Kayne's model of Case and Finnish nominal phrases

Pauli Brattico

The standard view concerning Case assignment or valuation is that Case is valued to determiner phrases (DPs) in syntax. Recently, Kayne has proposed an alternative model, in which Case is valued to lexical elements rather than to phrases. This article cites several facts from Finnish in support of this model. A detailed Kaynean model of Case is developed. According to this model, abstract Case is valued to lexical elements by the highest ranking c-commanding Case assigner when each phase (CP, *v*P) is sealed, where ranking is based on a particular Case Hierarchy and a simple notion of locality. Configurations in which Case is seemingly assigned under a spec–head relation are provided with an alternative interpretation.

Pauli Brattico, Department of Computer Science and Information Systems, University of Jyväskylä, 40014 Finland
pajubrat@jyu.fi

1. INTRODUCTION

The standard view concerning Case assignment is that abstract Case is assigned to determiner phrases (DPs) in syntax. One particularly important contribution to this model is Chomsky (1981:49f.), which argues in favor of Vergnaud's Case Filter that requires all phonologically overt DPs (= NP^{max}) to be marked for Case. Since that proposal, the idea has been widely assumed in the generative tradition. For instance, any theory which assumes that Case is realized by a relation between a head and a complement/specifier is committed to the idea that Case is typically assigned to complete phrases, namely to those phrases which occupy the specifier and complement positions (Carstens 2000, Chomsky 1995, Vainikka 1989, among many others).[1]

This view is so commonly accepted that it is perhaps not easy to see that there are alternatives. One alternative was recently proposed by Richard Kayne (2005:140–143):

> The alternative is to take Case to be a feature of lexical items only. In [*John bought three apples*], *three* and *apples* will each have structural Case that will be valued under agreement with a probe. Valuation (i.e. assignment of

a value under agreement) will take place separately for *three* and for *apples*, though the result will look like case-agreement. (Kayne 2005:142)

I present evidence from Finnish in favor of this model. In the last section, I will present a detailed version of the Kaynean model within the framework of the Minimalist Program (MP). The Minimalist Program has been chosen because it has recently moved towards dispensing with X-bar-theoretical relations in favor of head–to–head relations (Chomsky 2006). This approach is consistent with the Kaynean model cited above and therefore needs no major overhaul in order to incorporate the evidence presented here.

Before discussing the evidence, a few comments are in order. First, I will follow the above minimalist nomenclature and say that an element which assigns Case to some other element VALUES that Case, and the element which is valued Case is the VALUEE. The whole process is termed VALUATION. According to a fairly typical view of Case, there is a mechanism in syntax which establishes a VALUATION RELATION between a DP and some other grammatical element, typically a functional head. This terminology is adopted from Chomsky (2001). In some grammatical systems, Case is not assigned via valuation but checked (Chomsky 1995, Bošković 2006). The difference between valuation and checking is that whereas valuation is an asymmetric relation, there being one element which has a Case feature which it assigns to another element that does not have it, the checking relation is symmetric: both the valuator and the valuee bear the same Case feature. This difference is mostly immaterial for present purposes.
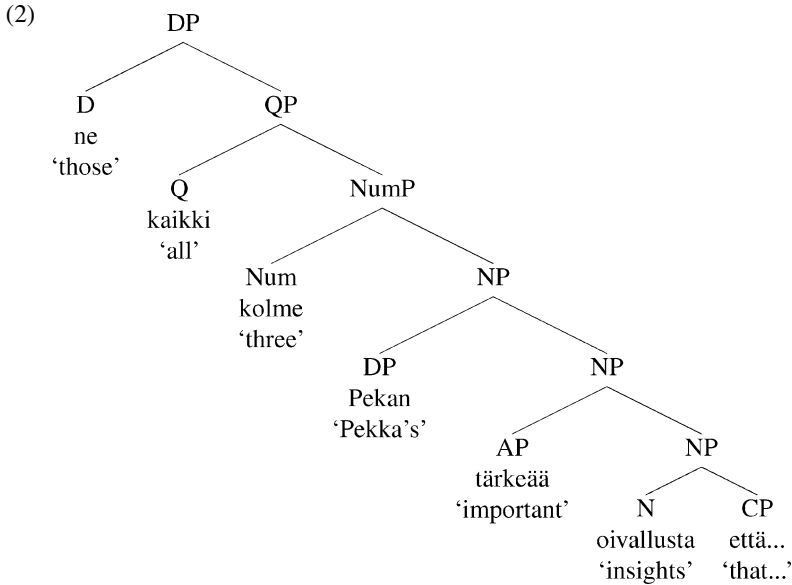
The approach to syntax outlined here makes a distinction between abstract Case and morphological case. Abstract Case refers to Case as it is valued in syntax proper, whereas morphological case realizes the former by using the morphological resources available in a given language. Although the distinction and its precise formulation are somewhat controversial, I will take it for granted here. The Kaynean model developed in this paper concerns abstract Case; I will have very little to say about matters relating to Finnish morphological case.

Most of the detailed evidence presented in this article is based on Finnish. Finnish nominal phrases are composed of optional overt determiners or demonstrative pronouns (Ds/DEMs), quantificational expressions (Qs), numerals (NUMs), adjective phrases (APs), prenominal genitive modifiers (possessives, thematic arguments), a nominal head (N^0), and postnominal elements such as PPs or CPs:

(1) ne   kaikki kolme tärkeää   Pekan   oivallusta [$_{CP}$ jotka auttoivat häntä]
    those all   three important Pekka's insights   which helped   him
    'all those three important insights of Pekka, which helped him'

I assume that determiners/demonstratives, quantifiers and numerals constitute their own heads projecting determiner phrases, quantifier phrases and numeral phrases,

respectively. Adjective phrases are adjoined to the NP. The underlying structure of Finnish DPs is thus the following:

(2)

```
                          DP
                 ┌─────────┴─────────┐
                 D                   QP
                 ne          ┌───────┴───────┐
              'those'        Q             NumP
                          kaikki      ┌──────┴──────┐
                           'all'     Num            NP
                                    kolme     ┌──────┴──────┐
                                   'three'    DP            NP
                                             Pekan     ┌─────┴─────┐
                                           'Pekka's'   AP          NP
                                                     tärkeää   ┌────┴────┐
                                                  'important'  N        CP
                                                            oivallusta  että...
                                                            'insights'  'that...'
```

Since Finnish does not have a clearly distinguishable class of definite or indefinite articles, I will assume that the determiner position is filled either by (and hence glossed as) a demonstrative or by a phonologically covert determiner. Finnish noun phrases are thus analyzed as determiner phrases in this article, although not much depends on this decision. Furthermore, unless otherwise stated, the category of numerals refers to cardinal numbers, not ordinals; the latter group behaves like adjectives.

Vilkuna (2000:180–210) argues mainly on semantic grounds that the premodifiers of noun heads in Finnish can be categorized into two groups, quantificational expressions (e.g., Ds, Qs, NUMs and pronoun DPs), constituting the upper layer, and attributive expressions (adjectives), constituting the lower layer (the labels 'upper layer' and 'lower layer' are mine). She shows that within each layer word order can vary to some extent, whereas the elements in the lower layer cannot precede the elements in the upper layer. Otherwise, linearization seems to follow the hierarchical order presented in (2).

Usually the overt Case valued to the DP is shown on each prenominal element, independent of the type of the Case feature (structural vs. non-structural; see the

examples in (3)).[2] Finnish belongs to a group of languages showing extensive use of Case concord within DPs.

(3) a. Minä katsoin si-tä yh-tä pien-tä punais-ta talo-a.
   I watched [that-PRT one-PRT small-PRT red-PRT house-PRT]_{PRT}

 b. Minä näin se-n yhde-n piene-n punaise-n talo-n.
   I saw [that-ACC one-ACC small-ACC red-ACC house-ACC]_{ACC}

 c. Se yksi pieni punainen talo   seisoo tie-n
   [that.NOM one.NOM small.NOM red.NOM house.NOM]_{NOM} stands road-GEN
   viere-ssä.
   beside-INE
   'That small red house stands beside the road.'

 d. se-n yhde-n piene-n punaise-n talo-n ove-n   kahva
   [that-GEN one-GEN small-GEN red-GEN house-GEN door-GEN]_{GEN} knob.NOM
   'the knob of the door of that small red house'

 e. sii-nä yhde-ssä piene-ssä punaise-ssa talo-ssa
   [that-INE one-INE small-INE red-INE house-INE]_{INE}
   'in that small red house'

Apart from the unified Case concord phenomenon realized in (3a–e), there are constructions with discontinuous Case patterns. I will discuss these in the next sections.

Last but not least, it is important to note that Kayne's hypothesis seems to be composed out of at least three separate hypotheses. These are as follows: (1) Case is valued to lexical elements, not to phrases. The idea that Case is not valued to DPs is a special instance of this hypothesis, but the idea itself applies to any type of phrase. (2) Case is valued separately to each of the lexical elements within the DP. This means that there are several valuation relations between the valuator(s) and the valuees, and presumably no grammatical interaction between the various valuation relations. Hypotheses (1) and (2) are independent of each other: hypothesis (1) says that phrases have no special status in valuation, whereas (2) says that all lexical elements participate in their own valuation relation. The minimalist idea that Case is valued to the nominal head instead of the DP (Chomsky 1995, 2001) assumes something like (1) but rejects (2). Instead, after the valuation relation between a valuator (a grammatical head) and the nominal head is in place (being checked or valued), there is a separate Case/case agreement or Case/case concord rule which distributes this Case feature to the other elements within the DP (Carstens 2000). Kayne's third conjecture is that there is no separate Case agreement; instead, hypothesis (2) explains Case concord.[3] What looms behind Kayne's idea is the unification of Case valuation and the feature sharing mechanism. In what follows, I wish to argue that the properties of Finnish determiner phrase support all three assumptions.

2. CASE IS NOT VALUED TO DPs

Traditionally, it has been assumed that Case is valued only to DPs. There is much data that support this hypothesis. For one, in English, overt case is associated only with pronouns, but pronouns have the syntactic status of full DPs. Likewise, the genitive marker (-*'s*) is merged to a whole DP. A number of important syntactic generalizations can be captured by assuming that since certain elements lack the ability to value Case (e.g., adjectival and nominal heads), they cannot be complemented with DPs unless a Case valuator, such as a preposition, intervenes (*John's search* *(*of/for*) *the proof*). Distributional evidence shows without doubt that Case is associated with DPs rather than, say, with verbs or prepositions.

Yet none of the above speaks directly against the Kaynean model. Surely any model of Case must explain why Case keeps good company with DPs. Instead, the Kaynean model purports to generalize the valuation mechanism by saying that Case is valued to the word-like elements within those DPs, rather than to DPs *qua* phrases. This does not prevent pronouns from obtaining Case nor does it prevent the use of Case Filter for the purposes of grammatical explanation. Kayne, for instance, reformulates the Case Filter so that it concerns nominal elements (+N) rather than DPs (Kayne 2005:141; see also chomsky 1981:49).

One type of data which speaks against the assumption that Case is exclusively a DP phenomenon comes from the fact that there are several languages in which grammatical elements inside of DPs value Case to their non-DP complements. These valuators are typically numerals or other quantificational expressions; the phenomenon has been documented for Polish (Przepiórkowski 1996, Rappaport 2001), Russian (Babby 1987, Franks 1995) and Serbo-Croatian (Wechsler & Zlatić 2001). In Finnish, several numerals and other quantificational expressions value partitive Case to their complements (Vainikka 1993, 2003) irrespective of whether the DP occurs in the object or in the subject position. Compare the overt Case features realized in (4a–b) and (4c–d).

(4) a. Odotin   yhde-n   minuuti-n.
    waited.1SG [one-ACC   minute-ACC]ACC
    'I waited one minute.'

  b. Yksi   minuutti   kului.
    [one.NOM   minute.NOM]NOM   elapsed
    'One minute elapsed.'

  c. Odotin   puoli/kaksi minuutti-a.
    waited.1SG [half/two.Ø minute-PRT.SG]ACC
    'I waited half a minute'

  d. Puoli   minuutti-a   kului.
    [half/two.Ø minute-PRT.SG]NOM elapsed
    'Half a minute elapsed.'

The following example from Polish shows that some numerals, such as the numeral *sześć* 'six', value genitive case to the elements they c-command (see Rappaport 2001, Franks 2002).

(5) a. Przeczytałem ciekawe książki.
     I.read   interesting.ACC.PL books.ACC.PL
     'I've read interesting books.'

   b. Przeczytałem sześć ciekawych książek.
     I.read   six   interesting.GEN.PL books.GEN.PL
     'I've read six interesting books.'

Facing this evidence, one way to maintain the idea that Case is valued to DPs is to assume that the numeral/quantifier selects another DP and then values partitive Case to that DP. I will call this the NUMERAL-DP HYPOTHESIS. This model is proposed by Vainikka (1993), although she assumes in the spirit of the Government and Binding theory that the relevant categories are maximal nominal projections (NPs). Alternatively, one could think that the numeral is complemented with a PP that then contains the DP. Either way, the problem with this hypothesis is that the proposed rule is recursive (i.e., DP → D + NumP / NumP → NUM + DP) and thus it predicts recursive layering of determiners, quantifiers and numerals within the DPs. However, it is generally assumed that one cannot layer determiners/demonstratives, quantifiers or numerals recursively within a single DP. Finnish is not an exception:

(6) a. *?ne   kaksi si-tä   pien-tä   talo-a
        those two   that-PRT.SG small-PRT.SG house-PRT.SG

   b. *?ne   kaksi näi-tä   vii-ttä   pien-tä   talo-a
        those two   these-PRT.PL five-PRT.SG small-PRT.SG house-PRT.SG

Another reason which speaks against this hypothesis is the following. If the numeral would be the nominal head of the DP (taking a PP/DP complement), it should show Case agreement with the matrix element. This prediction is not true; rather, the numeral which values partitive Case always takes a 'bare form', that is, a form without any overt Case suffixes. This cannot be explained by relying on the morphological properties of the numeral, since in other grammatical contexts the numeral shows overt Case suffixes (compare (7a–b) with (4c–d)).[4]

(7) a. Minä ostin   kolme-t   suka-t.
     I   bought   three-ACC.PL sock.ACC.PL
   b. Minä etsin   kolme-a   sukka-a.
     I   searched three-PRT.SG sock-PRT.SG

Hence, if the numeral would be the nominal head of the DP it should be valued the matrix Case. This is not the case:

(8) *Minä etsin   kolme-t   sukka-a.
     I   searched three-ACC   socks-PRT

Third, while the numeral is an optional element within the DP, it cannot appear there alone; rather, it always requires a complement noun.

Fourth, the numeral cannot be complemented with a CP that can be complemented to nominal heads. This is shown in (9a–b).

(9) a. mies jonka   tapasin
       man   who.SG   met.1SG
       'a/the man who I met'
     b. *?kolme jotka   tapasin
         three   who.PL met.1SG

Fifth, adjectives which occur within the DP always modify the nominal head and never the numeral. Here is one way to see this. In Finnish, the adjective *parillinen* is ambiguous: it can mean either 'even numbered' or 'something which has a pair'. If this adjective modified an odd-numbered numeral, rather than the head which follows it, the expression below would be contradictory. However, as (10) shows, the reading in which it modifies the numeral is impossible.

(10) ne   parilliset   kolme sukkaa
       those even-numbered three   socks
        'those three socks which have pairs'
       *'those [even-numbered three] socks'

Adjectives never modify the numeral, only the (true) nominal head.

Sixth, the numeral which values partitive Case is in singular, whereas the elements below the numeral can be either in singular or in plural; (11a–b) illustrate.

(11) a. ne   kolme   auto-a
        those.PL three.SG car-PRT.SG
        'those three cars'
      b. ne   kolme-t   auto-t
        those.PL three-NOM/ACC.PL   car-NOM/ACC.PL
        'those three (or more) cars'

There is no grammatical number agreement between the numeral and the demonstrative; rather, there is singular agreement between the nominal head and the numeral. While this fact is a puzzle in its own terms,[5] it argues against the assumption that the numeral constitutes the nominal head of the NP. Instead, all the data can be fitted into a model in which the numeral constitutes its own head, projecting a numeral phrase, above the nominal head and the NP (Ritter 1991). Under this analysis, the numeral values Case to something other than a full DP.

Another argument derives from the so-called *kasa* constructions (the label is mine).[6] These are constructions which on the surface look much like the numeral constructions discussed in the previous section: they are constituted by a quantificational expression, such as *kasa* 'stack', valuing partitive Case to its

complement. It turns out that these quantificational expressions do constitute the nominal head of the DP, taking a full DP complement, but that they also contrast with the numeral constructions in every relevant syntactic test.

The *kasa* construction under discussion is illustrated in (12).

(12) a. Pekka näki kasa-n   hiekka-a.
     Pekka saw [stack-ACC sand-PRT]ACC
     'Pekka saw a stack of sand.'
  b. Kasa   hiekka-a   oli   maa-ssa.
     [stack.NOM sand-PRT]NOM was ground-INE
     'A stack of sand was on the ground.'

The quantificational expression *kasa* 'stack' values partitive Case to its complement, much like the numerals. However, on closer inspection, it turns out that the syntax of this construction is markedly different from the syntax of the numerals discussed above.

First, unlike the numerals, the quantifier *kasa* shows matrix Case even if it values partitive Case to its complement; see (12a–b). Second, *kasa* allows both singular and plural complements, as shown in examples (13a–b). This contrasts with the Case of the numerals, (14), which do not allow the plural complement, (13a).

(13) a. Pekka näki kasa-n   auto-ja.
     Pekka saw stack-ACC car-PRT.PL
     'Pekka saw a stack of cars.'
  b. Pekka näki kasa-n   hiekka-a.
     Pekka saw stack-ACC sand-PRT.SG
     'Pekka saw a stack of sand.'

(14) *Pekka näki kolme auto-ja.
    Pekka saw three cars-PRT.PL
  'Pekka saw three cars.'

Third, this expression does not belong to the same grammatical category as quantifiers and numerals, since it may coexist with them within the same DP, and is then situated below the numeral:

(15) Pekka näki ne   kaikki kolme kasa-a   auto-ja.
   Pekka saw those all   three stack-PRT.SG car-PRT.PL
   'Pekka saw all those three stacks of cars.'

Fourth, this element may occur in the verbal complement position by itself, while the numeral is awkward, marginal and requires contextual information to be accetable.

(16) a. Pekka   katsoi   kasa-a.
   Pekka   watch   stack-PRT
   'Pekka watched the stack.'
  b. *?Pekka   katsoi   kolme/kolme-a.
   Pekka   watch   three-Ø/three-PRT

Fifth, this expression shares the number feature with all other nominal elements above the *kasa*:

(17) a. Pekka   näki ne   kasa-t   auto-ja.
   Pekka   saw   those.PL stack-PL car-PRT.PL
   'Pekka saw those stacks of cars.'
  b. Pekka näki se-n   kasa-n   auto-ja.
   Pekka saw that-ACC.SG stack-ACC.SG car-PRT.PL
   'Pekka saw that stack of cars.'

Sixth, it is possible to insert quantifiers, numerals and adjectives before the partitive complement of *kasa*:
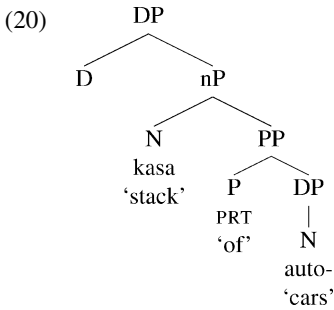
(18) Pekka   näki   se-n   iso-n   kasa-n   nii-tä   moni-a
  Pekka   saw   that-ACC huge-ACC stack-ACC those-PRT.PL many-PRT.PL
  pieni-ä   auto-ja.
  small-PRT.PL   cars-PRT.PL
  'Pekka saw that huge stack of many small cars.'

Thus, DP recursion is possible with *kasa* but not with the numerals.

  The seventh reason to analyze *kasa* differently from the numerals concerns adjective data. I showed earlier that adjectives cannot modify numerals (see example (10) above). In the case of *kasa*, this pattern is reversed. An adjective modifies *kasa* and never its partitive complement:

(19) ne   pienet kasa-t   auto-ja
  those small stack-NOM/ACC.PL car-PRT.PL
  'those small stacks of cars' and never 'those stacks of small cars'

Quantifier *kasa* behaves analogously to nominal heads, and exactly opposite with respect to the numerals. If so, then *kasa* 'stack' must be the head of the noun phrase, taking some form of prepositional complement which contains an additional DP. The prepositional element, rather than *kasa* 'stack', then values the partitive Case to the complement. This hypothesis is depicted in (20).

(20)

```
                      DP
                   /      \
                 D          nP
                          /    \
                        N        PP
                       kasa     /  \
                      'stack'  P    DP
                              PRT    |
                              'of'   N
                                   auto-
                                   'cars'
```

The numeral construction contrasts with this construction in all the relevant tests, showing beyond any doubt that unlike *kasa* 'stack', the numeral is not the head of the DP. Assuming the analysis provided in (20), this proposal can be verified by considering extraction data. In Finnish, the prepositional complement or prepositional adjunct of a noun can be extracted and moved higher within the DP. The resulting expressions e.g (21b) share their distribution with ordinary DPs.

(21) a. kaikki miehet [yhde-stä suure-sta kaupungi-sta]
         all   men   one-ELA big-ELA   city-ELA
         'all men from one big city'
      b. [yhde-stä suure-sta kaupungi-sta]$_i$ kaikki miehet t$_i$
         one-ELA big-ELA   city-ELA   all   men

The same grammatical operation applies to the *kasa* construction irrespective of whether the complement is in elative or partitive case:

(22) a. kaikki kasat [nii-stä   kolme-sta varasto-sta]
         all   stacks those-ELA three-ELA warehouses-ELA
         'all stacks from those three warehouses.'
      b. [nii-stä   kolme-sta varasto-sta]$_i$ kaikki kasat t$_i$
         those-ELA   three-ELA warehouses-ELA all   stacks

(23) a. yksi   kasa [pieni-ä   auto-ja]
         one   stack small-PRT   car-PRT
         'one car from the stack of small cars'
      b. [pieni-ä   auto-ja]$_i$ yksi kasa t$_i$
         small-PRT   car-PRT   one   stack
         'one car from the stack of small cars'

However, the result with the numeral is ungrammatical:

(24) a. kaikki kolme [pien-tä   auto-a]
         all   three small-PRT car-PRT
         'all three small cars'

b. *[pien-tä   auto-a]ᵢ kaikki kolme tᵢ
    small-PRT car-PRT all   three

The partitive PP in the *kasa* construction can be extracted beyond its DP host, while this is impossible with numerals. In the following minimal pair, the interrogative clitic *-ko* has been added to the partitive phrase and the resulting phrase topicalized to the left periphery.

(25) a. *[Pien-tä   autoa-ko]ᵢ   Pekka näki kolme tᵢ?
      small-PRT.SG car.PRT.SG-KO Pekka saw three

    b. [Pien-iä   autoja-ko]ᵢ   Pekka näki kasan tᵢ?
      small-PRT.PL   car.PRT.PL-KO Pekka saw stack
      'Was it small cars that Pekka saw a stack of?'

One nominal construction type deserves to be discussed before we can conclude this section. It is possible to complement a full DP to a numeral if the complement DP shows elative case. The nominal head within the upper DP layer is then optional. Because the head is optional, I will call these HEAD DROP CONSTRUCTIONS.[7]

(26) ne   kaksi (autoa) nii-stä   kaiki-sta auto-ista
    those two   cars   those-ELA all-ELA.PL cars-ELA.PL
    'those two cars from the set of all those cars'

When the head drop construction occurs without a nominal head, one could – at least theoretically – pursue the hypothesis that it exemplifies a numeral-DP or numeral-PP construction. According to this hypothesis, the two forms underlying (26), one with the nominal head and the other without it, should be analyzed as follows:

(27) a. ne [NumP kaksi [NP auto-a [PP nii-stä   kaiki-sta autoi-sta]]]
      those   two   car-PRT those-ELA all-ELA   cars-ELA
      'those two cars from the set of all cars'

    b. ne [NumP kaksi [PP nii-stä   kaiki-sta autoi-sta]]
      those   two   those-ELA all-ELA   cars-ELA
      'those two cars from the set of all cars'

According to an anonymous *NJL* reviewer, this hypothesis would in turn show that contrary to what has been claimed so far, numerals could be complemented directly with DPs or PPs (see example (27b)). Several reasons exist to doubt this hypothesis, to my mind all quite compelling. The strongest reason is that even if the head drop construction is formed by somehow suppressing the nominal head, the head does not seem to go away in the semantic sense. Thus, without any contextual help, expression (26) cannot be interpreted in any other way besides referring to cars (compare (28a–b)).

(28) a. ne   kaksi nii-stä   kaiki-sta autoi-sta
      those two   those-ELA all-ELA   cars-ELA
      'those two cars/*doors/*drivers/. . . from the set of all cars'

b. ne   kaksi autoa/ovea/kuljettajaa nii-stä   kaiki-sta autoi-sta
   those two   cars/doors/drivers   those-ELA all-ELA   cars-ELA
   'those two cars/doors/drivers from the set of all cars'

Another way to see this is via ellipsis. If the head drop construction (26) is paired elliptically with a similar expression that contains an overt nominal head, then (26) behaves exactly as if it contained a nominal head identical in meaning to the first conjunct.

(29) kaksi autoa Turu-sta   ja   kolme ( ) Helsingi-stä
     two   cars Turku-ELA and three   Helsinki-ELA
     'two cars from Turku and three (cars/*trains/*drivers) from Helsinki'

Both conjuncts should therefore share their syntactic structure, hence the latter conjunct should be analyzed as NUM–N^0–PP. Furthermore, like the *kasa* construction the head drop construction allows recursive stacking of DPs.

(30) a. ne   kaksi siitä   jouko-sta   auto-ja
        those two   that.ELA.SG   set-ELA.SG   cars-PRT.PL
        'those two from that set of cars'
     b. ne   kaksi nii-stä   jouko-ista   auto-ja
        those two   those-ELA.PL set-ELA.PL   cars-PRT.PL
        'those two from those sets of cars'

As can be seen from these examples, the elative complement, unlike the partitive construction, allows both singular and plural complements.

The elative phrase can be extracted from the material that precedes it:

(31) a. nuo   kaksi [nii-stä   kaik-ista   auto-ista]
        those two   those-ELA   all-ELA.PL   car-ELA.PL
        'those two cars from all those cars'
     b. [nii-stä   kaik-ista   auto-ista]   nuo   kaksi
        those-ELA   all-ELA.PL   car-ELA.PL   those   two
        'those two cars from all those cars'
     c. [Nii-stä kaik-ista   auto-ista]   Pekka   osti   nuo   kaksi t.
        those-ELA all-ELA.PL   cars-ELA.PL Pekka   bought   these   two
        'Pekka bought two of all those cars.'
     d. [Mi-stä   kaik-ista auto-ista]   Pekka ajatteli, että Merja osti
        which-ELA all-ELA.PL cars-ELA.PL Pekka thought that Merja bought
        nuo   kaksi t?
        these two
        'Of which two cars Pekka thought that Merja bough those two?'

As I pointed out earlier, this extraction is impossible with numerals valuing partitive Case; to recapitulate:

(32) a. ne   kaksi pien-tä   auto-a
     those two   small-PRT.SG cars-PRT.SG
     'those two small cars'
    b. *pien-tä   auto-a   ne   kaksi t
      small-PRT.SG   cars-PRT.SG   those   two

(33) a. Pekka osti   ne   kaksi pien-tä   auto-a.
     Pekka bought those two   small-PRT.SG cars-PRT.SG
     'Pekka bought those two small cars.'
    b. *Pien-tä   auto-a   Pekka   osti   ne   kaksi t.
      small-PRT.SG cars-PRT.SG Pekka   bought   those   two

The head drop construction is not related to the presence of the numeral per se, as all following expressions, none of which containing the numeral, are grammatical:

(34) a. tämä nii-stä   kaik-ista   auto-ista
     this   those-ELA   all-ELA.PL   car-ELA.PL
     'this (one) from all those cars'
    b. pienin   nii-stä   kaiki-sta kaso-ista
     smallest those-ELA   all-ELA   stacks-ELA.PL
     'the smallest (one) from those stacks'
    c. se   Peka-n   nii-stä   viide-stä omena-sta
     that Pekka-GEN those-ELA   five-ELA   applee-ELA
     'that Pekka's (one) from the five apples'

Likewise, the head drop is not restricted to elative complements nor to nominal heads. Several nominal constituents may be dropped, as is shown in (35a–b), as long as at least one nominal element remains, shown in (35c).

(35) a. Minä teen   ne   (kaikki) kateellisiksi.
     I   make those all   envious.TRS
     'I make them all envious.'
    b. Minä teen   (ne)   kaikki   kateellisiksi.
     I   make those all   envious.TRS
     'I make them all envious.'
    c. Minä teen   *(ne kaikki) kateellisiksi.
     I   make   those all   envious.TRS

In sum, the head drop construction differs from the partitive numeral construction in several ways. The simplest assumption seems to be that (27a–b) are syntactically identical, while in (27b) the head has been silenced phonologically by some general mechanism that is not restricted to the DPs containing numerals or elative complements. Furthermore, these properties suggest that the elative complement is

like the partitive complement of *kasa* 'stack' and other similar nouns: it constitutes a complement of the head noun, not material above the head noun. Why and when several constituents within the noun phrase can be silenced (provided sufficient contextual information) remains to be studied.

Based on the above evidence, I conclude that the numeral values partitive Case to its complement that is not a DP. This breaks the connection between Case and DPs. If Case can be valued to other phrases besides DPs, the question of course arises to which phrases it may be valued. In the next section I will argue that Case is not valued to phrases at all (at least not in Finnish); rather, it is valued to the lexical elements. This data constitutes yet another piece of evidence against the hypothesis that Case is exclusively a DP-level phenomenon.

3. CASE IS VALUED TO INDIVIDUAL LEXICAL ELEMENTS

I begin with examples (36a–b), which contain a numeral, a nominal head (in partitive) and a demonstrative pronoun and a quantifier above the numeral. Notice that the demonstrative, the quantifier and the numeral all occur in their bare forms, that is, without any visible case suffixes. The same form occurs both in the context in which the whole DP is valued nominative and in the context in which it is valued accusative.

(36) a. Minä näin ne   kaikki kolme   auto-a.
     I   saw [those.Ø all.Ø   three.Ø   car-PRT]ACC/PRT
   b. [Ne   kaikki kolme   auto-a]NOM hajosivat.
     those.Ø all.Ø three.Ø   car-PRT   broke

The reason these elements do not show case suffixes (hence they are glossed as Ø) turns out to be more complex than what one would first conjecture. The first point to note is that the plural demonstrative and the quantifier do not show, as a morphological property, nominative or accusative case irrespective of whether the numeral is part of the DP. These forms cannot therefore be used as a diagnostic of which Case feature is assigned to the nominal elements above the numeral. Fortunately, singular demonstrative, such as *se* 'that', shows overt contrast between nominative and accusative Case:

(37) a. Minä ostin   se-n   auto-n
     I   bought [that-ACC car-ACC]ACC
   b. Minä odotin se-n   puoli   minuutti-a
     I   waited [that-ACC half.Ø   minute-PRT]ACC/PRT
   c. Se   puoli minuuti-a   kului   nopeasti.
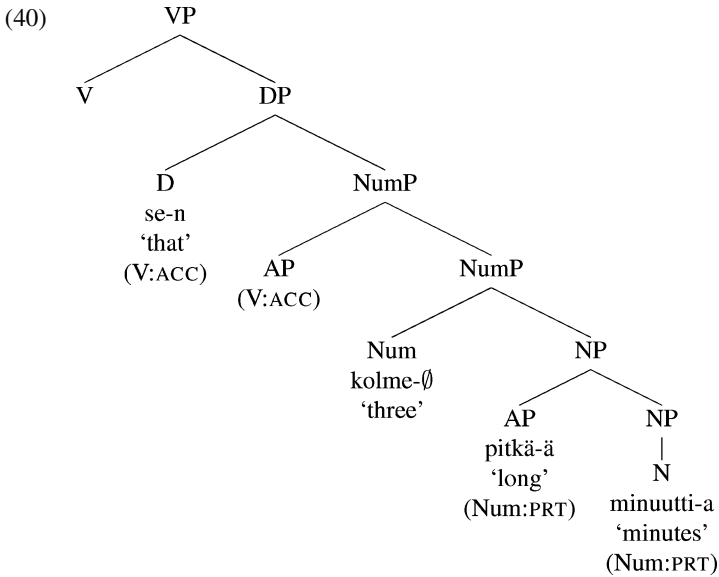   *[that.NOM half.Ø minute-PRT]NOM elapsed fast*

The second point to note about these examples is that the numeral behaves differently: it can inflect for accusative Case, but when it does, it cannot value partitive Case to its complement. Thus if the numeral is in its bare form, the nominal head shows partitive Case. If the numeral inflects for matrix Case, then so does the nominal head. The tentative generalization is that if the DP contains a bare numeral, matrix Case valuation reaches only the elements above the numeral, whereas the numeral values the elements below. A striking confirmation of this generalization can be found by examining the behavior of Finnish adjectives. In Finnish, adjectives may be situated below or above the numeral within the DP. When the adjective is located above the numeral, it is valued matrix Case, as in (38a, c). When it is located below the numeral, it is valued partitive Case, as in (39b, d).

(38) a. Minä odotin pitkästyttävä-t kolme   minuutti-a.
       I   waited boring-ACC.PL three.Ø minute-PRT.SG
       'I waited those boring three minutes.'
   b. Minä odotin kolme   pitkästyttävä-ä minuutti-a.
       I   waited three.Ø boring-PRT.SG minute-PRT.SG
       'I waited those boring three minutes.'
   c. Minä söin pilaantune-en puoli   leipä-ä.
       I   ate   rotten-ACC.SG   half.Ø bread-PRT.SG
       'I ate a half of a rotten bread.'
   d. Minä söin puoli pilaantunut-ta leipä-ä.
       I   ate   half.Ø rotten-PRT.SG   bread-PRT.SG
       'I ate a half of a rotten bread.'

The following data show that the distribution of the accusative and partitive Case correlates strictly with word order:

(39) a. *Minä odotin   kolme   pitkästyttävä-t minuutti-a.
         I.NOM wait.PAST.1SG three.Ø boring-ACC   minute-PRT
   b. *Minä odotin   pitkästyttävä-ä kolme   minuutti-a.
         I.NOM wait.PAST.1SG boring-PRT   three.Ø   minute-PRT

It turns out that Case distribution is regulated by a locality principle: each element within the DP searches for the closest possible valuator (*v*, numeral, finite C/T) and values its Case accordingly. The resulting Case valuation relations are illustrated in (40). Valuation takes place under a local c-command relation.

(40)

```
                    VP
                  /    \
                 V      DP
                       /  \
                      D    NumP
                    se-n   /    \
                   'that' AP     NumP
                  (V:ACC)(V:ACC) /    \
                              Num      NP
                            kolme-∅   /  \
                             'three' AP   NP
                                  pitkä-ä  |
                                   'long'  N
                                  (Num:PRT) minuutti-a
                                          'minutes'
                                          (Num:PRT)
```

This is exactly what the Kaynean model predicts: Case valuators are valuing Case features to their complements, while the effects of more local valuators override the non-local ones. Finally, Case concord is an automatic consequence of this model, and the discontinuous Case concord pattern (40) is automatically deduced.

4. THE KAYNEAN MODEL OF CASE

In this section, I will take a few steps towards the Kaynean model of Case without trying to be cross-linguistically exhaustive; instead, given the focus of the present paper, the discussion will be limited to Finnish.

I will take as my point of departure in this section what Vainikka (1989) and Clahsen, Eisenbeiss & Vainikka (1993) call the 'Structural Correspondence Principle', namely, the principle that there is a one-to-one correspondence between structural positions and overt structural Case. This provides a good starting point because Vainikka has already argued that this model fits well with the Finnish facts. According to this idea, adopted in many guises in several models of grammar (e.g., Chomsky 2006:12), Case encodes structure. One way to make sense of the Kaynean approach to Case is to think of the Kaynean model as a particular implementation of this idea. Since we would perhaps like to follow Minimalist tradition and abandon the X-bar theory, correspondence should not be defined with reference to absolute grammatical positions, but instead RELATIVIZED structural positions which are defined

in terms of local relations between functional heads and lexical heads. Chomsky's (2006) idea that Case features are valued under the probe–goal relations and Salo's (2003:93–122) hypothesis that Case and lexical categories are valued under 'feature vectors', i.e. sequences of c-commanding elements, represent other formulations of this basic insight.

I have adopted a similar hypothesis in my earlier work (Brattico & Huhmarniemi 2006, Brattico & Leinonen in press). The background for these models was in Kayne's work on linearization. In influential work, Kayne (1994) argued that syntax must establish a certain constellation of asymmetric c-command relations for the purpose of linearization. Our proposal in earlier work was to extend this idea to the theory of Case. Thus, our hypothesis was that in the same way that linearization can be based on asymmetric c-command relations established in syntax, so Case valuation relations should be too. The discontinuous and layered Case valuation patterns reported in this paper and elsewhere are thus the overt manifestation of these asymmetric c-command relations. Let us assume the following tentative formulation of this idea:

(41) Each lexical element with an unvalued Case feature is valued this
     feature by the closest asymmetrically c-commanding Case valuator.

The hypothesis that Case is always valued by the closest c-commanding valuator is problematic on at least two grounds. There are cases where the non-local valuator overrules the local one, and cases where Case valuation does not seem to be based on c-command relation at all. Let us next look at these problems in turn.

The first case emerges when the DP in Finnish is valued some case other than nominative or accusative: in that situation, the numeral declines with the rest of the nominal elements and does not value partitive Case to its complement. This is shown in examples (42a–c).

(42) a. nii-ssä   kolme-ssa piene-ssä talo-ssa
        those-INE   three-INE small-INE   house-INE
        'in those three small houses'
     b. *nii-ssä   kolme-ssa pien-tä   talo-a
        those-INE three-INE small-PRT house-PRT
     c. *nii-ssä   kolme   pien-tä   talo-a
        those-INE three-Ø   small-PRT house-PRT

Babby (1987), who notes the same phenomenon in Russian, has explained this phenomenon by relying on a Case Hierarchy, which states that non-structural Case features overrule the structural Case features (hence the inessive overrides partitive). While the explanation of the Case Hierarchy in itself would constitute a worthwhile inquiry,[8] the interesting thing about this phenomenon is the fact that the Case feature that should be valued to the nominal head cannot be determined locally. Suppose, for instance, that the derivation has reached a point where the numeral is merged to the

NP. The nominal head bears an unvalued Case feature. Should we value this Case feature by the numeral? The problem is that we cannot decide this before we know what occurs later in the derivation.

One way out of this problem is to give up local Case valuation and assume the derivation-by-phase approach (Chomsky 2001). If all Case features are valued when the phase (CP, vP) is sealed, then the required information is available and no competing functional heads are present (e.g., elements above v do not compete with v in valuing accusative Case to the object DP). To incorporate this idea into the Case valuation mechanism, the modified version in (43) will be proposed. In this proposal, the notion of 'highest ranking valuator' refers to a valuator which is the most local but highest ranking member in the Case Hierarchy. The Case Hierarchy is tentatively defined here so that non-structural Case features rank higher than structural Case features.

(43) Executed separately for each phase (CP, vP), each lexical element with an unvalued Case feature is valued Case feature by a Case valuator that is the most local highest ranking member in the Case Hierarchy.

Suppose that the derivation has reached the stage 'v–VP[. . .DP. . .]' and attempts to spell-out the vP in (44a–c). The unvalued Case feature of the nominal head now needs to be valued. If there are no valuators (prepositions, numerals) between the nominal head and v, then this functional head counts as the most local and highest ranking member in the Case Hierarchy, and the nominal head will be valued accusative Case (44a). If the numeral head intervenes between the v and N, and we assume the numeral and the v rank to be equal in the Case Hierarchy (being structural Case valuators), then the more local valuator, the numeral, determines the Case of the nominal head (44b). Finally, if the DP is merged with the preposition, then the preposition ranks the highest in the Case Hierarchy and values non-structural Case to the elements inside of the DP; see (44c).

(44) a. Pekka näki v auto-n.
   Pekka saw   car-ACC
 b. Pekka näki v kolme auto-a.
   Pekka saw   three cars-PRT
 c. Pekka istui v P kolme-ssa auto-ssa.
   Pekka sat   three-INE   car-INE
   'Pekka sat in a three cars.'

Another problem for (43) concerns situations where Case valuation does not seem to be based on a c-command relation at all. Vainikka (e.g., 1989, 1993) has argued that the genitive in Finnish is valued to the specifier position of the (e.g., nominal) head. The following minimal pair (with virtually identical meanings) illustrates this generalization. In (45a), the DP *minua* 'me' appears after the preposition in the

complement position (Comp, PP) and takes partitive Case, whereas in (45b) it appears before the preposition in the specifier position (Spec, PP) and takes genitive Case. Furthermore, in (45b) the element *lähellä* 'near' agrees with the precedeing DP. No such agreement is possible in (45a).

(45) a. lähellä   minu-a
    near   *me-PRT*
    'near me'
  b. minu-n   lähellä-ni
    I-GEN   *near-PX/1SG*
    'near me'

In my opinion, Vainikka's arguments and the data are entirely persuasive. But some additional facts raise concerns about how they should be explained.

First of all, if the nominal head has several arguments, as in the case of a nominalized transitive sentence, both prenominal arguments are valued genitive case. We should therefore not pursue this data by assuming that there is one X-bar-theoretic specifier position which is linked with the genitive case.

(46) isä-n   auto-n osta-minen
    father-GEN car-GEN byuing-NOM
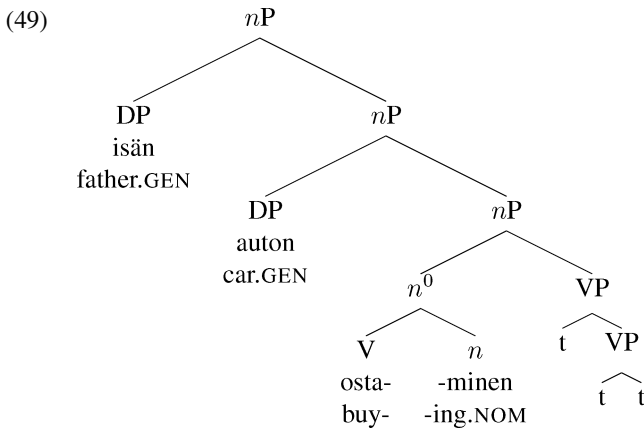   'the buying of the car by father'

Second, many specifier positions are not valued genitive case at all (e.g., Spec, TP in finite sentences). Third, the genitive arguments constitute a 'case distribution island' in the sense that whatever Case is valued to the DP, the genitive Case features are not affected (e.g., Vilkuna 2000:188–193, Brattico & Leinonen, in press).

(47) Siinä   isä-n   auto-n   ostami-sessa kului tunti.
    that.INE father-GEN car-GEN buying-INE   lapsed   hour
    'One hour lapsed when the father bought the car.'

To explain these additional facts, we assumed (Brattico 2005, Brattico & Leinonen in press) that the underlying structure behind these constructions is as in (48). Here *n* is a nominalizer head, V is the verbal root and DPs are the two arguments (Marantz 1997, Chomsky 2006). Under this configuration, *n* values genitive Case according to rule (43) to both DPs (and to the nominal elements inside of these DPs) which it c-commands.

(48)

```
        nP
       /  \
      n    VP
          /  \
        DP    VP
             /  \
           DP    V
```
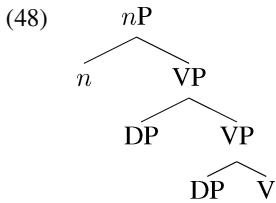
The verbal root is nominalized when it raises to *n*. The *n* bears an EPP feature much like *v* and thus it probes the DPs to its specifier position after they have been valued genitive Case. After these transformations, the resulting *n*P looks as is shown in (49).

(49)

```
                    nP
                  /    \
               DP        nP
              isän      /   \
          father.GEN  DP      nP
                     auton   /   \
                    car.GEN n⁰     VP
                           / \    /  \
                          V   n  t    VP
                       osta- -minen  /  \
                       buy-  -ing.NOM t    t
```

The presence of *n* explains why genitive is associated with certain words (namely, those which contain *n*) and why several DPs are valued the same genitive Case. The reason why genitive DPs constitute a Case distribution island follows from (43), namely, because they are locally c-commanded by *n* that is closer to those DPs than, for example, the matrix valuators. Since the genitive arguments constitute a Case distribution island, whatever the higher valuator, we have to assume that no higher Case feature can override the effects of more local *n*.

Vilkuna (2000) argues that the genitive prenominal modifiers differ in whether they belong to the upper quantificational layer or to the lower attributive layer (see secton 2 above for the explanation of these concepts). This model disagrees with the hypothesis that both genitive DPs are base-generated below the *n*P (hence to the lower layer) where they are protected from matrix Case valuation. However, one reason to think that both genitive prenominal DPs can be situated in the lower layer

is that the adjectives, which are situated in the lower layer without any doubt, may nevertheless precede them:

(50) niitä   kaikki-a kolme-a pitkästyttävä-ä isä-n   auto-n
     [those.PRT two-PRT three-PRT boring-PRT   father-GEN car-GEN
     osta-mista
     buying-PRT]PRT
     'all those three boring purchases of a car by the father'

What appears to be true is that the genitive DP may occur higher in the structure. Huhmarniemi (in preparation) has observed that such displacement has relevance to matters relating to logical scope. She observes that when the genitive DP is situated below the quantifiers/numerals, the DP strongly prefers the narrow scope reading, as in (51b).[9] When it occurs above the quantifiers/numerals, it can take either narrow or wide scope, as in (51a).

(51) a. kaikkien   ihmisten   kaksi jalkaa
        all.GEN   person.GEN two   legs
        every > two / two > every
        'the two legs possessed by every person' (two legs in total) or
        'two legs possessed by every person' (possibly more than two legs)
     b. kaksi kaikkien ihmisten   jalkaa
        two   all.GEN   person.GEN legs
        two > every / *every > two
        'two legs possessed by every person' (two legs in total)

This phenomenon is well-known from other grammatical environments. For instance, in certain situations, grammatical elements take narrow scope if left at their base position and wide scope only marginally. The wide scope reading and reconstructed narrow reading occur naturally after leftward movement. In the following example from Finnish, the same phenomenon is observed in the case of topicalization.[10]

(52) a. Kaksi   miestä rakastaa kaikkia naisia.
        two   men   loves   every   woman
        two > every / *every > two
        'Two men (e.g., Pekka and Jukka) love every woman.'
     b. Kaikkia naisia rakastaa kaksi   miestä.
        every   woman loves   two   men
        every > two / two > every
        'Two men (e.g., Pekka and Jukka) loves every woman.'
        'For each woman, there are two men who love her.'

The most common explanation for this phenomenon is to assume that the quantifier raises via A'-movement and is reconstructed to its base position when the sentence is associated with the narrow scope reading. We are therefore led to postulate the same explanation for the variation in the position of the genitive DPs. The genitive DPs may move to a higher position in the DP via A'-movement. The genitive DP situated in the upper layer has therefore been moved into that position.

If the genitive moves, it should follow constraints typical of grammatical movement. One such constraint is 'Attract Closest' (Chomsky 1995:297), which requires that the closest potential goal is moved. That this constraint applies to the DP domain can be shown by using the observation made by Saara Huhmarniemi (in preparation) that in non-echo questions whatever element within the DP is replaced by the corresponding *wh*-element, that element must occupy the leftmost D position within the DP, as is shown in (53a–b). In agreement with the Attract Closest, the lower genitive DP cannot be moved over the higher one in such a case; it can only be moved if there is no higher DP; see (53c).

(53) a. se   holtiton isä-n   auto-n   ajaminen
        that reckless father-GEN car-GEN driving
        'that reckelss driving of a car by the father'

     b. Kenen$_i$ holtiton t$_i$ auto-n   ajaminen?
        who.GEN reckless   car-GEN   driving
        'That reckelss driving of a car by who?'

     c. minkä$_i$ holtiton   (*isä-n)   t$_i$ ajaminen
        who.GEN reckless   father-GEN   driving

The same observation applies to genitive DPs that are not *wh*-elements. In the example (54a–b), I have tried to move the lower genitive DP. This is impossible, however.

(54) a. Kahden   miehe-n auto-n   ajaminen oli holtitonta.
        two   men-GEN car-GEN driving was reckless
        'The driving of a car by two men was reckless.'

     b. *Auto-n$_i$ kahde-n miehe-n t$_i$ ajaminen oli holtitonta. (DP-movement)
        car-GEN   two   men-GEN   driving was reckelsss

Genitive displacement is thus constrained by Attract Closest, one hallmark of movement. A further argument for the hypothesis that genitive DPs are first generated below the *n*P and moved to (Spec, *n*P) or higher is provided by agreement facts. Recall that the nominal head agrees with the genitive DP if the DP is pronominal. Agreement is marked by an agreeing possessive suffix in the nominal head, as shown in (55).

(55) kaikki minun punaiset auto-ni
     all   my   red   cars-PX/1SG
     'all the red cars that are mine'

That this is a form of agreement can be demonstrated by comparing it with standard agreement in a finite context. Like a finite verbal context, the pronoun can be dropped in a nominal context if the agreement marker is present. Thus, (55) is grammatical and identical in meaning even if the pronoun is dropped. This mirrors the fact that Finnish is a *pro*-drop language. Moreover, as in a finite verbal context, the pronoun cannot be dropped if the construction is in the third person singular (see Vainikka & Levy 1999). Finally, in MP verbal agreement is triggered when the EPP feature of T probes the subject DP into (Spec, TP). Thus, reasoning analogously, agreement should be triggered by the EPP feature of *n* after the DP is probed into (Spec, *n*P). We have just seen that this is exactly what happens.

In agreement with Vainikka (1989), I conclude that genitive DPs do appear in the specifier position (Spec, *n*P) within the noun phrase. However, the valuation of genitive Case is a more complex matter. This Case seems to be valued by *n* in a downward fashion, after which the DPs raise obligatorily to (Spec, *n*P) and optionally to a higher position.

5. CONCLUSIONS

By examining the properties of Finnish DPs, I found evidence in favor of the Kaynean model of Case. This model makes three separate assumptions about Case, namely, that (i) Case is not valued to DPs, (ii) Case is valued to lexical elements instead, and finally, that (iii) these assumptions eliminate the need for a separate rule for Case concord and hence unifies the explanation of Case valuation with the explanation of Case concord. A more detailed version of the Kaynean model was then developed. According to this model, Case is valued for each phase (e.g., CP, *v*P) under local c-command relations (or probe–goal relations) with reference to particular Case hiearachy.

ACKNOWLEDGEMENTS

NOTES

1. For Chomsky's recent formulation of this position, see Chomsky (1995:110–124, 258–259). Note that according to this model, non-phrasal constituents may also be valued Case if and only if they occupy the specifier and complement positions. I thank the anonymous *NJL* reviewer for pointing this out.

2. In Finnish, the genitive suffix *-n* is homonymous with the accusative case in singular, but not so in plural. In the plural, the accusative suffix is *-t* whereas the genitive suffix is *-Cen*. When the *-n* suffix is glossed as genitive or accusative in this article, the choice is based on the plural test. Nominative is usually marked as a zero (Ø) suffix in Finnish. The accusative and partitives are object cases in Finnish, while Vainikka (2003) argues that the partitive is the default object case. Accusative case is more restricted in its distribution. The distribution between the two in verbal domains is controlled by the telic properties of the verb (Kiparsky 1998, Nelson 1998, Vainikka 2003). For a general discussion of Finnish case see Nelson (1998).

3. In many other grammatical systems, case concord is explained by relying upon a separate 'feature sharing' rule and similar mechanisms; see Yip, Maling & Jackendoff 1987.

4. I believe that the correct generalization, proposed at least in Stowell (1981), is that if the numeral inflects for matrix case, then it cannot value case, and vice versa, if the numeral values case, it will appear in its bare form. But if the numeral declines, so does the nominal head. Either way, the morphosyntactic properties of these DPs do not support the idea that the numeral would constitute the nominal head of the DP.

5. This phenomenon is not peculiar to Finnish; see Rijkhoff 2002.

6. As far as I can tell, these facts have not been reported before. Thus, the term '*kasa* construction' is my own innovation. As will become clear later, there is nothing special about the *kasa* construction: it contains a nominal head complemented with a PP.

7. The relevance of this example to the matter at hand was pointed out to me by an anonymous *NJL* reviewer.

8. The notion of a Case Hierarchy might need relativization to a particular language, as the available cases as well as their ranking seems to differ from language to language. One could reduce the distinction to the difference between structural vs. non-structural case but – as Vainikka (1989, 1993) has argued convincingly that both genitive and partitive are structural cases in Finnish, yet they must be located higher in the Case Hierarchy than the nominative and accusative – we must abandon this approach as too simple. Wechsler & Zlatić (2001) provide evidence that in Serbo-Croatian, dative and instrumental case must be singled out as the highest ranking member in the Case Hierarchy. Kiparsky (1972, inter alia) notes that there is a tendency that the semantic relevance of the case features correlates with Case Hierarchy so that the semantically more relevant forms tend to be expressed overtly. Wechsler & Zlatić (2001) rely on this generalization in their own explanation of the Serbo-Croatian data. In particular, they suggest that the dative and instrumental in Serbo-Croatian have more semantic content that the other case features, and must thus be retained at the surface structure. This explanation seems to apply to Finnish as well in that the nominative and accusative contain, in some sense at least, 'less semantic content' than any other case feature. However, the relevant notion of the semantic content of a case feature and the exact mechanisms of how this notion influences the grammatical and morphological realization of case features remains to be worked out. Under the MP, the most natural place to look for such mechanism is theta-marking.

9. For me, only the narrow scope reading is possible.

10. There is some resistance towards covert raising of universal quantifiers in contexts like these, see Reinhart 2006. My own intuitions do not allow the wide scope reading of 'every woman' in (52). However, this is irrelevant to the matter at hand.

REFERENCES

Babby, Leonard H. 1987. Case, prequantifiers, and discontinuous agreement in Russian. *Natural Language & Linguistic Theory* 5, 91–138.

Bošković, Željko. 2006. Case checking vs. Case assignment and the case of adverbial NPs. *Linguistic Inquiry* 37, 522–533.

Brattico, Pauli. 2005. A category-free model of Finnish derivational morphology. *SKY Journal of Linguistics* 18, 7–6.

Brattico, Pauli & Saara Huhmarniemi. 2006. Finnish negation, the EPP, and the valuation theory of morphosyntax. *Nordic Journal of Linguistics* 29.1, 5–41.

Brattico, Pauli & Alina Leinonen. In press. Nominalization and Case distribution. *Syntax*.

Carstens, Vicki. 2000. Concord in Minimalist theory. *Linguistic Inquiry* 31, 319–355.

Chomsky, Noam. 1981. *Lectures on Government and Binding: The Pisa Lectures*. Berlin & New York: Mouton.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by Phase. In Michael Kenstowicz (ed.), *Ken Hale: A Life in Language*, 1–52. Cambridge, MA: MIT Press.

Chomsky, Noam. 2006. Approaching UG from below. Ms, MIT.

Clahsen, Harald, Sonja Eisenbeiss & Anne Vainikka. 1994. The seeds of structure – A structural analysis of the acquisition of Case marking. In Teun Hoekstra & Bonnie Schwartz (eds.), *Language Acquisition Studies in Generative Grammar*, 85–118. Amsterdam: John Benjamins.

Franks, Steven. 1995. *Parameters of Slavic Morphosyntax*. New York: Oxford University Press.

Franks, Steven. 2002. A Jakobsonian feature based analysis of the Slavic numeric quantifier genitive. *Journal of Slavic Linguistics* 10, 141–181.

Huhmarniemi, Saara. In preparation. DP-internal A-bar movement in Finnish. Ms., University of Helsinki.

Kayne, Richard. 1994. *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.

Kayne, Richard. 2005. *Movement and Silence*. Oxford: Oxford University Press. [The relevant chapter originally published as Richard Kayne. 2002. On some prepositions that look DP-internal: English *of* and French *de*. *Catalan Journal of Linguistics* 1, 71–115.]

Kiparsky, Paul. 1972. Explanation in phonology. In Stanley Peters (ed.), *Goals of Linguistic Theory*, 189–227. Englewood Cliffs, NJ: Prentice-Hall.

Kiparsky, Paul. 1998. Partitive case and aspect. In Casper DeGroot & Hannu Tommola (eds.), *Aspect Bound: A Voyage in the Realm of Germanic, Slavic and Finno-Ugric Aspectology*, 153–176. Dordrecht: Foris.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your lexicon. In Alexis Dimitriadis & Laura Siegel (eds.), *21st Annual Penn Linguistics Colloquium* (Penn Working Papers in Linguistics 4), 201–225.

Nelson, Diane. 1998. *Grammatical Case Assignment in Finnish*. London: Garland.

Przepiórkowski, Adam. 1996. Case assignment in Polish: Towards an HPSG analysis. In Claire Grover & Enric Vallduví (eds.), *Studies in HPSG* (Edinburgh Working Papers in Cognitive Science 12), 191–228. Edinburgh: Edinburgh University Press.

Rappaport, Gilbert C. 2001. Case syncretism, features, and the morphosyntax of Polish numeral phrases. In Piotr Bański & Adam Przepiórkowski (eds.), *Generative Linguistics in Poland 5*, 123–137. Warsaw: Academy of Sciences.

Reinhart, Tanya. 2006. *Interface Strategies: Optimal and Costly Computations*. Cambridge, MA: MIT Press.

Rijkhoff, Jan. 2002. *The Noun Phrase*. Oxford: Oxford University Press.

Ritter, Elizabeth. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew. In Susan Rothstein (ed.), *Perspectives on Phrase Structure: Heads and Licensing* (Syntax and Semantics 25), 37–62. New York: Academic Press.

Salo, Pauli. 2003. *Causatives and the Empty Lexicon: A Minimalist Perspective*. Ph.D. dissertation, University of Helsinki.

Stowell, Tim. 1981. *Origins of Phrase Structure*. Ph.D. dissertation, MIT.

Vainikka, Anne. 1989. *Deriving Syntactic Representations in Finnish*. Ph.D. dissertation, University of Massachusetts, Amherst.

Vainikka, Anne. 1993. Three structural cases in Finnish. In Anders Holmberg & Urpo Nikanne (eds.), *Case and Other Topics in Finnish Syntax*, 129–159. Holland: Kluwer.

Vainikka, Anne. 2003. Postverbal case realization in Finnish. In Diane Nelson & Satu Manninen (eds.), *Generative Approaches to Finnish and Saami Linguistics*, 235–266. Stanford, CA: CSLI Publications.

Vainikka, Anne & Yonata Levy. 1999. Empty subjects in Hebrew and Finnish, *Natural Language & Linguistic Theory* 17, 613–671.

Vilkuna, Maria. 2000. *Suomen kielen lauseoppia*. Helsinki: Edita.

Wechsler, Stephen & Larisa Zlatić. 2001. Case realization and identity. *Lingua* 111, 539–560.

Yip, Moira, Joan Maling & Ray Jackendoff. 1987. Case in tiers. *Language* 63, 217–250.