a vP-internal licenser exactly when this NP is the one projected closest to T.

(10) a. María óskaði (Ólafi) alls góðs.
Mary.NOM wished Olaf.DAT everything.GEN good.GEN

b. Þess vas óskað.
this.GEN was wished

c. Henni var óskað þess.
her.DAT was wished this.GEN (Marantz 1991: 18)

[9]Alternatively, these NOM-objects could be licensed independently of T (e.g., by v), but then their nominative would be another instance where licensing and morphological case diverge.

The A-movement properties of quirky subjects have led many scholars (within and outside DM) to conclude that NPs do not A-move into the vicinity of a functional head in order to gain formal licensing from this head, but that such movement is driven by the need of clauses to have subjects, or more generally and technically, because some functional heads (in some languages) need to have an NP as their specifier. Under this perspective, the trigger for A-movement is subsumed under the EPP without any reference to the notion of abstract Case licensing (Marantz 1991, McFadden 2004, Bobaljik 2008, Preminger 2014, Levin 2017b, a.o.). The EPP on T attracts the highest projected NP to the derived subject position, Spec,TP. As a result, the EPP not only derives quirky subjects in Icelandic but also those cases of A-movement originally related to BG in (2). There remains, of course, the question why only some languages have quirky subjects and nominative objects in the strict Icelandic sense (see Ura 2000 and Anagnostopoulou 2003 for some relevant suggestions).

While the EPP is often criticized as being stipulative, descriptive and poorly understood,[10] the very same criticism holds for the concept Case once it is acknowledged that it must be fully dissociated from morphological case and basically serves as a diacritic for A-movement (McFadden 2004).[11] Furthermore, some instances of A-movement such as scrambling and object shift are definitely not driven by the need of Case-licensing since they are optional. Finally, successive cyclic A-movement targets non-finite T heads which are not Case-licensing positions (and could not be under the activity condition). The intermediate movement step suggested by the licensing of the anaphor in (11) follows, instead, if both finite and non-finite T have the EPP property (McFadden 2004).

(11) Mary$_i$ seems to John [$_{IP}$ t_i to appear to herself [t_i to be t_i in the room]].

If Case does not trigger A-movement and is not strictly correlated with morphological case, then little motivation remains for abstract Case.[12] In Chomsky (2000, 2001), the trigger for A-movement had already been handed over to the EPP. However, unchecked Case-features made a NP visible for attraction by the EPP (the *Activity Condition*). Once the Case-feature on a NP is checked, the NP is inactive and frozen in place. As already mentioned, this assumption allows to explain the absence of hyper-raising, i.e., A-movement out of finite clauses, as was shown in (6a-d), and see (12) below. The activity condition is, however, problematic for languages with quirky subjects and the literature has provided two alternatives to prohibit hyper-raising without the activity condition and, thus, without any reference to abstract Case.

The standard account, originating in Chomsky (1973) (and with many technical variants of it since – see Keine (2018) for recent discussion), treats it as a ban on improper movement. In modern parlance, finite clauses are CP-phases subject to the phase impenetrability condition (PIC). In order to be probe-able by matrix T, the NP *John* must move to the phase edge of its CP, an A-bar position. Further movement from an A-bar position to Spec,TP, an A-position, is prohibited. While English does not allow to differentiate between an account based on improper movement and an account based on Case and the activity condition, Keine (2018) argues that

[10] Some work argues that the EPP is conditioned by phonological factors, e.g., Holmberg 2000; Landau 2007; Sigurðsson 2010, Salzmann et al. 2013, Richards 2016, McFadden & Sundaresan 2018.

[11] Similar considerations apply if the EPP-feature is replaced by an *inverse Case Filter* (Speas & Fukui 1986, Martin, 2001, Epstein and Seely, 1999, 2006, Grohmann et al., 2000, Boeckx, 2000, Bošković, 1997, 2002, Bošković 2007).

[12] As stressed by Pesetsky & Torrego (2011), an important caveat concerns the fact that NP-complements in languages like English are licensed in exactly those environments where ACC surfaces in languages like Latin, i.e., as complements of V and P, in contrast to N and Adj. We have nothing to say about this in this chapter. If Case is eliminated, then selection must account for these facts, a move that is not unproblematic in view of the fact that e.g., complements of process nominals like *destruction* require genitive case or insertion of a preposition, not plausibly for reasons of selection.

A-movement in Hindi, which is possible out of non-finite clauses and blocked out of finite clauses just as in English, can only be explained with the former and not with the latter account. The case of A-moved NPs in Hindi is always determined before movement (thus A-movement does not feed case marking), and an account building on abstract Case on top of morphological case is not tenable as it would wrongly predict that A-movement could leave finite clauses. Hindi then provides empirical evidence against the activity condition and leads to the conclusion that abstract Case can and should be eliminated from the theory (see also Bhatt 2005, Nevins 2005, Preminger 2014 for critical discussions of the activity condition).

McFadden (2004) suggests an alternative explanation for the ungrammaticality of hyper-raising in (12b). As (12a) shows, the EPP on matrix T can be satisfied by raising the embedded CP. Since this CP is closer to T than the NP inside of the CP, raising the latter as in (12b) violates the Minimal Link Condition. The contrast between (12c) and (12d) follows if, as standardly assumed, raising infinitives are TPs and only CPs but not TPs are nominal in the sense that they can check the EPP on T.

(12) a. [That John will be sick] is likely.
b. *John is likely that will be sick.
c. John is likely to be sick.
d. *[John to be sick] is likely.
e. *It is likely John to be sick.
f. It is likely that John will be sick.

This leaves (12e) to be accounted for. Marantz (1991) argues that the expletive *it* violates 'last resort' as the NP *John* can rise. However, McFadden points out that this idea would predict (12f) to be blocked by (12a). McFadden suggests that expletive *it* must associate with a phrase that would itself qualify for the subject position (see also Landau 2006; Pitteroff & Schäfer 2019). Thus, *it* can associate with CPs as in (12f) (because (12a) is possible) but not with TPs as in (12e) (because (12d) is impossible).[13]

3.2 PRO has Canonical case

In GB and early MP, the distribution of PRO crucially builds on the theory of abstract Case. While overt NPs must be Case-licensed, PRO is taken to appear only in ungoverned and hence case-less positions (cf. the PRO-Theorem; Chomsky 1981); non-finite T was assumed not to govern the subject. With the decline of government, Chomsky & Lasnik (1993) and Martin (2001) proposed that non-finite T assigns a particular *Null Case* which fits only PRO. However, case-concord phenomena in quite a number of languages disprove that PRO lacks case or receives a particular Null Case. In these languages, subject NPs trigger case-concord on main predicates (e.g., predicative nominals, adjectives and passive participles) and/or secondary predicates (e.g., adjectives, floating quantifiers or emphatic pronouns). Crucially, PRO, although phonetically null, triggers exactly the same case-concord value that an overt subject NP would trigger in the corresponding finite clause. This suggests that PRO is assigned an

[13] Consequently, (i) is grammatical. *For* is a complementizer, thus the associate of *it* is a CP.

i) It is illegal [for tourists to park here].

Under this line of analysis, the examples in (ii), also discussed in Marantz (1991), require as a further constraint that only *there* but not *it* can associate with NPs (see Pitteroff & Schäfer 2019 and references for discussion).

(ii) a. *It arrived a man.
b. *It was sold the porcupine.

ordinary morphological case value and that the distribution of PRO cannot be derived from Case-theoretic considerations (see Fanselow 1991, 2000 for German; Andrews 1990, Sigurðsson 1989, 1991, 2008, Bobaljik & Landau 2009 for Icelandic, see Landau 2006 for a larger language sample and Baker 2014 for more indirect evidence in the ergative language Shipibo). In the Icelandic example in (13) from Sigurðsson (1991), the matrix subject controlling PRO has nominative, and the embedded verb selects a quirky subject in the accusative.[14] Since the embedded clause is non-finite, the quirky subject is realized as PRO. However, the floating quantifier in the embedded infinitive shows accusative morphology. This suggests that the quantifier copies quirky ACC from PRO just as it would do from an overt subject; but this presupposes that PRO has acquired an ACC-value. Crucially, all quirky cases as well as structural nominative can be identified on Icelandic PRO this way (see e.g., 8b).

(13) Strákarnir vonast til [að PRO vanta ekki alla í skólann].
boys-the.NOM hope for that PRO.ACC to.lack not all.ACC in school-the
'The boys hope not to be all absent from school.'

To conclude, if there is a correlation between Case and case, then the null status of PRO cannot be derived within a theory of abstract Case. In fact, most theories of Control no longer relate the distribution of PRO to C/case properties of T but to finiteness and/or agreement properties of the clause (Landau 2004, 2008; Sigurðsson 2008; Sundaresan & McFadden 2009).[15/16]

3.3 Default case

Finally, the observation that languages make use of default case raises a serious problem to the idea that NPs need syntactic Case Licensing. The phenomenon has also been taken as evidence that morphological case is negotiated post-syntactically.

Schütze (1997, 2001) discusses various constructions where NPs are well-formed although none of the standardly assumed Case assigners (a verbal, prepositional or functional head) is present. A small subset of these constructions is illustrated in (14a-c) for English. Left-dislocated NPs, appositions and bare NP-answers to questions are marked with accusative although no canonical accusative assigner is present.

(14) a. *Me/*I*, I like beans.
b. The best athlete, *her/*she*, should win.
c. Q: Who wants to try this game? A: *Me/*I*

Since the set of contexts featuring accusative in the absence of any known ACC-assigner is so heterogeneous, Schütze argues that English uses ACC as a default case to morphologically realize a nominal expression when other canonical rules of case assignment/determination fail to apply. The concept of default case is thus similar to the concept of default agreement in impersonal constructions. In both areas, the conditioning factor for the default is negatively determined. Besides English, only few languages use accusative as default case (e.g., Irish, Norwegian). Most languages use nominative (or absolutive) instead. Furthermore, the

[14] This setup excludes the possibility of case transmission from the controller NP to PRO (cf. Landau 2008, Sigurðsson 2008).

[15] At then end of Section 2.1, we mentioned that a Case-theoretic account to the distribution of PRO predicts PRO and overt subjects to be in complementary distribution. As discussed in Sundaresan & McFadden (2009) and Szabolcsi (2009), this prediction is falsified in many typologically unrelated languages.

[16] English *for*-infinitives as in (i) have traditionally been invoked as evidence for a Case-theoretic treatment of PRO. See McFadden (2004), Landau (2006) and in particular McFadden (2012) for arguments against this view.

(i) Frank campaigned [for {John/*PRO} to buy the beer].

environments in which languages apply their default case vary, often reflecting micro-parametric differences. The existence of default case makes it clear that morphological case cannot be involved in NP-licensing because an elsewhere condition on licensing would make the Case Filter vacuous – no NP could ever fail to be licensed. Furthermore, if default forms are characteristic of the morpho-phonological component, this alludes to the view that morphological case is actually determined after syntax at PF (Marantz 1991; but see Preminger 2014 for the view that such defaults can derive in syntax). In this connection, it is often pointed out that the most common default case, nominative/absolutive is typically also the morphologically most reduced, often fully unmarked case in a language. As we will see later, nominative/absolutive has often been analyzed as the form that emerges in the absence of any morpho-phonological case-feature.

4. BG and Morphological case

Burzio's Generalization (BG) in (2) above aims to relate two syntactic and a morphological observation within the theory of Case. The absence of an external argument NP triggers (by stipulation) the absence of structural object C/case, and the Case filter in (1) forces A-movement of the internal argument to the derived subject position where it receives structural subject C/case (and triggers verbal agreement). Above, we reviewed evidence that A-movement to Spec,TP is not triggered by C/case considerations (but by the EPP-property of the T-head in a language). In this section, we review some counterexamples to the morphological side of BG: cases where accusative is realized, although no external argument is projected. In Section 5, we turn to an account that covers both the original data underlying BG and these counterexamples.

Many scholars pointed out the failure of BG in the context of double-object unaccusatives (e.g., psych verbs; the *preoccupare*-class in Italian which clearly qualify as unaccusative when stative, see e.g., Landau 2010) and passives of double-object verbs where an internal argument receives accusative case in the absence of an external argument. Marantz (1991) discusses the Japanese passive in (15) (see also Woolford 1993 on Latin), where the possessor of the object becomes the derived nominative subject and the object NP is marked with morphological accusative, even though the thematic subject is absorbed.

(15) Hanako$_i$-ga (dorobo-ni) [t_i yubiwa-o] to-rare-ta.
Hanako-NOM (thief-by) ring-ACC steal-PASS-PST
'Hanako had a thief steal her ring on her.'

The English data in (16a, b) make the same point (Woolford 2003). While most speakers of English raise the first object of double-object verbs to subject under passivization, some speakers, especially of British English, also allow raising of the second object. At least one of the two VP-internal NPs in (16a, b) should be analyzed as the direct object (in violation of the abstract Case aspect of BG), and, arguably *beer*, and in particular *him* receives accusative.

(16) a. John was given the beer.
b. The watch was given him for his birthday.

A further counterexample to BG that has raised much interest in recent discussions on case is raising to object in the Turkic language Sakha (Vinokurova 2005, Baker & Vinokurova 2010, Kornfilt & Preminger 2015, Levin & Preminger 2015). In Sakha, a NOM-ACC language where NOM is zero-marked and ACC is marked with the nominal affix *(n)i/y*, subjects of embedded clauses headed by the complementizer *dien* (that) as in (17a) can be marked with nominative or accusative. However, accusative is possible only if the subject appears at the left edge of the embedded clause, i.e., to the left of adverbs like *today*/*tomorrow*. If it appears to their right,

only nominative can appear (17b). (All Sakha examples are from Baker & Vinokurova 2010: 615-619; the glosses are slightly adapted).

(17) a. Min [ehigi/ehigi-ni bügün kyaj-yax-xyt dien] erem-mit-im.
I.NOM you.NOM/you-ACC today win-FUT-2PL that hope-PST-1SG
'I hoped that you would win today.'
b. Min [sarsyn ehigi/*ehigi-ni kel-iex-xit dien] ihit-ti-m.
I.NOM tomorrow you.NOM/you-ACC come-FUT-2PL that hear-PST-1SG
'I heard that tomorrow you will come.'

Baker & Vinokurova argue that the subject marked with accusative originates in the embedded clause and moves (at least) to the edge of the embedded clause. For example, this accusative NP can, on the one hand, be a negative polarity item licensed by negation in the embedded clause, [17] but, on the other hand, it must be disjoint in reference from the matrix subject if it is pronominal, unlike its nominative counterpart which can be coreferential with the matrix subject. The source of accusative must thus be located in the matrix clause. Standard Case theory would identify the matrix verb (or the v-head in the matrix clause) as its source. Strikingly, however, accusative can be assigned even if the matrix clause is manipulated in such a way that it could not assign accusative according to BG, i.e., when the matrix verb is unaccusative (18a) or passive (18b):

(18) a. Keskil [Aisen-y [kel-bet dien]] xomoj-do.
Keskil.NOM Aisen-ACC come-NEG.AOR.3SG that become.sad-PST.3SG
'Keskil became sad that Aisen is not coming.'
b. Sargy [kim-i [daqany tönn-üm-üö dien]] erenner-ilin-ne.
Sargy.NOM who-ACC PRTCL return-NEG-FUT.3SG that promise-PASS-PST.3SG
'Sargy was promised that nobody would return.'

Crucially, if the matrix clause is impersonal in that it has no NP-argument at all, as in (19), the subject of the embedded clause must appear with nominative even if it appears at the edge of the embedded clause.

(19) Bügün munnjax-xa [Masha/*Masha-ny [ehiil Moskva-qa
today meeting-DAT Masha.NOM Masha-ACC [next.year Moscow-DAT
bar-ya dien]] cuolkajdan-na.
go-FUT-3SG that] become.certain-PST.3SG
'It became clear today at the meeting that Masha will go to Moscow next year.'

The examples reviewed above are not captured by BG in (2). We find accusative on NPs which are selected by a verb or A-moved into the vicinity of a verb that does not project an external argument. We may thus conclude that the morphological side of BG is not a perfect generalization either. In fact, such examples point to a different and improved generalization. Structural accusative is not only triggered by the presence of an *external* argument NP, but by the presence of any locally c-commanding argument NP with structural case, whether it is an internal or an external argument. This captures (15)-(19) as well as the morphological aspects that underlie the original formulation of BG. In the next two sections, we turn to a detailed characterization and implementation of this idea.

5. Dependent case and the Disjunctive Case Hierarchy

[17] But see Poole (2022) for criticism of the NPI-diagnostic.

Marantz (1991) developed a particular version of the idea that case systems are organized in oppositions. Structural cases stand in opposition to lexical cases and the latter, if conditioned on an NP, block the assignment of the former to this NP. Lexical case on an NP is conditioned by the idiosyncratic properties of the NP's selector. Similarly, (typically two) structural cases stand in opposition to each other. There is an unconditioned structural case (called *unmarked case*) and a conditioned structural case (called *dependent case*), and the latter, if conditioned, blocks the former. Dependent case on a NP1 is conditioned if NP1 stands in a particular structural relation with a second NP2, and both NP1 and NP2 are subject to structural case marking, i.e., neither qualifies for lexical case. This view of the distribution of structural cases became since known under the label 'dependent case approach' (henceforth DC-approach) or 'configurational case assignment'. Related but conceptually distinct proposals involving *case competition* have been proposed by Zaenen et al. (1985), Yip et al. (1987), Bittner & Hale (1996), Sigurðsson (2000, 2003, 2006a), Haider (1985, 2000), Woolford (2001), a.o..

For the kinds of reasons reviewed in Section 3, Marantz abandons the concept of abstract or syntactic Case as a condition on NP-licensing. Instead, NP arguments are simply licensed by projection (basically θ-role assignment) and extended projection (they A-move due to the EPP). Syntax builds structures without any reference to C/case-features. Case is a purely morphological phenomenon which is negotiated post-syntactically by an algorithm at the PF branch. Due to this overall architecture, the output of the case-algorithm does not filter syntactic structures (i.e., it never leads to ungrammaticality because default case is available as a last resort), and genuine syntactic operations cannot refer to case or case features. However, the algorithm computing morphological case builds on the structures that syntax provides to the PF module, i.e., the algorithm interprets the syntactic output.[18]

In particular, Marantz proposes that the grammar can add, after the syntactic computation, case morphemes to nominal stems in a language particular fashion. That is, only languages with morphological case have case morphemes to start with. Furthermore, English has them only on pronominals, while a language like Russian has them on all nominals. Case morphemes are thus *Dissociated Morphemes* in the terminology of Embick (1997). (See also Halle & Marantz 1993 (especially 2.1. and 3.1.) for extensive discussion of case and agreement in terms of insertion at the level of Morphological Structure to meet universal and/or language-specific well-formedness conditions, resulting in a lack of isomorphism between syntax and PF.) Dissociated Morphemes are nodes that are adjoined after spell-out, but prior to Vocabulary Insertion, to functional nodes in the structure transferred from syntax to PF. These morphemes thus have an effect only at PF but neither in syntax nor at LF.[19] Thus, while (20a) is the structure of a noun

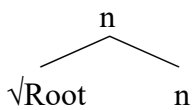
[18] We note that the claim that the case-determining algorithm evaluates configurations of NPs and the claim that this algorithm applies at PF are logically independent. As already mentioned in fn. 2, the recent literature provides proposals adopting the configurational view of case determination while, at the same time, adhering to the view that (the feature specifications underlying) morphological cases are computed in syntax.

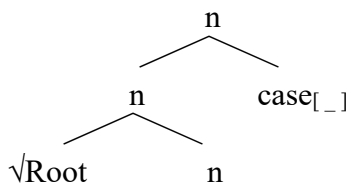
[19] That morphological case does not affect semantic interpretation is generally accepted for structural cases. That idiosyncratic (inherent and lexical) case morphology is also not directly correlated with semantics has been stressed in Sigurðsson (2003, 2009, 2012b) who points out that, across and within individual languages, one semantic relation of an NP to the verbal event can be expressed by different morphological cases and one morphological case is typically used for different semantic relations. NPs marked with so-called semantic cases seem problematic for the claim that morphological case is irrelevant for interpretation. A crucial observation in this context is that some languages use semantic case markers where other languages use adpositions. Compare Finish (ia) with German (ib).

(i) a. Elina käveli koti-in.
Elina walked home-ILL
'Elina walked (to) home.'

b. Erika ging in ihr Haus.
Erika went in her house
'Erika went into her home

when it is transferred to PF, a language particular well-formedness rule can adjoin a case morpheme to N as in (20b).[20]

(20) a. 

b. 

At their incarnation, these case morphemes lack any values. They are augmented with case-feature values by an algorithm that obeys the disjunctive hierarchy in (21) which orders four types of cases. Note that the names of morphological cases must be understood as shorthand for bundles of more abstract binary features. Thus, the case algorithm assigns abstract feature sets which will be phonologically realized later on by rules of exponence. To the extent that these feature sets form natural classes, this allows to derive case syncretisms in particular contexts.[21]

(21) **Case realization disjunctive hierarchy:** (cf. Marantz 1991:24)
- a. Lexically governed case (case idiosyncratically determined by lexical items, e.g., by predicates governing quirky or oblique case including prepositions)
- b. Dependent case (accusative and ergative)
- c. Unmarked case (environment-sensitive; e.g., nominative in the verbal/sentential domain, genitive in the nominal domain)
- d. Default case

For each NP, the hierarchy is run through from a) (the most specific type of case) to d) (the least specific type of case). As soon as the NP qualifies for a particular case, this case is written into the NP's case morpheme. If no specific case can be determined, a default case is assigned in the final step.

The priority of lexical case in (21a) reflects the fact that such cases are idiosyncratically induced via selection and are immune to any syntactic manipulation of their context (such as passivization or movement). So-called inherent cases, e.g., dative assigned by applicative heads or ergative inherently assigned by v/Voice to its specifier (see also fn. 22, 30 for discussion),

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McFadden (2004) argues, based on semantic considerations and syntactic evidence, that NPs with semantic case marking as in (ia) behave like PPs. Accordingly, the locative semantics in (ia) should be attributed to a P-head present in syntax, just as they obviously are in (iib). McFadden reasons that the P-head in Finnish is null and assigns idiosyncratic case morphology to its complement at PF. Thus, the case morphology does not express the semantics but both depend on the P-head. Under an alternative analysis, which McFadden rejects for Finnish but which could be correct for other languages, semantic case-affixes are P-heads that cliticize on or morphologically merge with the nominal stem of their complement (see also Baker 2015: 2 fn. 2). In such a language, the morphology indeed reflects the very same element that introduces the semantics via syntax.

[20] We follow here the presentation Marantz (1991) who does not explicitly distinguish between NPs and DPs. Thus, case could equally be analyzed as a dissociated morpheme adjoined to D. Furthermore, while Marantz analyzes case as a dissociated *node* that gets adjoined to a designated functional node, it can also be analyzed as a dissociated *feature* added to such a functional node (cf. Embick and Noyer 2007 for this distinction). McFadden (2004: 224f.) proposes that case features are dissociated features added at PF to D and that nodes below D (N, A, ...) can be augmented with inflectional nodes into which the case-features are copied via concord operations together with gender and number features. See also Chapter [on NP-INTERNAL AGR] for further discussion.

[21] For example, nominative and accusative is syncretic in German on feminine and neuter NPs but not on masculine NPs. Similarly, nominative and dative are sometimes syncretic in Icelandic. Case syncretisms and theories of abstract case-features are not further discussed in this chapter. See Jakobson (1936), Bierwisch (1967), or, in a DM-context, Calabrese (1996), Halle (1997), Müller (2002, 2004), McFadden (2004, 2007, 2018). See also Chapter [on FEATURE SEMANTICS] for some discussion.

would be located here, too (see Woolford 2006 for a more refined view of the distinction between inherent and lexical case).

Dependent case in (21b) is further determined by the routine in (22) (cf. Marantz 1991:25), which is formulated in terms of the locality concept of government, as was typical at that time. After head-movement of V to I, the verbal complex governs all arguments inside IP.

(22) Dependent case is assigned by V+I to a position governed by V+I when a distinct position governed by V+I is:
   a. not 'marked' (does not have lexically governed case)
   b. distinct from the chain being assigned dependent case
      Dependent case assigned upwards: ergative
      Dependent case assigned downwards: accusative

(22) evaluates pairs of NPs governed by the same V+I combination. (22a) ensures that NPs with lexical case (due to (21a)) do not trigger dependent case on a second NP. (22b) ensures that head and tail of a movement chain are treated as one unit for case assignment and cannot trigger dependent case on each other. Finally, one of the most important achievements of the theory of dependent case is that it allows for a straightforward unification of accusative and ergative case systems and of accusative and ergative case. Accusative is the name for dependent case assigned downwards to the lower of two NPs (typically to an object, but also to embedded subjects in ECM-constructions and in raising out of finite clauses in Sakha (cf. (17a, b), (18a, b)). Ergative is the name for the dependent case assigned upwards (to a subject).[22]

Next, (21c) assigns unmarked case to any remaining NP not yet assigned any case. Unmarked case is traditionally called absolutive in ergative languages and nominative in accusative languages, but they are basically the same entity. The name *unmarked* reflects the cross-linguistic tendency that this case either lacks a phonological exponent or has the phonologically lightest exponent of all cases in a language.[23] Moreover, unmarked case is considered to be environment-specific, such that the unmarked case inside the nominal domain is often different from the unmarked case in the sentential domain (Marantz 1991 treats genitive as the unmarked case in the nominal domain). Finally, the last step of the hierarchy in (21d) captures the default case data in Section 3.3 where NPs appear outside the sentential or nominal domain.[24] As Marantz points out, disjunctive hierarchies which include a default value are characteristic of morphological spell-out processes and, hence, the algorithm working with (21a-d) should be part of the PF-branch of the grammar.

[22]Note that dative in some languages and constructions enters case alternations, suggesting that its inherent or dependent case status varies, depending on the language and/or the configuration; see Harley (1995), Alexiadou, Anagnostopoulou & Sevdali (2014), Anagnostopoulou & Sevdali (2015, 2020), Baker (2015) for dative as dependent case and different definitions capturing this. In the literature, it has been argued that ergative case also has a dual status, qualifying as inherent case in some languages and as dependent case in others (see Baker & Bobaljik 2017 for discussion and references). It is easy to see that in split ergative languages, ergative case is not expected to qualify as inherent case since ergative realization is crucially sensitive to the morphosyntactic context and does not uniquely characterize NPs with particular thematic roles. On the other hand, it is expected that in languages where ergative is systematically realized on single NP arguments of unergative verbs, it qualifies as inherent case (e.g., in systems with active alignment), unless a lower zero argument can be argued to count as a case competitor.

[23] For counterexamples, see e.g., Dixon (1994), Sigurðsson (2012b), Polinsky & Preminger (2014), Baker (2015), McFadden (2018), Anagnostopoulou & Sevdali (2020).

[24] McFadden (2007, 2009) proposes to conflate unmarked and default case. Both are characterized by the lack of (assignment of) any case-feature (see also Sigurðsson 2009, Preminger 2014, Levin 2015, Kornfilt & Preminger 2015). English with its default accusative seems to be problematic for this view, but McFadden argues that actually accusative is the unconditioned case in English while nominative is conditioned by closeness to T.

Two aspects of the above conception of case are worth further noting. First, dependent case on an NP depends on the presence of a second NP subject to structural case marking but not on a particular case-feature being assigned to this second NP. For example, the assignment of dependent accusative does not depend on the assignment of nominative (Marantz 1991, McFadden 2004, 2009). Icelandic ECM-constructions show that this is correct. While the higher accusative in (23a) must be triggered by the presence of the nominative matrix subject (the two being in the same government domain), the accusative on the lowest NP could, in principle, be triggered by the nominative matrix subject or by the embedded accusative subject. That the latter is correct, can be concluded from (23b), where the embedded subject has quirky dative case and the embedded object receives unmarked nominative due to (22a); the matrix subject is too far away to trigger dependent case. (23a, b are from Sigurðsson 1992, 2006a via McFadden 2009: 112f.). Second, PRO not only receives case (cf. Section 3.2) but it enters the calculation of dependent case just as overt NPs. While an internal argument receives dependent ACC in the context of nominative PRO, an internal argument receives unmarked NOM if PRO appears as the subject of a quirky subject verb (23c, from Sigurðsson 2004: 142).

(23) a. Ég tel hana hafa séð myndina.
I.NOM believe her.ACC have seen picture-the.ACC
'I believe her to have seen the picture.'

b. Við töldum henni hafa leiðst strákanir/*strákana.
we.NOM believed her.DAT have found-boring boys-the.NOM/boys-the.ACC
'We believed her to have found the boys boring.'

c. Hún vonast til [að PRO leiðast ekki bókin].
she.NOM hopes for to PRO.DAT bore not book-the.NOM
'She hopes not to find the book boring.'

6. Dependent case and Phase Theory

Within the MP, government and the related concept of a Barrier was replaced by Phase Theory as a measure of syntactic locality (Chomsky 2000, 2001, 2008). The complement domain of a phase head is transferred to the interfaces (spell-out) and, thereby, becomes inaccessible to further syntactic operations, in accordance with some version of the Phase-Impenetrability Condition (PIC) in (24) (Chomsky 2000:108; 2001:13).

(24) In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

All recent work following the logic of a DC-approach takes phases to provide the locality domain relevant for the computation of case.

While a number of authors argue that the case algorithm applies in syntax proper (e.g., Baker & Vinokurova 2010, Preminger 2014, Rezac 2013, Levin 2015, 2017a, Coon & Preminger 2017, Nash 2017, Poole 2015, 2022, Deal 2017),[25] work in DM followed the original

[25] Note that adopting a dependent case algorithm in syntax does not necessarily mean that the Case Filter holds true. For example, Preminger (2014) argues that φ-features as well as case-features that remain unvalued in syntax do not lead to ungrammaticality but receive a default realization at PF. Preminger (2014) argues that the disjunctive hierarchy underlying the DC-algorithm (cf. 21a-d) can be derived from i) an updated view on syntactic feature valuation and ii) basic principles of syntactic structure building. The dependent case rule itself would then be the only ingredient of the DC-algorithm without a known correlate in syntactic theory. Concerning ii), lexical case is assigned in syntax under c-selection by a lexical case assigner. Since, in a strict bottom-up derivation, a verb or a preposition c-selects its object before any second DP is merged in the bigger tree, lexical case assignment necessarily precedes the application of the dependent case rule. In our view, however, at least the precedence of

argumentation that the algorithm applies after spell-out at the PF-branch (e.g., McFadden 2004 et seq.; Marantz 2007; Bobaljik 2008; Schäfer 2008, 2012a, b, Wood 2011, 2017, Myler 2013, Alexiadou *et al.* 2015). Since DM assumes that the spell-out cycles provided by Phase Theory equally restrict the context visible for operations at the interfaces (e.g., Embick 2010:14),[26] phases can also be put in operation as locality domains for a case-determining algorithm applying at PF.

The most detailed investigation of the DC-approach in a phase-based setting has been undertaken by Baker (2015, 2018). He argues that the case-determining algorithm operates at the *point of spell-out* where it translates syntactic information (c-command relations between pairs of NPs within a phasal domain) into PF-visible information (case-features on NPs). Thereby, Baker proposes that the algorithm applies simultaneously with the process of linearization which translates c-command relations into linear order at PF (cf. Kayne's 1994 Linear Correspondence Axiom; cf. Chomsky 1995:334–340; Fox & Pesetsky 2004). As far as we can see, there is no substantial difference between Marantz's (1991) proposal that the algorithm applies at PF and Baker's proposal that it applies at the point of spell-out (see Baker 2015: 74; fn. 38 for basically the same conclusion). As Marantz pointed out, the algorithm must apply *early* at PF in order to access genuine syntactic information. And Baker (2015: 234 fn. 4) agrees that the algorithm applies a system of rules rather different from what is known to drive genuine syntactic computations.[27]

Baker formulates a general schema for the rules of the case-determining algorithm which we rephrase in (25). ((25b) is adapted from Baker (2015:79, 168f., 196); (25a) is adapted from Levin 2017a: 453; cf. Baker 2015: 289 on idiosyncratic case). Similarly to (21a-d) from Marantz (1991), (25a-c) are ordered in such a way that for each NP the algorithm runs from a) to c) but leaves the routine as soon as a rule applies.

(25) a. If NP is (c-)selected by a head which specifies idiosyncratic (lexical, inherent or semantic) case I, then assign I to the NP.
b. If NP1 bears *c-command relationship Y* to NP2 in the *phasal spell-out domain WP* (and *NP2 is not marked with case I*), then assign *dependent case M* to NP1.
c. If NP is not assigned a case in WP, assign it *unmarked case U*.

(25a-c) are the core rules of case determination. All phrases in italics in (25b, c) are considered to be subject to (parametric) variation, thereby forming families of case rules for particular languages. This allows Baker to cover an impressive diversity of case systems.

First, there are different phasal spell-out domains. Baker assumes C, v, P, D, and Poss to be phase heads, and the spell-out domain WP is defined as the complement of a phase head (we refer to phases by naming the phase head followed by the spell-out domain; C-TP; v-VP, P-NP, …).[28]

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inherent case assigned to specifiers (e.g., of an applicative head) is not yet covered and asks for a timing statement such that assignment of inherent case precedes the application of the dependent case rule. However, perhaps such timing resolutions are needed anyway to derive the Icelandic-Faroese contrast discussed in (26a, b) below.

[26] For example, two objects may interact for vocabulary insertion (*allomorphy*) or for context-dependent meaning assignment (*allosemy*) only if they are co-present in the same PF or LF-cycle of computation (Embick 2003, 2010, Marantz 2007, 2013; Anagnostopoulou & Samioti 2013, 2014). See Chapter [on Allosemy].

[27] This does not mean that Baker accepts the full conception of case in Marantz (1991). For example, he follows Baker & Vinokurova (2010) in assuming that in some languages particular cases are assigned to NPs via AGREE with a functional head like T or D (Baker 2015: 293ff.). However, Levin and Preminger (2015) argue that this second, AGREE-based mode of case assignment is not necessary for the data discussed by Baker & Vinokurova (2010).

[28] Further, some Asp-heads define phases in languages with aspectual split-ergative phenomena (see Coon 2010, Coon & Preminger 2012, 2017 for related proposals to derive aspectual splits and even person splits in a phase-based DC-approach).

Second, different spell-out domains can (but do not have to) use different unmarked and dependent cases. In the sentential TP-domain, the unmarked cases are nominative/absolutive and the dependent cases are accusative/ergative. In the VP domain, some languages assign partitive as an unmarked case and dative or oblique case as a dependent case. In the NP-domain, the unmarked case is often genitive. However, languages might use the same unmarked or dependent case in two different domains (e.g., Hungarian and Tamil mark besides sentential subjects also nominal possessors with unmarked nominative (Baker 2015: 168, fn. 53), and ergative is (almost) identical to genitive in Shipibo and Greenlandic, suggesting that we actually face the same dependent case which is assigned upwards in both the sentential and the nominal domain (see Baker 2015: Chapter 4 for a detailed discussion; notice that this way of capturing particular types of case syncretism can be seen as an interesting alternative to other existing approaches).

Third, the bracket in (25b) reflects the idea that even NPs with idiosyncratic case can trigger dependent case in some languages. In Icelandic, they do not, as famously shown by quirky subject constructions as in (26a) where the object receives unmarked nominative.[29] However, in the closely related Faroese, quirky subjects trigger dependent accusative on objects (26b).

(26) a. Mér líkar bókin.
me.DAT likes book-the.NOM
'I like the book.' (Icelandic - Thráinsson 2007:235: fn. 67)

b. Mær líkar hana væl.
Me.DAT likes her.ACC well
'I like her a lot.' (Faroese - Thráinsson et al. 2004:255)

Finally, the particular choice of *c-command relationship* determines ergative and accusative languages. To illustrate this, consider the C-TP-phase (where TP is the domain WP referred to in (25)). (27a, b) provide the specifications used by ergative and accusative languages, respectively (Baker 2015: 80).[30] Deal (2015) and Baker (2015:52) point out that a tripartite case system (as in Nez Perce where transitive clauses have ergative subjects and accusative objects and unmarked case only appears in intransitive clauses) could be derived if a language uses both (27a) and (27b). The three case-systems are sketched in (28) where we leave NPs with unmarked case simply unmarked. Baker (2015) proposes that so-called neutral case systems lack both rules and that so-called marked nominative and marked absolutive languages use *negative* c-command relations (*is not c-commanded/does not c-command*).

(27) a. If NP1 *c-commands* NP2 in the same TP-domain, then assign dependent (ergative) case to NP1.

[29] The fact that object NPs with semantic or lexical case do not trigger dependent case follows if these are actually covert PPs in syntax (cf. fn. 8) and if PPs are phases (Abels 2003). However, not all idiosyncratic cases can be analyzed this way. In particular, quirky subjects in Icelandic rise to TP and, thus, are arguably not PPs (Collins & Thrainsson 1996). For this reason, the algorithm must still refer to idiosyncratic case.

[30] See Baker & Bobaljik (2017) for a collection of arguments that ergative is the structural dependent case in a significant number of ergative languages at least. As has been also discussed in fn. 22 in connection to dative and ergative, this does not preclude that ergative is an inherent case in other languages (assigned by agentive v/Voice to its specifier as proposed by Alexiadou 2001, Woolford 1997, 2006, 2015, Legate 2002, 2008 a.o.). Such inherent ergatives would enter the case algorithm basically as quirky subjects in Icelandic, i.e., in step (21a/25a). See also Polinsky (2016) for a related distinction between structural and inherent ergatives, and Woolford (2015) for important additional considerations. See also Harley (1995), Baker (2015) and Anagnostopoulou & Sevdali (2015, 2020) for structural vs. inherent datives.

b. If NP1 is *c-commanded by* NP2 in the same TP-domain, then assign dependent (accusative) case to NP1.

(28) C-TP-phase	Transitive Clause	Intransitive Clause
Ergative language:	[$_{TP}$ … NP1-ERG … NP2 …]	[$_{TP}$ … NP1 …]
Accusative language:	[$_{TP}$ … NP1 … NP2-ACC …]	[$_{TP}$ … NP1 …]
Tripartite language:	[$_{TP}$ … NP1-ERG … NP2-ACC …]	[$_{TP}$ … NP1 …]

The C-TP phase correctly excludes any case interactions between NPs in different CPs as illustrated in (29). We never find it that NP1 triggers dependent (accusative) case on NP2 or NP2 triggers dependent (ergative) on NP1, because TP2 (bold) is evaluated at an earlier PF-cycle than TP1. However, if a language can move NP2 to the edge of CP2, NP2 becomes part of the C1-TP1 phase. Thereby, NP1 and NP2 are in the same PF cycle (bold in (30)), and they can both be considered by the dependent case rule. This is, basically, the analysis provided by Baker & Vinokurova (2010) for the Sakha data in (17)-(19) in Section 4 where an NP that moves to the edge of an embedded finite clause receives dependent case if the matrix clause provides a case competitor NP (but see Baker & Vinokurova 2010: 617:fn. 19 for the important qualification that complement CPs always shift out of the VP in a way similar to object shift involved in differential object marking in Sakha discussed below). Related edge effects are found in the domain of long-distance agreement. Polinsky & Potsdam (2003) show that in Tsez, a matrix verb can agree with an absolutive NP inside a finite complement clause (if the matrix clause lacks an absolutive NP and) if the absolutive NP in the embedded finite clause is a (primary) topic. As a primary topic, this NP moves (overtly or covertly) to the edge of the embedded clause and is, thereby, located in the same domain as the matrix verb (see also Polinsky 2003 or Bobaljik 2008 for discussion).

(29) [$_{CP1}$ C1 [$_{TP1}$ … NP1 … [$_{CP2}$ C2 **[$_{TP2}$ … NP2 …]**] ...

(30) [$_{CP1}$ C1 **[$_{TP1}$ … NP1 … [$_{CP2}$ NP2 [$_{CP2}$ C2** [$_{TP2}$ … ~~NP2~~ …]] ...

However, the simple picture presented so far becomes more complicated once we follow the standard assumption that v (or its equivalent Voice) is a phase head (following Legate 2002, 2005, many authors (e.g., McFadden 2004, Marantz 2007, Baker 2015) take passive and unaccusative v/Voice to be phase heads, too). Consider an ordinary transitive structure in (31) where the external argument is introduced in Spec,vP. According to the PIC in (24), the complement of v, the VP, is transferred once the phase is completed, i.e., once the phase head v has discharged all features. (Under an alternative formulation of the PIC, VP is transferred when the next phase head C is merged; the difference is irrelevant here). The syntactic derivation of the vP thus involves a point at which both NP1 and NP2 are in the same active domain and could both be accessed by the DC-rule. However, if the case algorithm applies after transfer to PF, only NP2 should be visible at the PF cycle as only the VP is transferred. Similarly, only NP1 should be visible at the next PF-cycle (C-TP). This would predict that both NPs receive unmarked case as they lack a case competitor, the wrong result for canonical accusative and ergative case-systems.

(31) [$_{CP}$ C [$_{TP}$ T [$_{vP}$ NP1 [v **[$_{VP}$ V NP2]**]]]]

To derive such canonical case-systems, the case algorithm active at PF would have to take into consideration whether Spec,vP is filled by external merge of an NP1 or not, even though only the VP is sent to PF. One solution to this problem would be to copy the relevant information about the status of v into the VP before the VP is transferred. For different technical

executions building on an AGREE-relation between the external argument NP and V before spell-out of the VP, see Schäfer (2008, 2012a, b) or the *case matching* formalism in Sigurðsson (2000, 2003, 2009, 2011, 2012a), Wood & Sigurðsson (2014). As an alternative, Wood (2011) proposes that a phase head is sent together with its complement to the interfaces. If v-heads are typed as to whether they take an external argument and if this information remains visible at PF, dependent case can be computed at PF (at least in accusative languages). Finally, one would derive the correct result if phases coincide with their spell-out domain so that the whole vP/VoiceP is sent to PF (e.g., Fox & Pesetsky 2004, Bošković 2016).

On the other hand, there are languages where the original conception of vP-phase and its spell-out domain VP makes exactly the right prediction under a PF-account to dependent case. Baker (2015) discusses languages with (a particular type of) differential object marking (DOM). In Sakha, for example, only specific and definite direct objects receive accusative, while nonspecific and indefinite objects remain unmarked (nominative). Crucially, DOM in this language goes along with word order effects. Unmarked objects follow VP-adverbs (as well as indirect objects), while marked objects preferably precede them (32a, b).

(32) a. [$_{vP}$ Masha v [$_{VP}$ türgennik salamaat-(#y) sie-te].
Masha quickly porridge-ACC eat-PST.3SG
'Masha ate porridge quickly.' (ACC on 'porridge' only if it has contrastive focus)
b. [$_{vP}$ Masha salamaat-*(y) v [$_{VP}$ türgennik sie-te].
Masha porridge-ACC quickly eat-PST.3SG
'Masha ate the porridge quickly.' (Baker & Vinokurova 2010: 602)

These data follow if only the VP of the v-VP phase is sent to PF and considered for dependent case. Since in (32a) *salamaat* (porridge) is the only NP inside VP, it receives unmarked case. The same holds for the subject *Masha* at the C-TP cycle. In (32b), however, the object has moved to the left of the VP-border, thereby receiving its specific/definite interpretation (Diesing 1991). Baker (2015:127, fn. 10) proposes that it tucks in below the base position of the external argument as an inner specifier of vP. Thus, subject and object co-occur in the C-TP phase, and the lower NP is realized with dependent accusative due to (25b). The logic of this analysis predicts that there should also be ergative languages that assign ergative to the subject only if the object is specific or definite, thus leaving the VP-domain. Indeed, Baker (2015:127f.) identifies two ergative languages with such a "non-local, intrinsically relational" DOM-effect (cf. also Woolford 2015).

Note, however, that we now face a contradiction. In Sakha, dependent accusative appears only on transitive structures with definite/specific objects which leave the VP. On the other hand, many ergative and accusative languages feature dependent case in transitive clauses independently of object movement (and the same holds for those DOM-languages that show no evidence for object shift of their differentially marked objects; Kalin & Weisser 2019). Thus, for some languages, the original conception of (vP-)phases gives the right result, while for other languages some amendment is necessary.[31] As a solution to this and other challenges, Baker (2015:149) proposes that v is parametrized between a "soft" and a "hard" phase head.

(33) a. If v is a hard phase head, then the contents of its VP complement are invisible for the subsequent syntactic derivation after spelling out.
b. If v is a soft phase head, then the contents of its VP complement undergo spell out (e.g., they may get their case-features fixed), but they remain active in the derivation.

[31] The idea that v-VP is a phase only in some but not all languages does not seem feasible. See the discussion on Icelandic below.

The effect of the parametrization in (33) is that in languages with a soft v-VP phase, everything inside the VP can be reconsidered in the C-TP cycle for the computation of dependent case, while in languages with a hard v-VP phase only material moved to the edge of the vP-phase can be considered in the PF-computation of the C-TP cycle (this idea is related to Fox & Pesetsky's 2004 conception of spell-out).

To illustrate the effect of these two conceptions of the v-VP phase, we compare the derivation of the Sakha example in (32a) above with its counterpart in a canonical accusative language, say Icelandic. The core syntactic derivation is identical in both languages (34a). (We ignore the OV/VO word order difference between these languages.) At spell-out, all NPs receive a slot for case-features. (34b-c) provide the PF-derivation in Sakha, which has a strong v-VP phase. At the VP-cycle in b, the object NP receives unmarked case-features (or no case feature at all – see fn. 32). At a later step, when the VP is subject to vocabulary insertion, NOM-morphology is realized on this NP. At the TP-cycle in (34c), the VP is no longer present for case calculation (it is no longer bold) and the subject NP receives unmarked case-features due to the lack of a case competitor. When the TP is subject to vocabulary insertion, the subject NP is also realized NOM-morphology. In (34b'-c'), the PF-derivation of a language with a soft v-VP phase is illustrated. At the VP-cycle in b', the object does not receive unmarked case because the VP does not immediately undergo vocabulary insertion.[32] Instead, the VP remains accessible for case evaluation at the next PF-cycle (it remains bold). At this TP-cycle in c', the subject NP and the object NP are case competitors. The object NP receives dependent case features and the subject NP receives unmarked case features. Only then the full TP+VP is subject to vocabulary insertion.

(34) a. [$_{CP}$ C [$_{TP}$ Masha T [$_{vP}$ ~~Masha~~ v [$_{VP}$ quickly porridge eat]]]]
{case: _} {case: _}

b. strong v-VP phase: **[$_{VP}$ quickly porridge eat]** **{case: NOM}**

c. C-TP phase **[$_{TP}$ Masha T** **{case: NOM}** **[$_{vP}$ ~~Masha~~ v** [$_{VP}$ quickly porridge eat]]] {case: NOM}

b'. soft v-VP phase: **[$_{VP}$ quickly porridge eat]** **{case: _}**

c'. C-TP phase **[$_{TP}$ Masha T** **{case: NOM}** **[$_{vP}$ ~~Masha~~ v** **[$_{VP}$ quickly porridge eat]]]** **{case: ACC}**

One might wonder whether the concept of soft phases makes different predictions than the claim that v-VP is a phase only in some languages. Consider to this end Icelandic more closely. Icelandic shows dependent accusative on definite as well as indefinite objects, a fact that would follow in a post-syntactic DC-approach if vP was a soft phase, but also if it was no phase at all. However, ECM-constructions with and without quirky embedded subject (as in (23a, b) above) provide evidence that v-VP is a case domain, hence a phase in Icelandic (cf. McFadden 2004, 2009, and see Wood 2011 and Wood & Sigurðsson 2014 for important empirical updates on

[32] Baker (2015: 150f.) proposes that this delay is due to the last resort character of unmarked case. In languages with hard phases, a DP sent to spell-out must receive unmarked case if it has an unvalued case-feature, i.e., all else has failed, while in languages with soft phases '… all has not failed yet: the language can defer the matter of case on the object waiting to see if it receives case on the TP cycle…". Note that the last resort character of unmarked case would follow for free if unmarked/default case is understood as "no case at all", i.e., unmarked/default case amounts to the realization of a case morpheme to which no case feature has been assigned (for Sakha, in particular, see Kornfilt & Preminger 2015, see also Section 5 and fn. 24).

such structures). We repeat the examples below with a structural description, following the assumption in much literature that the quirky dative NP is introduced by an applicative head below an unaccusative v-head and that ECM-complements are TPs. If the (unaccusative) v-head would not determine a case domain (vP2 in (35b)), the matrix subject should trigger dependent accusative on the embedded theme NP, contrary to fact. This leads to the conclusion that Icelandic can only be treated as a language with a soft v-VP phase and that a soft phase must be taken to remain active for exactly one more cycle but no longer. Then, the matrix subject can trigger dependent case on an ECM-subject, as in (35a), but not on the lower object in (35b).

(35) a. [$_{vP1}$ Ég v [$_{VP1}$ tel [$_{TP}$ hana hafa [$_{vP2}$ ~~hana~~ v [$_{VP2}$ séð myndina]]]]].
I.NOM believe her.ACC have seen picture-the.ACC
'I believe her to have seen the picture.'

b. [$_{vP1}$ Við v [$_{VP1}$ töldum [$_{TP}$ henni hafa
we.NOM believed her.DAT have
[$_{vP2}$ v [$_{ApplP}$ ~~henni~~ Appl [$_{VP2}$ leiðst strákanir]]]]]].
found-boring boys-the.**NOM**
'We believed her to have found the boys boring.'

Baker provides further evidence that soft phases can have an empirical effect. To this end, he compares double-object constructions in ergative and accusative languages which lack any particular case for indirect objects (no dative or other oblique case). In such a situation, the indirect object can in principle resort to one of the two structural cases nominative/absolutive or ergative/accusative. However, Baker reports a striking contrast between the two language types. In ergative languages, both objects receive unmarked absolutive (cf. 36a), while in accusative languages, both objects receive marked accusative case (cf. 36b) (for more examples, see Baker 2015:231).[33]

(36) a. Hilés-e dasín taswíir mó-o-ltir-imi.
boy-ERG girl.ABS picture.y.ABS 3SG.FEM-CAUS-show-3SG.MASC/PST
'The boy showed the girl the picture.' (Burushaski)

b. Ləmma Aster-in hıs'an-u-n asaj-at.
Lemma.NOM Aster-ACC child-DEF-ACC show-(3MASC.SUBJ)-3FEM.OBJ
'Lemma showed Aster the baby.' (Amharic)

Baker argues that this difference is a residual effect of VP being an (albeit soft) spell-out domain. Recall that Baker proposes that the case-algorithm applies simultaneously with the process of linearization which translates c-command relations into linear order. At the VP-cycle, the c-command relation between the indirect object (NP2) and the direct object (NP3) are considered. This c-command relation is evaluated to provide a linearization statement (NP2 precedes NP3), but the languages under discussion do not assign any case value inside the VP. At the TP-cycle, the content of the VP-cycle is still visible, but the c-command relation between NP2 and NP3 is not considered again. Only new c-command relations are considered, namely that NP1 c-commands NP2 and that NP1 c-commands NP3. These c-command relations trigger additional linearization statements (NP1 precedes NP2 and NP1 precedes NP3) and only these new c-command relations are used to compute dependent case. NP1 triggers accusative on both

[33] We are simplifying Baker's discussion here for reasons of space. There are, in fact, ergative languages where the indirect object receives ergative. Baker (2015: 136, 232) mentions Ika and suggests that this language applies an upwards dependent case rule at the VP level assigning ergative to the indirect object in opposition to the direct object.

NP2 and NP3 in accusative languages. But in ergative languages, both new c-command relations trigger dependent ergative on the subject and nothing else. The indirect object, thus, remains unmarked.

7. Case and Syntactic Movement

Above, we reviewed examples from Sakha where syntactic movement feeds the application of the DC-rule. An NP receives dependent case if it moves into the spell-out domain of a c-commanding case competitor.[34] However, most instances of syntactic movement, in particular if they reverse the c-command relation between two NPs, do not influence the distribution of case. It has been argued that this is, prima facie, unexpected if the DC-rule operates at PF (Legate 2008). As a case in point consider scrambling, which is clearly located in narrow syntax as it affects binding and scope relations. If the DC-rule evaluates PF-representations, then scrambling an object across a subject might predict that the subject receives dependent ACC in an accusative language and the object receives dependent ERG in an ergative language. But in reality, case marking always reflects the underlying basic c-command relations between two scrambled NPs.

Some scholars took this as an argument that the DC-algorithm operates in syntax proper where it is interspersed with syntactic structure building (e.g., Baker & Vinokurova 2010, Preminger 2014, Poole 2022). In the proposal by Preminger (2014) and Kornfilt & Preminger (2015), NPs enter the syntactic derivation with an unvalued case feature. Assuming a bottom-up derivation, a case feature value is assigned to an NP as soon as the derivation provides the relevant conditions. A lexical case feature is assigned at the moment an NP is merged as the sister of its lexical case assigning selector. A dependent case feature is assigned as soon as two NPs as-yet unmarked for case stand in a local c-command relation. The concept of 'as-yet unmarked' subsumes both lexical as well as dependent case. It does not subsume unmarked case because unmarked case marking is assumed to reflect that an NP's case feature has not been valued: if an NP's case-feature remains unvalued in the syntax, the derivation does not crash but the NP receives a default case realization at PF (cf. fn. 32). This set-up allows not only to derive the Sakha data reviewed above in a straightforward way. It also derives the correct case distribution in structures involving scrambling. Consider a vP with an internal argument NP2. Once the external argument NP1 is merged in Spec,vP, a dependent case feature is immediately assigned to one of the two NPs, while the other NP remains without case feature (qualifying, thereby, for a realization with unmarked case morphology). While structure building proceeds, NP2 might scramble across NP1, thereby producing a new c-command relation between the two NPs. But at this point one of the two NPs is already marked for dependent case, thereby blocking a further application of the DC-rule.

However, basically the same logic can be applied within a post-syntactic case algorithm based on the minimalist assumption that syntactic movement of an NP produces a chain where head and tail position are occupied by copies of this NP. These chains are transferred to the interfaces. Just as CI computes the thematic properties and the scope properties of the NP based on such chain links, PF can use them to compute the NP's case and its overt phonological

[34] Baker (2014:345f.; 2015:244f.) argues that A-movement feeds the dependent case rule if it brings two NPs into a local c-command relation for the first time in the derivation. This, he suggests, happens in Shipibo unaccusatives if they are combined with an applied argument. The structure is abstractly depicted in (i). The applied argument is embedded in a covert PP which prohibits c-command between NP2 and the base position of NP1. However, NP1 rises across the PP to Spec,TP from where it c-commands NP2. The covert P-head does not constitute a phase and it is transparent for the application of the DC-rule which assigns dependent ergative to NP1 in opposition to NP2. Whether this is the right analysis or not, it illustrates the theoretical effect of c-command within a cyclic derivation of a dependent case system.

(i) $[_{TP}\ NP_1\ T^0\ [_{ApplP}\ [_{PP}\ Ø_P\ NP_2]\ Appl^0\ [_{VP}\ V^0\ \sout{NP_1}\ ]\ ]\ ]$

realization. (That case is assigned at PF to chains was already assumed in Marantz 1991 to make sure that lexical cases are preserved under A-movement). In the case of scrambling introduced above, we need to implement, however, that structural case features are assigned to the lowest chain link of an NP (an earliness condition). While this can be done in a representational or a derivational way, a derivational view intuitively lends itself to earliness. Assume that PF-cycles are not simple representations but also involve a bottom-up derivation, as has actually been proposed for other phenomena considered in DM.[35] On this view, the PF-procedures consider the material in a spell-out domain in a bottom-up fashion. For example, the linearization procedure evaluates pairs of c-commanding elements in a bottom-up fashion, producing, thereby, sequences of linearization statements. If we follow, for the sake of the argument, the proposal by Baker that linearization and case-determination take place contemporaneously, the case algorithm evaluates the very same c-command relations, producing case feature specifications on NPs in a bottom-up fashion, as well. During the derivation, the linearization procedure must be able to identify different copies of the same NP produced by syntactic movement (NP1 c-commands NP2; NP2 c-commands NP1) and resolve the conflict provided by different linearization statements (NP1 precedes NP2 vs. NP2 precedes NP1). But then the case algorithm should equally have access to the information that NP1 c-commanding NP2 has been c-commanded by NP2 before. This information, together with the assumption that a case feature specification is assigned to an NP as soon as the derivation of a PF-cycle provides the relevant conditions obviates a second application of the DC-rule to the pair {NP1, NP2}. More precisely, a case algorithm at PF should have access to the information that one of the two NPs reconsidered for linearization has already received dependent case. And since the DC-rule only applies to pairs of NPs without case specification, a further application of this rule is bled. Basically, this means that copies of an NP carry along the case specification already assigned to a lower copy of this NP. Thus, the following statement adopted and slightly changed from Baker (2015: 272ff.) must be assumed to hold.[36]

(37) Oblique and dependent case-features that are added to one copy in a movement chain automatically belong to all copies in the chain.

(37) must not hold for unmarked case, because, as we have seen in Sakha, unmarked case can turn into dependent accusative under movement. This is captured, most straightforwardly we believe, if unmarked case morphology is analyzed as the realization of an NP in the absence of any case specification, something that can easily be overwritten by movement into a position where case can be specified (Kornfilt & Preminger 2015; see Baker and Vinkourova 2010 and Baker 2015 for two different approaches).

[35] Cf. e.g., Embick 2010: 42: "Two notions of *cyclic* are at play in determining morphological and phonological form in the present framework. The first is an ''inside-out'' kind of cyclicity, which takes the form of the assumption that Vocabulary Insertion applies first to the most deeply embedded node in a structure and then targets outer nodes successively (see Carstairs 1987; Bobaljik 2000; Carstairs-McCarthy 2001, 2003; Adger et al. 2003). The second kind of cyclicity is phase-based in the sense of Chomsky 2000, 2001, and Marantz 2001, 2007 …". Embick treats Vocabulary Insertion and argues that both types of cyclicity play a role in allomorphic interactions. Here, we are suggesting that the two aspects of cyclicity also constrain case determination on NPs.

[36] Baker (2015: Chapter 6) proposes a different way to derive the correct sequencing of the application of the DC-rule and scrambling, pursuing a parallel between scrambled NPs and nominal adverbs, which, in languages where they enter the DC-rule, do so in a particularly restricted way. In particular, he proposes that adjoined elements are spelt-out slightly later than heads, complements and specifiers in a domain. In a scrambling structure (NP1 << NP2 << NP1), the higher copy of NP1 is adjoined and, thus, spelt-out only at a point where the DC-rule has already marked one NP of the pair NP2 << NP1 with dependent case. When the higher copy of NP1 is spelt-out, either its copy or NP2 is already marked for case and the DC-rule is bled. A comparison of the two proposals is beyond the scope of this article.

A further important topic, which we can only mention here, is the potential interplay of the DC-algorithm with cyclic A-bar movement. In the vast majority of languages, cyclic A-bar movement of an NP with unmarked case does not feed the DC-rule, even though such an NP moves, on its cyclic path, into the close vicinity of other NPs with unmarked case. The assumption that C-TP is a phase (Baker 2015) can prohibit only some of these potential applications of the DC-rule. (See Poole 2022 for discussion and for an analysis within a dependent case approach which is assumed to operate in core syntax. Whether his proposal can be re-framed in a DC-algorithm located at the (early) PF-branch is an open question.) However, the ban of such interactions, while frequent, is not universal. In Koryak (a Chukotko-Kamchatkan language), cyclic WH-movement of an NP with unmarked case does, in fact, feed the application of the DC-rule (Abramovitz (ms.)), and, at least under the traditional view, the Sakha examples in (17a)/(18a, b) involve A-bar-movement to Spec, CP, too.
As further relevant observation, many ergative languages only allow absolutive NPs to undergo A-bar movement. Deal (2017) proposes that the A'-probe of these languages is case-discriminating (see Section 8), such that it will only ever attract NPs with absolutive case. If correct, this would presuppose that morphological case features are assigned in core syntax (see Section 8 for further discussion of the question whether case features are relevant for operations in core syntax). As an alternative, one could follow Polinsky's (2016) proposal that ergative NPs that cannot extract are actually encapsulated in a PP.

8. The case/Finite Agreement Relation

In GB and MP, an NP is assumed to receive nominative C/case because it agrees with finite T. However, as shown in (8b, c) or (23b, c), overt NPs with structural nominative can appear in Icelandic infinitives. If agreement with finite T is not the source of nominative, the causal relation might be the opposite such that an NP can control finite agreement in Icelandic only if it has nominative (Sigurðsson 1996).[37] We will see that once this perspective on the relation of verbal agreement and morphological case is broadened to other cases, it allows to derive a typology of different agreement systems. Crucially, if it is indeed correct that case is determined at PF, then this case/finite agreement relation must also be computed post-syntactically (Sigurðsson 2006b, Bobaljik 2008).

Marantz (1991) and Halle & Marantz (1993) propose that, like case morphemes, agreement morphemes are *dissociated morphemes.* At the PF branch, but before vocabulary insertion, a grammar can add AGR-nodes to designated functional heads in the verbal spine to meet language-specific morphological well-formedness requirements. Some grammars lack AGR, other grammars add one or more than one of such AGR-nodes. (see CHAPTER [on NP-INTERNAL AGR] on nominal concord in terms of insertion of Agr nodes as Dissociated Morphemes at PF, see also Norris 2014). In a language where the finite verb agrees with one NP, the AGR-node is adjoined to T/Infl. Thus, (38a) reflects the structure of the finite verbal complex as it is produced by syntactic head movement (alternatively it might be formed by morphological merger after syntax) and (38b) shows the structure augmented by the morphological component. Once the AGR-node is added, the person and number features of a controller NP (an NP governed by the V+T complex in Marantz (1991)) are copied into the AGR-node.

(38) a. T b. T

[37] Or a common third factor could underlie case and agreement. Something close to this idea was proposed in Marantz (1991) who states, besides the DC-algorithm, a dependent agreement algorithm active at PF. However, it turns out that his system overgenerates (Bobaljik 2008) in that it cannot derive the typological gap in the alignment of different case- and agreement systems discussed below.

This treatment of agreement is consistent with the observations that i) agreement is not a universal property of natural languages, ii) phi-features are interpretable on NPs but not on the verbal complex and iii) that structures where no agreement controlling NP is available (e.g., impersonal passives) are not ungrammatical but realize default agreement.

The decisive question is how a language determines which NP in a clause can control AGR. In investigating this question, Bobaljik (2008) provides an indirect argument that agreement is indeed determined at the PF branch. In particular, he shows that the distribution of morphological cases in the domain of V+T (roughly the TP) determines which NP controls AGR, i.e., the algorithm determining the controller of AGR tracks the output of the case algorithm. Crucially, if agreement tracks case, and if case is computed post-syntactically, as Marantz (1991) argued, agreement must be computed post-syntactically, too.

Bobaljik's argumentation starts from the proposal in Moravcsik (1974) that languages build on the implicational hierarchy in (39) in choosing possible controller NPs for their finite verbal agreement node:

(39) **The Moravcsik Hierarchy**
Subject > Object > Indirect Object > Adverb

This hierarchy is formulated in terms of grammatical functions and it is meant to characterize languages as a whole, not sentences in a language. If a language ever shows agreement on the finite verb, some or all subjects will control this agreement. If a language shows agreement with some or all objects, it will also have sentences where the subject controls the agreement. And if a language shows agreement with some or all indirect objects, it will also have sentences where the direct object controls the agreement as well as sentences where the subject controls the agreement. Excluded are languages where only direct objects, only (direct and/or) indirect objects, or only subjects and indirect objects ever control the agreement.

While Bobaljik finds this hierarchy typologically supported,[38] he points out that its predictive power can be strongly enhanced if it is formulated in terms of the categories of morphological cases used in Marantz's disjunctive case hierarchy. Thus, he proposes to replace (39) with (40). (40) is to be read as an accessibility hierarchy. If, in a language, a marked type of case is accessible for agreement, so will be all less marked types of cases.[39]

(40) **The Revised Moravcsik Hierarchy (Accessibility hierarchy of morphological case)**
Unmarked Case > Dependent Case > Lexical/Oblique Case

[38] Note that there is a trend in recent literature, building on Preminger (2009, 2014), Woolford (2010), Nevins (2011) for agreement to be reanalyzed as clitic doubling, even when it looks like agreement in the sense of being obligatory and lacking the interpretational effects traditionally associated with clitic doubling. Cf. also Baker (1996) for agreement as doubling clitics in polysynthetic languages and Alexiadou & Anagnostopoulou (1998, 2001) for subject agreement as clitic doubling in languages like Greek and Spanish. These considerations complicate the question of what counts as case discriminating agreement in terms of Bobaljik's hierarchy in (40).
[39] Bobaljik (2008: 311, fn. 17) restricts his investigation to languages where the verb agrees with exactly one argument, but he points out that his proposal can only be upheld if it can be broadened to languages showing agreement with more than one argument on a single verb. See Bárány (2021) for a first step in this direction.

The benefit of (40) over (39) is revealed in languages where morphological case does not strictly match with grammatical functions. The Icelandic finite verb only ever agrees with nominative NPs, i.e., only the first case in (40) is accessible. And while nominative is the canonical subject case in Icelandic (41a), in quirky subject constructions as (41b) the nominative object controls agreement. Thus, while (39) correctly describes Icelandic as a language with both subject and object agreement, (40) captures under which circumstances subject agreement is replaced by object agreement.[40]

(41) a. Við lásum bókina.
we.NOM read-1PL book-the.ACC
'We read the book.' (Sigurðsson 1996: 6)
b. Henni leiðust strákarnir.
her.DAT bore.3PL boys-the.NOM
'She found the boys boring.' (Sigurðsson 1996: 1)

A similar mismatch between case and grammatical function is, of course, characteristic of ergative case systems and it becomes even more pervasive in split-ergative systems, for example in the aspectually-driven ergative split of Hindi. Hindi shows instances of subject and object agreement (in accordance with (39)), but (40) predicts when they occur, namely when unmarked case, the sole agreement controller in Hindi, appears in object and subject position, respectively.

(42) a. raam-ne roṭii khaayii thii.
Ram-ERG (MASC) bread-ø (FEM) eat.PF.FEM be.PST.FEM
'Ram had eaten bread.'
b. niina bacce-ko ut^{h}aayegii.
Nina-ø (FEM) child-ACC lift.FUT.FEM
'Nina will pick the child up.' (Bobaljik 2008: 309)

The implicational hierarchy in (40) states that a marked type of case is accessible for the single agreement node only if all less marked types of cases are accessible too. Bobaljik finds this prediction confirmed in the typological literature. For ergative case systems, all the agreement

[40] Note though that agreement in (41b) with the nominative object cannot be complete, i.e., 1st and 2nd person nominative objects are ruled out in mono-clausal constructions and are only possible in the presence of default agreement on the matrix verb in bi-clausal constructions (Taraldsen 1995, Sigurðsson 1996 and many building on them). This has been treated as a Person Case Constraint (PCC) effect by many in the literature (see e.g., Anagnostopoulou 2003 and Anagnostopoulou 2017 for an overview; and see Holmberg & Sigurðsson 2008 and others that the two constraints should not be unified). Bobaljik (2008, fn. 11 and 27) addresses the issue and points out that if the ban against 1st and 2nd person objects in these constructions is analyzed as an intervention effect caused by the dative (the verb first tries to agree with the dative, the attempt fails and then it can only agree with a third person nominative which lacks a person feature, see Anagnostopoulou 2003, Bejar & Rezac 2003 and many building on them), then this is incompatible with his approach. To overcome the problem, he reports that the restriction on nominative objects to third person in Icelandic also holds in infinitives where there is no agreement with the embedded verb. He views this as evidence that the Icelandic person restriction is not tied to morphological agreement. The data he presents are in (i) and are attributed to Höskuldur Thráinsson, p.c.:

(i) Við vonumst til [að leiðast hún /*þið ekki].
we.NOM hope.PL for to bore.INF her.NOM/you.PL.NOM not
'We hope not to be bored with her/*you'

However, Sigurðsson & Holmberg (2008: 271: ex. 57) report that the Person Restriction is absent or at least clearly mitigated in examples such as (i), i.e., when no overt verbal agreement is present on the verb.

patterns in (43a-d) are attested in his sources while those in (43e-h) are not (Bobaljik 2008: 305; see also Woolford 1999).[41]

(43) a. no agreement (Dyirbal, Lezgian)
b. ABS only (Tsez, Hindi)
c. ABS, ERG (Eskimo-Inuit, Mayan)
d. ABS, ERG, DAT (Basque, Abkhaz)
e. *ERG only
f. *ERG, DAT, not ABS
g. *DAT only
h. (*ABS, DAT, not ERG)

The hierarchy in (40) provides the set of NPs that have to be considered in a given language for the computation of the agreement controller. If only one case-accessible NP is present in the relevant domain, the computation of the controller is simple. If, however, more than one case-accessible controller is present, a conflict arises. Crucially, this conflict is not resolved based on the hierarchy in (40), i.e., the hierarchy plays no further role in the synchronic grammar of any language. Instead, the conflict is resolved by the principle in (44) (Boabljik 2008:296):

(44) The controller of agreement on the finite verbal complex (Infl+V) is the highest accessible NP in the domain of Infl+V.

Nepali instantiates situations where two different NPs in a clause are both case-accessible. (45a) shows that the highest of two nominative NPs controls agreement. (45b) shows that the subject NP with dependent ergative controls agreement in the presence of an object NP with unmarked case (which, following the source of these examples, Bickel & Yādava (2000: 347f.)), is called nominative). This follows if dependent case is also an accessible case in Nepali and if (44) determines that the structurally higher of two accessible cases is selected as the controller. Note that the logic predicts that Nepali is not a strict subject agreement language, but that a nominative object can control agreement if a higher NP is marked with a case that is not accessible. As Bobaljik (2008) points out, this is correct, cf. (45c). The oblique experiencer NP cannot control agreement, and in this situation the internal argument NP (a theme) with unmarked case takes over control of the agreement node.

(45) a. ma yas pasal-mā patrikā kin-ch-u.
1SG.NOM DEM.OBL store-LOC newspaper.NOM buy-NPST-1SG
'I buy the newspaper in this store.'
b. maile yas pasal-mā patrikā kin-ē/*kin-yo.
1SG.ERG DEM.OBL store-LOC newspaper.NOM buy-PST1SG/*buy.PST3SG.MASC
'I bought the newspaper in this store.'
c. malāī timī man par-ch-au/*par-ch-u.
1SG.DAT 2.MASC.HON.NOM liking occur-NPST-2.MASC.HON/*occur-NPST-1SG
'I like you.'

To conclude, languages differ parametrically in the set of cases accessible for finite verb agreement, but the set of accessible cases is constrained by the implicational case hierarchy in

[41] Baker (2015: 65ff). reports Coast Tsimshian and Semelai as languages with the pattern in (43e). While Baker assumes that functional heads assign case under agreement in some languages, he argues that ergative on the subject of transitive verbs is always a dependent case. For this reason, Baker (2015: 68) rejects the hierarchy in (40) and argues that case discriminating agreement at spell-out follows from language particular statements of the type "T agrees with NP in language Y only if NP has morphological case Z." Clearly, even in the light of these two unpredicted languages, it seems hard to believe that the majority of languages follow the predictions of the implicational hierarchy by chance (cf. also Levin & Preminger 2015:fn. 6 for some discussion). Deal (2015:673) mentions Halkomelem as a potential further instance of (43e), but she suggests a potential analysis that makes this language compatible with Bobaljik's theory.

(40). If more than one accessible NP is present in the same agreement domain, structural height is decisive in that the highest of these NPs is chosen as controller. Note that if the hierarchy in (40) would solve the conflict itself, we would expect that unmarked cases are preferred over dependent cases so that dependent cases trigger agreement only if no NP with unmarked case is present. As Bobaljik points out, such systems do not seem to exist.

Bobaljik points out a further prediction of this agreement algorithm concerning possible and impossible alignments of case and agreement systems. A language with an ergative case-system where only unmarked case is accessible for agreement will produce agreement with the sole (absolutive) argument of intransitive verbs and the (absolutive) object of transitive verbs, respectively (e.g., Tsez, Hindi in (43b)). A language with an accusative case-system where only unmarked case is accessible will produce agreement with the sole (nominative) NP of intransitive verbs and the (nominative) subject of transitive verbs (e.g., English, Icelandic). A language with an ergative case-system where both unmarked and dependent case are accessible will lead to the same agreement system as in accusative languages in that the sole (absolutive) NP of intransitive verbs and the (ergative) subject of transitive verbs trigger agreement (Nepali above shows this behavior in the past tense). Crucially, the opposite system, i.e., an accusative case-system where the verb would agree with the sole (nominative) NP of intransitive verbs but with the (accusative) object of transitive verbs is not attested in the languages of the world (Dixon 1994).[42] Such a language cannot arise under the above agreement algorithm building on (40) and (44) because if dependent accusative is accessible for agreement so must be unmarked nominative. And since an NP with unmarked case by definition c-commands an NP with dependent case in an accusative language, it will necessarily be the nominative that controls agreement.

9. Case and Agreement in Syntax or PF?

Marantz (1991) argues that the DC-algorithm applies post-syntactically because i) the disjunctive case hierarchy underlying it is characteristic of morpho-phonological processes, ii) the dependent case rule is ontologically quite different from known syntactic operations (Merge, Agree, in recent terms) and iii) there are no genuine syntactic processes that refer to the output of the case algorithm. Concerning the last point, Marantz had in mind in particular those syntactic processes that were subsumed under the Theory of abstract Case, like the distribution of PRO or A-movement. Further, if one accepts the conclusion from Bobaljik (2008) that agreement is case-discriminating, then, by transitivity, the algorithm determining the controller of finite verbal agreement must apply after syntax, too (Bobaljik 2008). However, a post-syntactic treatment of case and agreement also faces challenges. For reasons of space we can only mention some of the empirical areas relevant. We discuss in more detail one recent argument against a post-syntactic treatment of case and agreement because, even though we will question the argument on empirical grounds, it provides a blueprint for how the predictions of the post-syntactic approach to case and agreement could be falsified.

Preminger (2014) develops a theory of case and agreement which involves a DC-algorithm of the type proposed in Marantz (1991) and a case-discriminating agreement-algorithm in the sense of Bobaljik (2008). However, he argues that these algorithms must operate in core syntax because the premise in iii) above is wrong.

Preminger rejects the concept of abstract Case and the idea that abstract Case is, in one way or another, involved in the execution of A-movement to Spec,TP. However, he develops the view that, in a subset of languages, verbal agreement is a precondition for *movement to the*

[42] Deal (2015: 669) mentions Kutchi Gujarati and Canela as potential counterexamples. It remains to be seen, however, whether the relevant morphemes in these languages are real agreement morphemes, not weak pronouns, instances of semantic agreement or doubling clitics in the sense discussed in footnote 38.

canonical subject position (MtoCSP). Since MtoCSP is necessarily a syntactic process (it leads to LF as well as PF-effects), and since agreement is case discriminating in the sense of Bobaljik (2008), morphological case must be computed within syntax, too. To this end, he develops a syntactic implementation of the DC-algorithm, followed by a syntactic process of case-sensitive agreement which, in turn, feeds A-movement.

Preminger (2014: Chapter 8) compares two cases of 'defective dative intervention effects'. The first case involves intervention for agreement with the φ-probe on the finite verb. In Icelandic, only nominatives are accessible for finite verbal agreement. If a dative intervenes, agreement with the lower nominative is blocked (46a). However, if the dative moves to the subject position, agreement becomes possible (46b). (Note that the Icelandic data are from drawn from Holmberg & Hróarsdóttir 2003. As Sigurdsson & Holmberg (2008) show, the type of dative intervention in (46a) holds only for a subset of Icelandic speakers; others accept agreement across an intervening dative.)

(46) a. Það finnst (/*finnast) [einhverjum. stúdent] [$_{SC}$ tölvurnar ljótar].
Expl find.SG /*find.PL. some student.SG.DAT computer.the.PL.NOM ugly
'Some student finds the computers ugly.' (Holmberg and Hróarsdóttir 2003:1000)
b. [Einhverjum stúdent]$_1$ finnast t_1 [$_{SC}$ tölvurnar ljótar].
Some student.SG.DAT find.PL computer.the.PL.NOM ugly
'Some student finds the computers ugly.'

Preminger proposes that the Icelandic φ-probe on T is case-discriminating. It searches for an NP with valued φ-features, but feature valuation can be established only if this NP has an unmarked case-specification. In (46a), the probe meets the intervening NP with a dative case feature. This dative NP is not skipped but its inaccessible dative case-feature leads to abortion of the probing process along the lines in (47) (Preminger 2014: 159). Abortion does not yield ungrammaticality, but the T-head receives a default agreement realization at PF.

(47) *FIND$_\varphi$(f)*
Given an unvalued feature *f* on a head H^0, look for an XP bearing a valued instance of *f*. Upon finding such an XP, check whether its case is acceptable with respect to case discrimination:
a. *yes*→ assign the value of *f* found on XP to H^0
b. *no* → abort *FIND$_\varphi$*(*f*) (*and continue with derivation*)

The second type of intervention effect, intervention for A-movement, is illustrated in (48a). In French raising constructions, a dative experiencer blocks raising of the embedded subject. Similar patterns have been observed in Spanish (Torrego 1996), Greek (Anagnostopoulou 2003), Italian (Rizzi 1986). Raising the dative itself is no option either (48b), i.e., French is not a quirky subject language. That indeed movement of the dative is the problem in (48b), not the licensing of the embedded subject, is suggested by examples with a finite complement clause where movement of the dative is still ungrammatical and an expletive must fill the matrix subject position instead (49a, b). (The French data are originally from McGinnis 1998).

(48) a. Jean$_1$ semble (?*à Marie) [t_1 avoir du talent].
Jean seems to Marie have.INF of talent
b. *[À Marie]$_1$ semble t_1 [Jean avoir du talent].
to Marie seem Jean have.INF of talent
'Jean seems (to Marie) to have talent.'

(49) a. *[À Marie]$_1$ semble t_1 [que Jean a du talent].

to Marie seem that Jean has of talent

b. Il semble (à Marie) [que Jean a du talent].
It seems to Marie that Jean has of talent
'It seems (to Marie) that Jean has talent.'

Preminger argues that the two types of dative intervention reviewed above are related, in that intervention for agreement underlies intervention for movement. In particular, he proposes that agreement is generally case discriminating, while *movement to the canonical subject position* (MtoCSP) is case discriminating in some but not all languages, as formulated in (50a, b) (Preminger 2014: 165). In quirky subject languages, MtoCSP is not case-discriminating and the NP checking the subject property (EPP on T) is determined by minimality. In French or English, on the other hand, MtoSCP is descriptively case-sensitive in that only nominative NPs can undergo MtoCSP. Preminger proposes that this case-sensitivity should be seen through the prism of φ-agreement: an NP can move to Spec,TP only if it is targeted by φ-agreement with T, which, in turn, only targets nominative NPs.

(50) *Movement to canonical subject position (MtoCSP): Two typological variations*

a. *In a quirky-subject language*: (*e.g., Icelandic*)
$\text{MtoCSP}_{\text{QSL}}$ = Move (closest DP)

b. *In a non-quirky-subject language*: (*e.g., English, French*)
$\text{MtoCSP}_{\text{NQSL}}$ = Move (XP successfully targeted by $FIND_{\varphi}$)

Thus, MtoCSP in non-quirky subject languages is "in some sense "parasitic" on φ-agreement (e.g., Chomsky 1995:283)" (Preminger 2014:164), though the causal relation has been reversed: it is not that subjects are assigned nominative case; rather, nominatives are selected as subjects.

The contrast between Icelandic and French is supposed to come about as follows. The φ-probe on T searches for an NP bearing φ-features. Being the closest goal, the dative DP matches the probe. But since the probe is case discriminating and does not accept dative case on the goal, agreement is aborted. This leads to default agreement on T in both languages. In Icelandic, Spec,TP can be filled via quirky subject movement which is independent of agreement with T. Thus, the grammar can produce (46b). In French, however, movement to Spec,TP depends on agreement with T by (50b), and since neither the dative nor the nominative NP agrees with T, neither (48a) with the intervening dative nor (48b) can be produced by the grammar.

This proposal makes two predictions. First, the French example in (48a) should become grammatical if the nominative NP does not have to move. This prediction is borne out. In (51), where the NP is indefinite, it can stay in the infinitival complement and an expletive is inserted in the subject position of the matrix clause. Note that expletive insertion is impossible in (48a) because *Jean* is definite.

(51) a. Il semble au général être arrivé deux soldats en ville.
EXPL seem.SG to.the general to.be arrived two soldiers in town
'There seem to the general to have arrived two soldiers in town.'

b. Il semble au général y avoir deux soldats manquants à la caserne.
EXPL seem.SG to.the general to.have two soldiers missing at the barracks
'There seem to the general to be two soldiers missing from the barracks.'
(Boškovic 2007:603)

However, this proposal makes a further prediction, which turns out to be wrong. Recall that intervention for movement presupposes intervention for agreement. As is well known, the dative intervention effects for movement can be circumvented in Romance languages and

Greek, if the dative is a pronoun/pronominal clitic (McGinnis 1998, Anagnostopoulou 2003). This escape hatch effect can be seen in the minimal pair in (52a, b).

(52) a. *Deux soldats semblent au général manquer (être manquants) à la caserne.
two soldiers seem.PL to.the general missing (be missing) at the barracks
'Two soldiers seem to the general to be missing from the barracks.'
b. Deux soldats me semblent manquer à la caserne.
two soldiers me seem.PL missing at the barracks
'Two soldiers seem to me to be missing from the barracks.'

Preminger's proposal predicts that in such contexts where the dative does not intervene for movement, it should also not intervene for agreement. However, the empirical picture does not support this. In (53), plural agreement on the verb is just as bad as it would be in a context like (48) with a plural nominative NP.

(53) Il me semble/*semblent manquer deux soldats à la caserne.
it me seem.SG/seem.PL miss two soldiers at the barracks
'There seem(s) to me to be two soldiers missing from the barracks.'

In this context, we point out that the French expletive *il* is fundamentally different from the expletive *there* in English. While the latter is a locative expletive devoid of any nominal features, French *il* is a pronominal expletive. This pronominal expletive is itself the controller of agreement on the finite verb, as can be seen in minimal pairs such as (54a, b). Thus, it is not clear that French datives intervene for agreement. French is simply a bad case to investigate the point.

(54) a. Trois livres ont été vendus cet après-midi.
three books have been sold this afternoon
b. Il a /*ont été vendu trois livres cet après-midi.
it has /have been sold three books this afternoon
'Three books were sold this afternoon.'

Furthermore, English also poses problems with respect to Preminger's predictions. As is well known, English allows raising across experiencer PPs. Preminger thus predicts agreement to be possible across such PPs, too. To this end, he provides the data in (55), which seem to support this prediction.

(55) a. There seems/??seem [to every attorney$_i$] to be [some client of his$_i$ who is innocent].
b. There seem/%seems [to every attorney$_i$] to be [several clients of his$_i$ who are innocent].
c. [Some client]$_1$ seems [to every attorney] [to t_1 be innocent].

However, Boeckx (2000, 2008) (reporting an observation by H. Lasnik p.c.) points out that experiencer PPs block agreement in English (cf. his data below). While Schütze (2020) points out that Boeckx's statement is too strong as there is in fact speaker variation in this domain, all four speakers of English we have asked accepted only (56b) below. On the other hand, we are not aware of any reports that there are speakers of English that reject (55c), though we have not tested this. Since there is no evidence that those speakers of English who have the judgments in (56 a, b) do not allow overt raising across experiencer PPs, Preminger's proposal faces problems with this variety of English.

(56) a. *?There seem to Mary to be men in the room

b. There seems to Mary to be men in the room

In light of this discussion, we would like to conclude that the evidence from this type of dative intervention is inconclusive, thus not presenting an argument against the post-syntactic view of case and agreement adopted in DM. This does not mean that we have an understanding of dative intervention in the relevant cases, and why this sometimes leads to ungrammaticality and sometimes to default agreement. This ties with a number of further issues relating to the PCC and its nature (is it dative intervention? how does it interact with morphological agreement and the assignment of dependent or unmarked case?), also in connection to the relationship between cases of morphological agreement that have been reanalysed as clitic doubling. Some of these issues have been alluded to in the main text and footnotes (38, 40, 42) and they are far from settled.

10. Concluding Remarks

This chapter aimed to provide an intellectual history of the study of case, ultimately in support of a dependent case view that holds post-syntactically, as originally suggested by Marantz (1991). As has been extensively discussed, the issues of i) whether a dependent case algorithm exists or not and ii) whether it applies in syntax or post-syntactically are logically independent from one another and have been addressed separately in the literature as well as in the preceding sections. Due to the complexity of the phenomenon of morphological case and its connection to licensing as well as the fact that the relationship between case and agreement is a crucial piece of evidence for understanding the point in the derivation in which case is assigned, we have only considered agreement in connection to case and not as a separate morpho-syntactic phenomenon. There is interesting work on many questions raised by agreement in DM and the Minimalist Program, for example, the role of AGREE and agreement in PCC- and related hierarchical effects (see e.g., Anagnostopoulou 2017 for an overview), the relationship between agreement and clitic doubling (Preminger 2009, Nevins 2011, and literature building on them), Agreement mismatches and syntactic vs. semantic agreement (e.g., Bhatt & Walkow 2013, Smith 2017, Wurmbrand 2017), the directionality of Agree and agreement (Zeijlstra 2012, Wurmbrand 2012, Preminger 2013, Preminger & Polinsky 2015, Bjorkman & Zeijlstra 2019, Keine & Dash 2022, Adamson & Anagnostopoulou 2021), long-distance agreement (Bhatt & Keine 2017 for a recent overview and references), Agreement and Concord (Baker 2008, Norris 2014, Bayırlı 2017), among others. These issues have not been addressed in this chapter. Similarly, we have not focused on important aspects concerning the actual realization of case and agreement, such as syncretisms (see fn. 21 for some relevant references), rules of exponence and allomorphy, among others, that have been extensively discussed in the DM literature and are dealt with in other chapters of this volume.

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