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Case

1. Introduction

The Minimalist Program includes the important conjecture that all (or most) properties of syntactic computation in natural language should be understood as arising from either (1) the interactions of independent mental systems or (2) "general properties of organic systems" (Chomsky (2001a)). The study of case morphology and the distribution of nominal expressions in the languages of the world is one of the areas in which generative syntax has made the most profound advances over previous approaches. A large (and increasing) number of studies have identified patterns and principles of great generality — achievements that also shed light on other topics and puzzles. At the same time, it is fair to say that the phenomenon of case represents one of the more outstanding challenges for the Minimalist conjecture. Though case is indeed an area in which complex phenomena can be predicted on the basis of more general principles, these principles themselves look quite specific to syntax and morphology, with little apparent connection to external cognitive systems (not to mention general properties of organic systems).   Our discussion in this chapter reflects the provisional character of the investigation.

2. Case Theory in Government-Binding Syntax

By the late 1970s, it had become clear that the distribution of nominals is governed by special laws cross-linguistically. Though Chomsky and Lasnik (1977) had assembled a structured list of syntactic contexts in which NPs in languages like English are either disallowed or heavily restricted, it remained an open question why these restrictions should hold. Shortly thereafter, Vergnaud (2006), in a letter addressed to Chomsky and Lasnik, proposed that these restrictions in languages like English might be linked to another special cross-linguistic property specific to nominals: the presence of special morphology whose shape correlates with syntactic position — so-called *case* morphology. As Vergnaud observed, the distribution of certain types of case morphology on nominals in languages like Latin appears to match the distribution of nominals in languages like English whose case morphology is sparse or non-existent.

In languages like Latin, Russian, Japanese, and many others, a kind of case called *accusative* (henceforth ACC) is found on the complements of V and sometimes P (cf. (1)-(2)) — but not on the complements of N and A ((3b, d) and (4b, d)).   A complement of N and A either bears a different type of case affix (e.g. *genitive* morphology*),* or else must appear as a PP. The complement to N or A may not appear as a bare nominal (cf. (3a, c) and (4a, c)). The following examples from Latin illustrate this pattern, which is found in many other languages as well:

(1)   **Complement to V (accusative)**
        [$_{VP}$ scripsit libr-*um*]
            wrote book-ACC

(2)   **Complement to P (accusative)**
        [$_{PP}$ ad Hispani-*am*]
            to Spain-ACC

(3) **Complement to N**   **(*accusative)**
    a. [NP amor libertat-*is*]   b. *[NP amor libertat-*em*]
        love liberty-GEN   love liberty-ACC
        'love of liberty

    c. [NP amor [PP in patriam]]
        love   into country
        'love for one's country'

(4) **Complement to A[1]**   **(*accusative)**
    a. urbs [AP nuda praesidi-*o* (Att. 7.13)   b. *urbs [AP nuda praesidi-um]
      city   naked defense-ABL   city naked defense-ACC
      'a city deprived of defense'

    c. [AP liberi [PP a delici-*is*]] (Leg.Agr. 1.27)   d. *[AP liberi delici-*as*]
      free   from luxuries   free luxuries-ACC
      'free from luxuries'

Observations like these suggest the presence in the grammar of rules of *case assignment*. A first approximation adequate for the examples above might be (5):

(5) **Accusative case in Latin-type languages**
    a. V and P assign accusative case to an NP complement.
    b. N and A do not assign accusative case (to an NP complement).

At first glance, some languages — for example, English — appear to lack the phenomena of (5) entirely. Nonetheless, the distribution of complements in English strongly resembles the generalizations captured in (5). As (6)-(10) make clear, English permits nominal complements in precisely those contexts in which languages like Latin assign ACC, and disallows bare nominal complements where Latin disallows ACC (but allows other cases such as genitive, and allows PP complements):

(6) **Facts about the availability of NP complements in English**
    a. V and P allow an NP complement.
    b. N and A do not allow an NP complement.

(7) **Complement to V (NP)**
    [VP wrote the book]

(8) **Complement to P (NP)**
    [PP to Spain]

• [1] Examples drawn from corpora at the Perseus classical languages website (http://www.tufts.perseus.edu). "ABL" stands for "ablative", a case in Latin.

(9)   **Complement to N**   **(*NP)**
        a. [_NP_ love of liberty]   b. *[_NP_ love liberty]
        c. [_NP_ love [_PP_ for their country]]

(10)   **Complement to A**   **(*NP)**
        a. [_AP_ free from luxuries]   b. *[_AP_ free luxuries]

As Vergnaud noted, in languages with case marking of the sort we have been examining, any nominal that is morphologically capable of showing case morphology *must* do so. This observation could be stated explicitly as the *Case Filter* in (11):

(11)   **Case Filter**
        *[NP –case]

The relevance of the Case Filter to languages like Latin is self-evident. Remarkably, however, Vergnaud suggested that the Case Filter is also true of English, even though English lacks non-zero case morphology (at least outside the domain of personal pronouns). In particular, if we assume that English has an "abstract" variant of ACC that may be assigned by V and P, a nominal complement to V or P will receive case (even if no overt morphology reflects this fact), and will satisfy the Case Filter. If we also assume that English, unlike Latin, lacks other cases that may be assigned to nominals (such as the genitive case assigned by N in (3a) and the ablative case assigned by A in (4a)) bare nominal complements to N and A will receive no case specification at all, and will be excluded by the Case filter.

(12)   **Differences between English and Latin**
        a. Case morphology in English is phonologically zero.
        b. English has accusative case, but does not have genitive, dative, ablative, etc. as Latin does.

Phonologically zero case morphology is a phenomenon independently found in languages where the existence of a rich case system is not in doubt. In Russian, for example, though most nouns show overt case morphology much like Latin, there is also a productive class of "indeclinable" nouns. Most of these are foreign borrowings, which, because they display certain non-Russian phonological properties, cannot receive case morphology. Unlike English, but like Latin, Russian is a language that does have cases such as genitive and dative that may be assigned by N and A. Indeclinable nouns may thus appear in all the same positions as their "declinable" counterparts that do display case morphology:

(13)   **Declinable vs. Indeclinable nouns**
        a. [_VP_ vidit mašin-*u*]   b. [_PP_ v   mašin-*u*]   *declinable*
            sees car-ACC   into car-ACC

        a'. [_VP_ vidit kenguru]   b'. [_PP_ v   kenguru]   *indeclinable*
             sees kangaroo-ACC   into kangaroo-ACC

c. [NP uničtoženie mašin-*y*]
    destruction car-GEN
	d. [NP ljubov' [PP k mašin-*e*]]
	    love to car
		declinable

c'. [NP uničtoženie kenguru]
    destruction kangaroo-GEN
	d'. [NP ljubov' [PP k kenguru]]
	    love to kangaroo
		indeclinable

e. [AP dovolen mašin-*oj*]
    satisfied car-INSTR
	f. [AP serdit [PP na mašin-*u*]]
	    angry at car
		declinable

e'. [AP dovolen kenguru]
    satisfied kangaroo-INSTR
	f'. [AP serdit [PP na kenguru]]
	    angry at kangaroo
		indeclinable

Insofar as indeclinable nouns are concerned, Russian looks like English with respect to (12a), and unlike English with respect to (12b). Since phonologically null case marking is clearly available in Russian, we may conclude that it is not an implausible proposal for English either.

The grammar of case for complements in a language where only accusative case is available to a complement makes two types of distinctions, both of which seem to refer to syntactic category. First, it distinguishes between *assigners* (V, P) and *non-assigners* (N, A) of accusative case. Second, it distinguishes between NP, which needs to receive case (by the Case Filter in (11)) and other categories such as PP and CP, which act as if they do not need case. The fact that PPs do not appear to need case has already been demonstrated in (9a, c) and (10a). The examples in (14) make the same point for CP:

(14)   a. **Complement to N**
        her proof [CP that the world is round]
        b. **Complement to A**
        satisfied [CP that the world is round]

All these distinctions among the various syntactic categories may be attributed to the interaction of the Case Filter with the rule in (15) (a rule that we will improve on as this chapter proceeds; see the discussion of Exceptional Case Marking in section 4):[2]

(15)   **Accusative case assignment**
        α assigns accusative case to β only if:
        i. α is V or P (not N or A); and
        ii. β is the complement of α

For subjects, it appears to be T that assigns case (*nominative*), and in languages like English, only finite T, as (16a-b) show. As (16c) shows, English allows a prepositional complementizer *for* in certain circumstances to assign case (presumably ACC) to the subject of a non-finite clause:

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[2] The discussion so far tells us what sorts of complements are possible for a noun or adjective, in contrast to a verb or preposition. Case Theory does not tell us that a transitive verb with an NP object will probably have a nominal counterpart in English that takes a PP object (or a nominal counterpart in Latin or Russian that takes an object marked with some case other than accusative). The relation between *destroy the car* and *destruction of the car* (and the reason why *destroy of the car* is an unacceptable VP) must follow from some other property of the grammar.

(16)   **Only finite T assigns case to its specifier**
        a. We were happy [that Mary won the prize].
        b. *We were happy [ø Mary to win the prize].[3]
        c. We would be happy [for Mary to win the prize].

We thus add the rule in (17):[4]

(17)   **Nominative Case assignment (English)**
        Finite T assigns nominative case to its specifier.

        After Vergnaud made his proposal, it was soon observed that "Case Theory" could not only account for the overall distribution of NPs (vs. non-NPs), but also for the obligatoriness of NP-movement in constructions like passive, unaccusative VPs and raising infinitivals. The complement position of a passive (or unaccusative) verb in a language like English could be understood as a position in which ACC was not assigned by V (a special effect of passive morphology). This failure of ACC assignment would have no consequence for a non-NP, but would force movement of an NP into a position where the NP could be assigned case. That is why the NPs in (18) (where the underscore marks their original location) must move, while the PP and CP complements remain in their VP-internal positions:

(18)   a. The book was put __ [under the desk].
        b. Mary was persuaded __ [that the world was ending].
        c. The door opened __ suddenly.

Similarly, the failure of non-finite T to assign case to its specifier motivates obligatory Raising of an infinitival subject in the complement to unaccusative verbs like *seem*:

(19)   Mary seemed [__ to have written the letter][5]

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[3] The example *I am happy* [**that** *Mary to leave the room*] is also impossible, but this results from the fact that the clause-introducer *that* is limited to finite clauses in English.

[4] If the subject of a controlled infinitive is a special null pronominal called PRO, as was argued at length in literature of the 1980s, then an immediate question arises concerning its status under the Case Filter. Though *Mary* in (16b) violates the Case Filter, yielding a judgment of unacceptability, PRO in the same environment is fully acceptable: *We were happy PRO to win the prize*. One early answer exempted PRO from the Case Filter entirely. The formulation of the Case Filter in Chomsky (Chomsky (1980)) referred to N, rather than NP. PRO was assumed to be a bare NP, lacking an N terminal node — a distinction unavailable, of course, under the later theory of Bare Phrase Structure.

[5] The behavior of PRO in Raising constructions like (19) provides an argument (due to Chomsky & Lasnik (1993)) that PRO must move for Case reasons, just like overt NPs — contradicting the widely-held assumptions about PRO cited in note 4. For example, in the Raising constriction [*PRO to seem to him to have written the letter*] *would be strange*, PRO is obligatorily disjoint in reference from *him* (and replacement of *him* with *himself* allows coreference), which is expected only if *PRO* is required to raise. This observation led Chomsky and Lasnik to propose a special type of case that could only be assigned to PRO (and only by appropriate instances of infinitival T), which they called "null case". The self-evident ad hoc character of this proposal, along with other longstanding issues in the distribution of control, has been one of the impulses behind work that seeks to reanalyze Control constructions in a variety of ways (e.g. as involving movement, as suggested by Bowers (1973; 1981), Wehrli (1980,

Of course, there is another reason why *some* element must move to Spec,TP in (18) and (19) — the requirement that TP needs a specifier, called the **Extended Projection Principle** (EPP). If a verb takes only a CP complement, for example, an expletive *it* may satisfy the EPP in a language like English — and the CP does not need to move. That is why verbs like *believe* have two passives, as in (20), while a verb that takes an NP complement has only one passive, as seen in (21). Both examples satisfy EPP in (21), but only the first satisfies the Case Filter:

(20) a. [That the world is round] was believed __ by the ancient Greeks.
   b. It was believed by the ancient Greeks [that the world is round].

(21) a. The book was put __ under the table.
   b. *It was put the book under the table.

Furthermore, in many languages such as Spanish, nominative case appears possible on NPs that are c-commanded by T (and structurally close to T), even without movement. This suggests that nominative case is not necessarily assigned by finite T to its specifier directly. Instead T might assign nominative case "down", i.e. to a nearby position that it c-commands — and that the EPP property of T in English (but not in all languages) independently moves the NP targeted by nominative case assignment to the specifier position of the assigner. The discovery of the precise relation between nominative case, EPP and movement is an important research topic, as is the relation between all three of these factors, and verb-subject agreement, which also goes hand-in-hand with nominative case and movement to Spec,TP cross-linguistically (but not universally).

3. Burzio's Generalization and *v*

It was also observed by Burzio (1981,1986) early in the development of Case Theory that the failure of passive and unaccusative verbs to license ACC case seems systematic, and is linked in some fashion to their failure to take an external argument (at least in the same way as transitive active verbs do; we put aside the question of *by*-phrases in passive).

(22) **Burzio's generalization**
   If a verb licenses accusative case, it has an external argument.

That is, for example, there is no verb *ypen* 'open' that could appear in a frame like (23), where *it* is intended to be expletive (not a referential pronoun):

(23)   *It ypened the door.   [expletive *it*]
    'The door opened'.

Burzio's Generalization states, but leaves unexplained, the link between licensing of ACC and external argument. One approach to this problem was developed by Chomsky (1995), who suggested that the assigner of ACC might not be V after all, but might be a separate head *v* (read as "little *v*") that is simultaneously responsible for assigning ACC and the external argument thematic role.[6] The category *v*

115-131; 1981), and Hornstein (1999), among others; cf. also Landau (1999, 2003) and much subsequent literature for alternative views).

[6] Chomsky's proposal united many streams of contemporaneous research. Pollock (1989) had argued for the existence of a head lower than T but higher than VP to which French infinitival verbs (which do

takes VP as its complement, and combines with V by some operation such as head movement to yield the transitive verbs we actually hear in languages like English.

$$\overset{\text{ACC}}{\boxed{}}$$

(24)   Mary v [$_{VP}$ designed a bridge].

In support of this idea, Wurmbrand (1998, 2001) provided evidence from "restructuring" constructions that ACC is indeed not assigned by V itself, but by a higher head. Restructuring constructions are configurations in which a verb belonging to a certain class takes an infinitival complement that is transparent for many processes that are usually blocked by a clause boundary.[7] Wurmbrand showed that these complements are structurally smaller than other infinitivals. For example, they lack independent Tense and are unable to show negation.   Chomsky's v-hypothesis makes it possible to suggest that the infinitival complement in a restructuring environment might be a bare VP, and that it is v (and all higher clausal material) that is absent. If so, we would still hear a verb in the embedded clause, but any NP complement of that verb would have to be dependent on the v of the matrix verb (or some other element) for its case. Wurmbrand showed that restructuring constructions in German do indeed behave this way. In particular, when the matrix verb of a restructuring configuration is passivized, it is the *embedded object* that shows the behavior seen in (18) — that is, it must receive NOM from the matrix T, a construction known as *long passive*. Nominative case and plural agreement on the verb in (25) make it clear that the underlying object of *reparieren* 'repair' is receiving case from the higher finite T:

 (25)   **Long Passive in German**
         ...weil [der Lastwagen und der Traktor]   zu reparieren   versucht wurden
          since [*the truck and the tractor*]-NOM   to repair   tried   were
           lit. 'since the truck and the tractor were tried to repair'
           (i.e. someone tried to repair them)

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not move to T) optionally raise.   Kayne (1989) had argued for the existence of a head (once again lower than T, but higher than VP) to which French direct objects raise — for example, in the course of *wh*-movement, passive, or cliticization — triggering Object Agreement. Koopman (1992) argued for a head higher than VP that assigns ACC case on the basis of data from Bambara (a Mandé language of West Africa); while Holmberg (1986) argued for a similar head associated with ACC case to which particular nominals raise in Scandinavian, as part of a construction called Object Shift. Chomsky (1991, 1993; reprinted as ch. 2-3 of Chomsky (1995b)) was the first to propose that Pollock, Kayne, Koopman and Holmberg had all independently discovered the same syntactic head, which he suggested was both the assigner of ACC and trigger for object agreement. This head was dubbed AGR_O. The suggestion that this head also assigns the external argument role was brought into the picture later (Chomsky (1995a)). Hale & Keyser (1993, 2002) had suggested that a head distinct from V assigns the external argument role (which they called v). Chomsky proposed that this head too should be identified with the head whose other functions had been discovered by Pollock, Kayne, Koopman and Holmberg (as part of an account of Burzio's Generalization) — hence the v-hypothesis in the form presented in the text.

[7] Many of the special properties of restructuring constructions, particularly in Romance languages, were first discovered and investigated by Aissen & Perlmutter (1970) (reprinted as Aissen & Perlmutter (1983)) and Rizzi (1978). See also the bibliography at http://wurmbrand.uconn.edu/Bibliographies/res-bib.html.

Because negation (or tense) is higher than *v*, the addition of negation (or tense) to the embedded clause forces it to be bigger than *v*P. Consequently, Long Passive is disallowed, as predicted:

(26) **Long Passive in German**
　　　*...weil [der Lastwagen und der Traktor] *nicht* zu reparieren versucht wurden
　　　　since [*the truck and the tractor*]-NOM   not   to repair   tried   were

　　　The discovery of *v* marked a major advance in work on NP-licensing and case more generally, as results like Wurmbrand's make clear. At the same time, opinions vary concerning the functions other than case assignment that the VP-external case-assigner plays. Chomsky linked the case-assigner to the assignment of an external θ-role, with distinct flavors of *v* either assigning this role and assigning accusative case (in transitive constructions), or assigning neither (in unaccusative and passive constructions).[8] In a similar vein, Kratzer (1996) has identified the same category as instantiating *Voice*, and offered an explicit semantics for a proposal similar (though not identical to) Chomsky's. Other researchers have suggested other connections, however. Travis (1992), for example, identified the category as *Aspect*; Torrego (2002) argued that it is a *Locative P*; and Pesetsky & Torrego (2004) suggested that it is a lower instance of *Tense*. If any of these proposals are correct, the question of Burzio's Generalization again arises, and remains something of a mystery.

4. Other forms of licensing

　　　Up to now in our presentation, the ability to license a NP has been a property of particular functional categories — finite T and *v* in the versions of case theory just discussed. Accusative and nominative case morphology on nominals reflects the distinctions among these functional elements. In many languages, however, members of *lexical* categories — for example, specific verbs — also determine nominal morphology. For example, a particular verb may require dative case on its complement in a language like Latin, Icelandic or Warlpiri — and dative morphology may supplant the otherwise expected accusative (or nominative) morphology on the nominal. Such requirements appear to be linked to *argument structure* and *thematic role assignment*: a lexical item may require a special case on only those nominals that it takes as semantic arguments (and assigns a thematic role to).

　　　When such a requirement is found, an immediate question arises: does the assignment of this idiosyncratic morphology also license the nominal, as accusative or nominative assignment does? In other words, is such morphology on a nominal just "paint", that obscures an underlying nominative or accusative, or does it represent an alternative form of licensing that makes additional case assignment unnecessary? It turns out that both options are realized in the languages of the world.

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[8] The *v*P of an unaccusative or passive clause is transparent to agreement processes, while the *v*P of a transitive clause appears to be opaque. This led Chomsky (2001b) to suggest a further correlation, with the maximal projection of case-assigning, external-argument *v* constituting a "Strong Phase" that is spell-out once fully constructed and thus blocks processes like agreement; and the *v* of unaccusatives and passives heading a "Weak Phase" that is not spelled out in this fashion.
　　　In more recent work, Chomsky (Chomsky (2005)) has suggested (as a consequence of issues in the theory of PHASES) that V does assign ACC case after all, but "inherits" this ability from the *v* that selects it (and that a similar process allows T to inherit its own Case-assigning ability from the higher functional head C). We will not discuss this proposal further here. Wurmbrand's results probably can be achieved under these ideas as well, since a VP not directly selected by *v* will not inherit the property of ACC assignment —so it will once again have to be a higher V that performs this task.

In Icelandic, for example, it seems that idiosyncratic nominal morphology required by individual verbs is indeed "paint" that covers up a system that is underlyingly English-like in most respects. Such morphology has come to be called *quirky case* (Andrews (1982)). **(**Nominative and accusative case, which are not linked to argument structure or thematic role, are called *structural case* by contrast.) Consider, for example, the unpredictable assignment of dative morphology by the verb 'finish' in (27a) and genitive by 'visit' in (27b). When these verbs are passivized, the dative and genitive morphology remain, and (if other circumstances do not intervene) the underlying complement moves to Spec,TP much as in English — as seen in (28a-b) (data from Andrews (1982)):

(27)   a.   Ðeir   luku   kirkjunni.
            they   finished the-church.DAT

       b.   Við   vitjuðum Olafs.
            we   visited   Olaf.GEN

(28)   a.   Kirkjunni   var   lokið   (af Jóni).
            the-church.DAT was   finished

       b.   Olafs   var   vitjað (af Jóni).
            Olaf.GEN   was   visited

In sentences whose main verb does not require a particular quirky case, the object of an active verb bears accusative morphology, while the corresponding argument in a passive sentences bears nominative (in a finite clause) — as we expect if passive *v* fails to assign accusative. Furthermore, in an environment where an overt nominal is not licensable by abstract case in a language like English, quirky case morphology is not sufficient to license a nominal in a language like Icelandic. The subject position of the infinitival complement to 'try' provides a relevant example:

(29)   a. Mér   býður   við setningafræði.
            Me.DAT is.nauseated at   syntax

       b. *Hún reyndist mér   bjóða   við setningafræði.
            he   tried   me.DAT to.be.nauseated at   syntax

Quirky case in Icelandic thus appears to be irrelevant to the licensing of nominals. It does not constitute an alternative to abstract accusative or nominative assignment, but merely makes the assignment of accusative or nominative morphologically undetectable.

By contrast, some lexically governed nominal morphology does appear to license nominals, with the result that no other licenser such as abstract case is necessary**.** Such morphology is called *inherent case* (Chomsky (1986)). In Russian, for example, when a complement nominal bears dative or instrumental morphology as a consequence of the requirements of verbs such as 'help' and 'manage' (cf. (30)), and the verb is passivized as in (31), the noun does not raise to Spec,TP with its idiosyncratic case morphology as in Icelandic. Instead, the construction is disallowed, since the complement does

not need to move for case reasons and general principles of ECONOMY prevent a licensed nominal from raising to Spec,TP to satisfy EPP:[9]

(30)a. Ivan pomog studentam.
       Ivan helped students.DAT.PL

   b. Maša   upravljaet zavodom
      Masha manage   factory.INSTR.SG

(31)a. *Bylo pomoženo studentam.   (*any word order, any case pattern)
        was   helped   students.DAT.PL

    b. *Bylo upravleno zavodom.
        was managed factory.INSTR.SG   (*any word order, any case pattern)

As in Icelandic, the norm with verbs that do not impose particular morphological requirements on their complements is for the complement of an active transitive verb to show accusative case, and the corresponding argument of a passive to show nominative.

In both English and Icelandic, accusative case sometimes appears to be assigned by a verb that takes a clausal complement across the clause boundary, to the subject of the complement. This pattern, which is somewhat rare cross-linguistically, was dubbed *Exceptional Case Marking* (ECM) by Chomsky (1981). In (32a), the verb *believe* case-marks *him* in ECM fashion, while in (32b) the replacement of the verb *believes* with a related nominal eliminates the possibility of case-marking for *him*; and in (32c) passive morphology on *believe* suppresses its ability to assign accusative case — supporting the analysis of (32a) as ECM.[10]

(32)   **Exceptional Case Marking: English**
       a. Mary believes [Sue to have read the book].
       b. *Mary's belief [Sue to have read the book].
       c. Sue was believed [_ to have read the book]

Icelandic ECM behaves like its English counterpart, except that quirky case assigned by the lower verb may overwrite the otherwise expected accusative marking of the embedded subject (as expected):

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[9] Such a nominal will also block the raising of lower phrases, an instance of what Chomsky (Chomsky (2000)) calls a *defective intervention constraint*.

[10] ECM constructions require modifications of the proposal for accusative case assignment in (15), to allow not only complements, but certain other positions c-commanded by V to receive accusative. Much discussion over the past twenty years has been devoted to specifying the precise nature of these structural restrictions. The analysis of constructions like (32a) as involving case-marking across a clause boundary stands in opposition to earlier proposals concerning such constructions, in which the embedded subject moves to form a new object position in the higher VP ("Raising to Object", proposed by Rosenbaum (1967) and strongly defended by Postal (1974)). Aspects of the Raising-to-Object analysis have been revived by Lasnik and Saito (Lasnik & Saito (1991a); see also Branigan (1992)), among others (most recently, Chomsky (Chomsky (2005)), on the basis of the anaphoric properties of the embedded subject. We will not discuss the details of these proposals here, except to note that the topic remains an area of active discussion.

(33) **Exceptional Case Marking: Icelandic**
    a. Hann   telur   **Jón**   hafa   kysst Maríu.
       he-NOM believes **John-ACC**   to-have kissed Mary

    b. Hann   telur   **mér**   bjóða   við   setningafræði.
       He-NOM believes **me-DAT** to.be.nauseated at   syntax

Crucially, however, as predicted, the higher verb never imposes a quirky or inherent case on the embedded subject, since though it case-marks this nominal, it does not assign it a thematic role.

The phenomenon of ECM makes it clear that accusative case is not necessarily assigned to the complement of the assigner, contrary to our initial proposal in (15). This point is independently made by the assignment of accusative case by little *v* discussed in section 3, if that hypothesis, rather than (15), is the correct one. Both the phenomenon of ECM in early work on case theory and *v* in later work raise questions of locality: how much distance can separate a nominal from its case assigner? We will not discuss this issue in detail here, but it appears that case may be assigned so long as no barrier of a particular sort intervenes, and as long as there is no nominal closer to the assigner than the assignee.[11] In early work, most maximal projections were taken to function as barriers of the relevant sort, and the relevant locality was called *government*. (An exception to the general rule was made for non-finite TP, precisely so as to permit ECM.) In more recent work, it has been argued that the relevant notion is *phase*, which has the advantage of linking the conditions on case assignment to other properties of language.

5. Ergative patterning and inherent case

So far, we have seen that nominal licensing may involve nominative or accusative case assignment, or assignment of inherent case. Furthermore, the shape of case morphology may be transparent (when the distinction between nominative and accusative is overtly marked) or opaque — as in English (where all nominals behave like Russian indeclinables) or Icelandic (where quirky case may mask nominative and accusative).

In recent work, Legate has argued (building on work by Woolford (1997), among others) that these distinctions may in fact be all we need to explain case systems that appear at first glance to be quite different from those we have examined so far. If Chomsky (1995a) is correct in suggesting that *v* is responsible for assigning a θ-role to the external argument of a clause, does *v* ever assign inherent case to its specifier? Legate argues that in certain languages it does.

Suppose in a given language the following conditions hold, each of which is independently allowable within the system already developed:

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[11] In some cases, it appears that the recipient of accusative case moves to a position nearer the case assigner. As mentioned in note 10, Lasnik & Saito (1991b) argued that in the ECM constructions of (32), the embedded subject moves to the specifier of its case assigner *v* (Agr$_O$, for Lasnik and Saito; see note 6). Their argument involved constructions in which Binding Theory effects showed that the embedded subject of the infinitive c-commands into adverbials that modify the higher clause. In later work, Chomsky (Chomsky (2005)) suggested movement only as far as the specifier of V (rather than *v*), which, he suggested, inherited the property of case assignment from *v*.

1. Abstract case is morphologically zero (or shows the same morphology for both NOM and ACC) — as in English.
2. Inherent case exists, and is not morphologically zero.
3. One of the categories that assigns inherent case is *v* (the category that introduces an external argument), which assigns inherent case to its θ-marked specifier.

A language with these three properties would look like a language with a case-marking pattern called *ergative/absolutive*. In such a language direct objects and subjects of unaccusative and passive verbs bear the zero or invariant case morphology given in point 1 above — but external arguments will bear the special inherent-case morphology required by *v*. The morphology present on external arguments in such a language is called *ergative*; and the morphology (or absence of morphology) that (on this view) marks nominative and accusative is called *absolutive*. Example (34a) shows a transitive verb taking an ERG external argument and an ABS direct object, while (34b) shows an intransitive verb whose sole argument is marked ABS.

(34) **Warlpiri** (Pama-Nyungan: Central Australia)[12]
    a. nyuntulu-**rlu** ka-npa-ju   ngaju   nya-nyi
       you-**ERG**   PRS-2SG-1SG   me-**ABS** see-NPST
    'You see me.'

    b. ngaju   ka-rna   parnka-mi
       me-ABS PRS-1SG run-NPST
    'I am running.'

If this analysis is correct, then the possibility of an ABS subject as in (34b) should disappear in a non-finite clause (since structural case to the subject is unavailable in non-finite clauses), but the possibility of an ERG subject as in (34a) should remain (since ERG is an instance of inherent case, unaffected by finiteness). Legate shows that this prediction is correct in Warlpiri. Example (35a) shows a non-finite embedded clause with ERG subject, while example (35b) shows that an ABS-marked subject is blocked in a similar environment:

(35)a. **Warlpiri: ERG possible as subject of non-finite clause**
    Kurdu-lpa   manyu-karri-ja,   [**ngati-nyanu-rlu**   karla-nja-rlarni.]
    child-PASTIMPF play-stand-PAST   [**mother-POSS-ERG**   dig-NONFIN-OBVC]
    "The child was playing, while his mother was digging (for something)." (Laughren 1989:[44a])

    b. **Warlpiri: ABS impossible as subject of non-finite clause**
    Ngarrka-patu-rlu ka-lu-jana   puluku   turnu-ma-ni ...
    man-PAUC-ERG PRES.IMPERF-3PL.SUBJ-3PL.OBJ bullock.ABS group-CAUSE-NONPAST

     * ...[kurdu   parnka-nja-rlarni].
      [child.**ABS** run-**NONFIN**-OBV.C][13]

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[12] These data come from Bittner & Hale (1996), who label absolutive as "nominative", in keeping with their proposal that the two cases are underlyingly identical.
[13] As Legate discusses, the subject of the non-finite clause may be marked with DAT case, which is independently available to specifiers of nominals. The direct object in (36) below, however, may not be replaced with DAT.

Legate also shows that ABS on the direct object does not disappear in non-finite environments (in contrast to subject ABS), thus confirming her approach — since finiteness is not expected to affect ACC case.

(36)   **Warlpiri: object ABS still possible in non-finite clause**
   Ngarrka-patu-rlu ka-lu-jana   puluku turnu-ma-ni,
   man-PAUC-ERG   PRESIMPF-3PL.SUBJ-3pl.OBJ bullock muster-NPAST

   [karnta-patu-rlu   **miyi**   purra-nja-puru.]
   [woman-PAUC-ERG **food.ABS**   cook-NONFIN-TEMPC]
   "The men are mustering cattle while the women are cooking the food."

If Legate's analysis of Warlpiri and similar systems is correct, then what might appear at first glance to be a radically different organization of case marking is actually an expected variation on patterns already attested in other languages.[14]

6. Deeper questions about Case

In the discussion so far, we have taken for granted that case is a property of languages that display the relevant morphology. The interest of the preceding sections lies mainly in the presentation of a relatively simple theory of case that turns out to have a much wider set of empirical consequences cross-linguistically than one might have thought. We saw first that the distribution of nominals in a language like English that appears to lack case morphology is nonetheless governed by the same laws that regulate nominative and accusative case in languages like Latin and Russian. We then saw (following work of Legate) that the morphological parameter that distinguishes English from more obvious case languages, when crossed with a distinct parameter that distinguishes structural from quirky and inherent case, provides an immediate account of languages otherwise said to show a distinct ergative/absolutive pattern.

A key question, however, has been left unasked so far: why languages should show "case phenomena" in the first place. This question is particularly urgent in the context of a Minimalist Program that seeks to attribute syntactic properties that do not arise directly from the action of Merge to properties of the interfaces between syntactic computations and adjacent systems (or else to language-external factors). In this context, then, we should ask a "why" question about every aspect of case theory. For example:

1. **Nature of case:** What is case, and why is it a necessary licenser for nominals?
2. **Specialness of nominals:** Why do only nominals seem to need licensing by case (while clauses, PPs and APs do not)?

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[14] Legate's discussion extends beyond the facts cited here, and suggests a more general typology of ergative systems. One natural question that arises in the context of our presentation is whether languages exist in which *v* assigns quirky, rather than inherent case. Such a language would lose the possibility of ERG as well as ABS subjects in nonfinite environments. We are not sure whether this pattern is attested.

3. **Assigners vs. non-assigners:** Why do nouns and adjectives not license case in the same fashion as verbs and prepositions, at least in languages like Latin and English. Why does finite T differ from infinitival T in its ability to assign case?

It is fair to say that none of these questions has been answered in a satisfying fashion so far. Nonetheless, some progress has been made, perhaps, in achieving less ambitious goals that might serve as first steps towards answering these questions. In particular, there have been several attempts to anchor case theory to more general, possibly syntax-external properties of language. To the extent that the anchor itself must be stipulated, these attempts fall short — but to the extent that the proposed links between case and other aspects of language prove real, these proposals might constitute progress towards answering questions like 1-3 above.

An early attempt of this sort was presented by Chomsky (1981, 176ff and 336ff), developing a suggestion by Aoun (1979). Chomsky speculated that case is a precondition for an NP to receive an interpretation at Logical Form (LF) (the interface of syntax with semantic systems). This came to be called the *Visibility Hypothesis*. The *θ-criterion* of Chomsky (1981) (and his more general later proposal, the principle of *Full Interpretation* (1986)) disallows any NP that fails to receive such interpretation. Thus, the Case Filter — at least insofar as it has the effect of rendering certain expressions unacceptable — can be said to follow from more general principles that require all components of a syntactic expression to be "legible" at the interface with semantic components. Of course, the link between case and legibility remains stipulated; so question 1 above, though addressed by this proposal, is not really answered. Furthermore, this proposal leaves unexplained the fact that clausal arguments (and PPs) may be interpreted without receiving case (question 2). Chomsky (1981, 337ff) discusses the problem for CPs, but ultimately leaves it unresolved — suggesting only a tentative stipulation that would allow CPs to be visible at LF under conditions different from those that apply to nominals.[15] Question 3 remains entirely open.

More recently, we have attempted to develop Chomsky's proposal in a different fashion (Pesetsky & Torrego (2001); henceforth P&T). As Chomsky (1995a, 2000) and others have pointed out, features that are morphologically expressed on a particular word are not always interpreted in that position. For example, a finite verb in a language like Latin or English will often bear person or number morphology that is semantically relevant to the subject of the sentence, but not to the verb itself. More specifically, φ-features such as person, number and gender appear to have both *interpretable* and *uninterpretable* variants, depending on what category of word they appear on.

In standard proposals, case (in particular, nominative and accusative) is strikingly different. As normally described, case features have no semantic interpretation associated with them — no matter where they occur.[16] P&T suggested that this anomaly in the theory might be a sign that case is actually the uninterpretable counterpart of some interpretable feature — a feature, perhaps, to which a different

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[15] Similar problems arise for PRO, if it is assumed that PRO does not need or receive case (see note 4), since PRO bears a θ-role. Chomsky suggested some possible solutions to these difficulties in *LGB*. Note that the problem disappears if the proposal discussed in note 5 is adopted.

[16] There have been attempts to attribute a semantic value to the structural cases NOM and ACC, most famously by Jakobson (1984). For the most part, these efforts have been unsuccessful, since there appears to be no semantic generalizations about the meanings of such cases that have predictive power.

name is normally given. The well-known correlation between tense and nominative case suggests that case might in fact be an uninterpretable instance of *tense* (T).[17]

If case is actually T on the head of nominals, how might one explain the requirement that a nominal occupy a "case position" (and the absence of such requirement for clauses and PPs)? The answer would have to link the nominal's apparent need for case to some more general type of need found with other features. As it happens, a need of this sort is indeed found with some other features.

As discussed by Chomsky (1995a) and many others, the features of lexical items quite generally come from the lexicon in two forms: *valued* and *unvalued*. A lexical item with an unvalued feature is an element that "knows" that it must bear a feature such as number, but does not know in the lexicon whether it will be, for example, singular or plural. The existence of unvalued features can be seen in the phenomenon of agreement. The number and gender features of a past-tense verb in Russian, for example, covary with the corresponding features of the head noun of a subject nominal. The noun's versions of these features come from the lexicon knowing their values. This is most transparent in the case of gender, which is often an unpredictable property of individual nouns — and also for number, which is occasionally stipulated as plural (as in the case of *šči* 'cabbage soup', which only occurs as a plural). By contrast, an inflected verb does not come from the lexicon valued for gender (nor for number). No verb is intrinsically neuter, for example, nor obligatorily plural. The number and gender features of a past-tense verb in Russian are assigned to it by a syntactic process called *Agree*, in which unvalued features receive their value from a local element that bears valued counterparts of these features. Unvalued features must receive a value, or else the derivation fails: no past-tense verb in Russian, for example, lacks number and gender morphology.

P&T suggested that the process otherwise called "case assignment" is in fact nothing but Agree applying so as to value an otherwise unvalued T-feature on a nominal. When nominative case is assigned to a nominal expression, they argued, what is actually happening is the valuation of an unvalued T-feature on the nominal by a valued counterpart on Tense itself (ultimately on the finite verb). Instances of nominals that violate the case filter (and therefore produce a judgment of deviance) are simply nominals whose unvalued T-feature has remained unvalued, for lack of an appropriately situated local bearer of a valued counterpart.

This proposal connects the difference between nominals (which must appear in a "case position") and CPs (which have no such need) to an independent difference between these two categories in languages like English. CPs contain T locally inside them, whereas nominals do not.[18] Consequently, all arguments may be assumed to have the same type of T on their head, CPs as well as nominals — unvalued T, in the instances under discussion. The difference between unvalued T on C and unvalued T on the head of a nominal lies in whether valuation requires an external instance of valued T or not. Because T on C need not search external to CP for valuation, a CP may occur in non-case positions as well as case positions, unlike nominals.[19]

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[17] This suggestion was advanced earlier by Williams (1994, 11) and developed in a different manner by Haeberli (2002).

[18] A noun may take a CP complement or adjunct (a relative clause), and these elements may contain T — but this instance of T is too far from N to help.

[19] P&T support this theory with an extended argument that their proposals concerning case, when combined with a new analysis of the complementizer system of English, can explain certain constraints on *wh*-movement as well as the effects of the Case Filter. We will not discuss this supporting evidence here.

P&T extend their proposal to accusative case, by arguing that T-features on categories within the VP-system can function in much the same fashion as Tense itself to value T on a nominal. Furthermore, inherent case is straightforwardly distinguishable from structural case within this system as a situation in which valued, rather than unvalued T is present on the head of a nominal. Like a CP, such a nominal will have no need of external valuation for its T-feature, and thus will show no Case Filter effects — not, in this instance, because T on the argument receives its value internally, but rather because it is in no need of valuation in the first place. P&T (2001; 2004) argue that PP arguments have this property as well: a preposition bears valued T-features (and in fact shares a significant amount of its syntax with Tense; cf. the use of prepositional vocabulary such as English *to* within the tense-system).

Arguments both against and in favor of P&T's proposal arise when case morphology is considered in more detail. On the negative side, consider the fact that if P&T's proposal is correct, we expect to find the shape of case morphology co-varying with tense. For example, we might expect nominative morphology to look different in a past-tense sentence from a present-tense sentence. Though there are many languages in which case-related phenomena such as ERG-ABS vs. NOM-ACC patterning vary between past and present tenses (or perfective vs. imperfective aspect), there are few if any languages in which tense morphology directly mirrors the tense of the sentence. One example offered by P&T (due to Ken Hale, personal communication) is the Australian language Pitta-Pitta, where subject nominals bear future tense morphology when the tense of the sentence is future (Blake & Breen (1971); Hale (1998a, 1998b):

(37)   Pitta-Pitta
Ngapiri-ngu   thawa paya-nha.
father-FUT   kill   bird-ACC
'Father will kill the bird (with missile thrown).'

But such examples appear to be vanishingly rare, so a puzzle remains.

Another similar question raised by P&T's proposal, however, may receive a more positive answer. P&T provide no reason why T on nominals should have to be semantically uninterpretable. If they are correct that case is actually T on nominals, and that all arguments must bear T, we expect to find languages in which nominals bear instances of T that are interpretable — i.e. that temporally situate the individual denoted by the nominal, just as interpretable T in an English clause temporally situates an event. In fact, such languages are known. In the Halkomelem (Salish) examples seen in (38), past-tense morphology on N places the life-span of the object denoted by N in the past. Similar phenomena have been discussed for Somali by Lecarme (1996).[20]

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[20] Building on P&T's proposals, Wiltschko (2003) has argued that Halkomelem Salish shows no Case-filter effects for nominals — precisely because, like English CPs (and inherently casemarked nominals cross-linguistically), a Halkomelem nominal does not need to value its T externally, since it is not only interpretable, but lexically valued (like the T on an English finite verb). Matthewson (2005), however, has argued against Wiltschko's analysis. It should also be noted that Tonhauser (2007) argues that what is commonly called nominal tense in languages like these should instead be viewed as an instance of aspect (which would not affect the syntactic proposals discussed in this chapter).

(38) **Halkomelem Salish interpretable T on N**
    a. te-l   má:l-**elh**
       DET-1SG.POSS father-PAST
      'my late father'

    b. te-l   x̲éltel-**elh**
       DET-1SG.POSS pencil-PAST
      'my former pencil'   (Burton 1996, 67)

7. What distinguishes NOM from ACC *morphology*

If case in a language like Latin or Russian is an instance of unvalued T on nominals, a question immediately arises concerning the nature of the distinction between nominative and accusative morphology. To answer this question, we might adopt Chomsky's (1995a) suggestion that the choice of nominative or accusative morphology on a nominal reflects whether the nominal entered an Agree relation with a feature of T or with a feature of *v*. In the context of P&T's proposal, this would amount to a claim that nominal morphology reflects the identity of the element whose T-features were responsible for valuing T on the nominal.

Chomsky's actual proposal arose in the context of a theory different from the one we have just discussed. Chomsky suggested that case assignment is a consequence of an Agree relation (just as P&T later argued). For Chomsky, however, the crucial Agree relation involves neither T nor case itself, but instead involves φ-features. In Chomsky's view, case is valued on a nominal as a stipulated by-product of an Agree relation that actually involves a distinct set of features. In this proposal, the distinction between nominative and accusative morphology on a nominal is keyed to whether φ-feature agreement took place with T (yielding subject agreement, where visible) or with *v* (yielding object agreement, in languages in which this is visible).

Common to both approaches is the assumption that NOM and ACC morphology, when distinguishable, reflects agreement or licensing directly.[21] We end this chapter by noting an alternative view, developed by Marantz (1991), that is in principle compatible with any of the proposals concerning case that we have discussed so far: the classical proposal, P&T's proposals, or Chomsky's proposals that treat case as a by-product of φ-feature agreement.

Marantz suggests that *no* case morphology reflects licensing directly. The distinction between NOM and ACC morphology is sensitive to syntactic structure, he argues — but does not depend on the source of nominal licensing. In a sense, in this theory, *all* case morphology is quirky, in that it is all unrelated to nominal licensing. In particular, Marantz proposes, for languages like Latin or Icelandic with a NOM-ACC case system, that NOM is assigned under rather familiar structural conditions related to T (though unrelated to any Agree or assignment relation involving T). Crucially, however, the assignment of ACC is different. ACC in this theory is a ***dependent case***, assigned to the lower of two nominals, when the higher nominal bears NOM. If the higher nominal bears a distinct quirky case, NOM,

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[21] Both solutions may be extended to quirky case by assuming that morphology that reflects licensing directly may be overwritten by quirky-case requirements.

rather than ACC, will be found on the lower nominal. In effect, this builds Burzio's Generalization into the morphology, rather than into the syntax of nominal licensing or Agree:[22]

(39)   **A Dependent Case account of NOM and ACC**   (based on Marantz (1991))
      a. NOM is the morphology found on the highest non-case-marked nominal in a clause in which V has entered a relationship with T.
      b. ACC case is the morphology found on a nominal within a domain in which a higher nominal has received NOM.

A key argument from nominative-accusative systems in favor of a strictly morphological view of NOM as a dependent case is provided by Icelandic constructions like (40). Here, the verb 'believe' licenses the embedded subject *henni*, which, however, bears dative morphology as a lexical property of the embedded verb 'think'. Crucially, although the embedded verb is non-finite, its complement (a small clause) is marked with NOM. Marantz argues that morphological NOM rather than ACC appears on the complement precisely because the subject of the embedded clause does not bear morphological NOM, as predicted by (39b).

(40)   Eg tel   [henni hafa   alltaf þótt   [Olafur   leiðinlegur]]
      I believe her-DAT to-have always thought Olaf-NOM boring-NOM

Marantz goes on to suggest that an ERG-ABS system is one in which a dependent case is assigned to the *higher* of two nominals, and also presents arguments in favor of this view (which we will not consider here).

Dependent-case approaches to case morphology (and the NOM-ACC distinction) are often presented as alternatives to agreement-based accounts. Bobaljik (2008), for example, argues that verbal agreement is sensitive to a morphological hierarchy based in part on the dependent/non-dependent distinction, and that agreement and case thus both belong to a morphological, "post-syntactic" component, rather than to syntax proper.[23] More recently, however, Baker and Vinokurova (2008) present arguments from the Turkic language Sakha that morphological case rooted in the dependent/non-dependent distinction coexists with agreement-based case, and both systems may play a role in licensing nominals and determining agreement targets.[24]

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[22] The actual proposal is somewhat more complex, since it takes into account the role of finiteness and consequences of movement (which we have omitted here).

[23] Bobaljik proposes that agreement systems target the highest syntactically accessible arguments in the hierarchy *Unmarked case > Dependent case > Lexical/Oblique case*, with multiple agreement a possibility, so long as the hierarchy is respected. Preminger (2009) argues, however, that apparent instances of secondary agreement in Basque are actually instances of clitic doubling — raising the possibility that multiple agreement might not exist in general, with potential consequences for the status of the proposed hierarchy (and the support it brings to dependent-case theories).

[24] The possible post-syntactic nature of case morphology is itself topic of some discussion. Richards (2007), for example, has offered arguments from the distribution of "case stacking" (in which multiple case affixes attach to a single element, as in the Australian language Lardil) that case morphology itself is assigned in the course of the syntactic derivation, rather than in a post-syntactic component. Rezac (2008) argues for a similar conclusion specifically in the domain of dependent-case phenomena.

8. Conclusion

As we have shown, a remarkable series of results and generalizations have grown from Vergnaud's initial suggestion that the grammar of case might be central to the syntax of all languages — not just those with rich case morphology. At the same time, it should be obvious (as we noted at the outset) that these achievements still fall short of the goals set out in Chomsky's Minimalist conjectures, and much controversy remains. Furthermore, many fundamental questions, including the reason why case should exist at all, do not yet have substantive answers. In this sense, research on case remains very much "work in progress".

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