1 Introduction

This article is based on the observation that a considerable reduction of the descriptive complexity of Finnish morphosyntax is possible once we assume that case-marking grammatical heads can undergo several changes during the derivation. Such a system and its application to Finnish, a language with notoriously complex case system, will be provided in this article.

A secondary motivation is to bring theories of Finnish morphosyntax in line with many of the more recent observations concerning structural case assignment in Finnish, for example, noun internal case assignment, case concord, case competition, multiple nominative constructions, and long distance case assignment, all phenomena which remain isolated and, therefore, without broader theoretical coverage. I shall show that they are all consequence of an iterative feature checking system. Thus, this article continues the tradition of works such as Vainikka (1989) and Nelson (1998), who provide seminal broad generative theories of Finnish morphosyntax within the GB-theory, but do not cover the phenomena just mentioned.

Theoretically, the present work is situated within naturalistic linguistics. According to this framework, we study language as a natural phenomenon and, consequently, use the natural-scientific method invented by the first natural philosophers during the 17th century, and applied today exactly as it was applied then. I see no point in going back several hundred years and do something else. The most advanced theory of language to date that uses this approach is the generative theory. Hence, this theory plays a substantial role here.

According to this theory, linguistic expressions are build up by combining words and phrases. This build-up process is called derivation. The process that combines words and/or phrases is called Merge. Words, however, are not monolithic atoms but often made up of further ingredients such as grammatical heads (the ultimate derivational morpheme pieces), which are downloaded from the lexicon, and inflectional endings, the latter which are a result of Agree. I will assume that a head can agree with elements (other heads and possible phrases) inside its sister, also called c-command domain. Nouns exhibit agreement by means of case suffixes, while other heads exhibit it by means of phi-agreement (agreement in terms of gender, number and person). Notably, Finnish exhibits both finite and non-finite phi-agreement.

Grammatical heads may have further properties or features. These features are stored in the lexicon. Some of these features may change during the derivation. In the common parlance, features may be “checked”, for example. Whatever the ultimate reality of such operation, something changes in the way the said grammatical head behaves in subsequent derivation.
Linguistic objects derived by means of Merge and other operations are linked with several extralinguistic cognitive systems. For example, a linguistic object can be spoken, written, whispered, gestured and so on. Thus, on one side language is related to our sensory motoric systems. It is common to capture this fact by saying that language is connected to the sensory motoric systems via a PF-interface. If there were no PF-interface, linguistic expressions could not be communicated. Hence, we can imagine that the term “PF-interface” refers broadly to some aspects of the neuronal connection between language processes and sensory/motoric processes. In addition, linguistic expressions have links to meaning, planning, thought and other forms of language use. A convenient way to capture this is to say that language is related to meaning via an LF-interface. If there were no LF-interface, then language could only be used in its sensory function, perhaps akin to a bird song. The term “LF-interface” then refers to some properties of the neuronal pathways and operations connecting language and meaning.

Some linguists claim that it makes no sense to separate language or linguistic processes in this manner from meaning. With only a very few exceptions, however, the linguists who make such claims also do not work within the naturalist framework assumed here; instead, they labor under the Aristotelian system, in which a priori, axiomatic theory is used to describe raw observations. Hence, the whole debate is meaningless. Once you assume the naturalistic framework you have to separate language from sensory motoric processing and thought – as is done in all clinical linguistics and other medically relevant contexts, for example. By the same token, very little is understood about the PF- and LF-interface.

The notion of EPP (from “Extended Projection Principle”) occurs a few times in the text below. It refers to the fact that some grammatical heads open up, either obligatorily or optionally, an extra phrasal position above their first-merge complement position, as in ‘[XP [H YP]], XP = Spec’. This feature is in much use in Finnish, both in the A-domain and A-bar domain. It is connected to Agree in some way that is not perfectly clear. Possibly it serves to bring certain features, such as phi-features, inside head H’s local projection.

2 The hypothesis

In the standard minimalist theory, grammatical heads can normally be in one of two states, active and inactive. These states are furthermore ordered linearly so that active heads can become inactive, but not vice versa. The description of the whole of Finnish morphosyntax can be reduced to few essential rules once we assume that, instead of being only in two possible states, a grammatical head can be in one of four possible states. These states are furthermore ordered linearly (i.e., state$^{III}$ > state$^{II}$ > state$^{I}$ > state$^{0}$). An operation can change a state of a grammatical head in accordance with this ordering, until the lowest state (state$^{0}$) is reached; then item becomes morphosyntactically inactive. We can loosely speak of an ‘energy state’ of a head that is lowered as a consequence of grammatical operations. This terminology is useful because higher energy states in the above order correspond to higher morphosyntactic activity.
At the highest state\textsuperscript{iii}, a head assigns the \textit{nominative case} to unmarked arguments until it establishes phi-agreement with an argument; if no phi-agreement takes place, the head will remain at this state and assign the nominative over and over, as shown in (1).

1)

\begin{enumerate}
\item Liisa nukkuu.
\begin{itemize}
\item Liisa.nom sleep.3sg
\item ‘Liisa sleeps.’
\end{itemize}
\item Me löydettiin kello.
\begin{itemize}
\item we.nom found.impass watch.nom
\item ‘We found a watch.’
\end{itemize}
\item Me nähtiin Liisa voittamassa kilpailu.
\begin{itemize}
\item We.nom saw.impass Liisa.nom to.win competition.nom
\item ‘We saw Liisa winning the competition.’
\end{itemize}
\end{enumerate}

The finite head assigns the nominative case to the subject (1)(a), to the direct object (b), and in fact to any possible unmarked case-assignee it c-commands (c), because the impersonal passive verb is unable to agree in phi-features. The head remains at state\textsuperscript{iii} throughout the derivation, thus assigning the nominative case for several arguments. This captures the properties of the Finnish ‘multiple-nominative constructions’, in which a non-agreeing head assigns the nominative over and over. Once there is agreement, however, the head loses energy, goes into a lower state\textsuperscript{ii}, and then assigns the \textit{genitive case} to all unmarked arguments, as shown in (2).

2)

\begin{enumerate}
\item Liisa sõi leivän.
\begin{itemize}
\item Liisa.nom ate.3sg bread.gen
\item ‘Liisa ate the bread.’
\end{itemize}
\item Me löysimme kellon.
\begin{itemize}
\item we.nom found.1pl watch.gen
\item ‘We found the watch.’
\end{itemize}
\item Me näimme Liisan voittamassa kilpailun.
\begin{itemize}
\item we.nom saw.1pl Liisa.gen to.win competition.gen
\item ‘We saw Liisa winning the competition.’
\end{itemize}
\end{enumerate}
Notice that, again, the head assigns the genitive over and over due to the fact that there is no further agreement. The subject-verb agreement in (2) results from the first step, in which the finite element assigns the nominative case (State\textsuperscript{III}) and then goes into a lower-energy State\textsuperscript{II}. Thus, phi-agreement ‘discharges’ a packet of energy from the head.

If there is further phi-agreement, the head will again lose a packet of energy and fall to State\textsuperscript{I}, in which it will assign the partitive or accusative case to all unmarked arguments it c-commands. The partitive and accusative occur in different environments that will be the topic subsequent discussion. A head that is in this state, however, will never agree with an argument. Here are some examples:

3)  

a. Pekan kasa autoja (first genitive, then partitive)  
Pekka.gen stock car.pl.par  
\[\text{\leftarrow\longrightarrow\longrightarrow\rightarrow}\]  
‘Pekka’s stock of cars.’

b. kolme sukkaa. (singular-marked numeral assigns the partitive)  
three.sg sock.sg.par  
\[\text{|\longrightarrow\longrightarrow\rightarrow}|\]  
’three socks’

c. kohti taloa. (prepositions assign the partitive, no agreement)  
towards house.par  
\[\text{|\longrightarrow\longrightarrow\rightarrow}|\]  
‘towards the house.’

The traditional object-case assigners are thus state\textsuperscript{I} heads: nonagreeing heads that assign the object cases. If a head is in the fourth state\textsuperscript{0}, it will be morphosyntactically idle, thus it will assign no case and accept no phi-agreement. A prototypical example is the Finnish complementizer \textit{että} ‘that’ or conjunctions such as \textit{ja} ‘and’ and \textit{vaikka} ‘although’. A partitive-assigning state\textsuperscript{I} head can still lose energy and fall into state\textsuperscript{0} by means of selection. One consequence worthy of notice here is the obligatory control construction, in which an argument that is semantically/thematically present remains without case and becomes phonologically null, as shown in (4).

4)  

a. Pekka käske Merjan lähteä  
Pekka.nom asked.3sg Merja.gen to.leave  
‘Pekka asked Merja to leave.’
b. Pekka halusi PRO/*Merjan lähteä.
   Pekka.nom wanted3sg to.leave

   ‘Pekka wanted (*Merja) to leave.’

In the example (b), the combination of the matrix verb *halusi* ‘want’ and an infinitival *lähteä* ‘to leave’ reduces the embedded infinitival into State⁰ (from State¹, example a), in which it is unable to enter into further morphosyntactic operations and the argument remains without case, hence it will be phonologically null and semantically impaired, requiring binding support. Thus, the distribution of obligatory null subjects in Finnish will be captured by the present system.

Anne Vainikka has established that the partitive is a ‘default complement case’ in Finnish, while the genitive is a ‘specifier case’. Indeed, the partitive occurs when an argument is complemented to a head, such as verb, adposition, adjective, numeral, while the genitive occurs when the argument is at spec (apart from the contexts involving nominative). The partitive is not semantic, and it is only in exceptional cases interpreted as ‘being part of’. This generalization, correct as it is, is captured by the present system: a head that agrees with something at its Spec and assign it the genitive case will be at state¹ and thus assign the partitive. Hence, we capture Vainikka’s generalization by using state-transition (state²l => state⁰).

This gives the flavor of the idea. I will make few further points about it before we proceed with full formalization. Much of the data cited above is gibberish for linguists working with Indo-European languages, specifically with languages such as German, English or Swedish. In the Finnish examples, we have subject cases distributed to object arguments. In many of the examples, case assignment is also nonlocal. This is a fact that a linguistic theory has to accommodate, in one way or another. In other words, Finnish has such properties. Under the present analysis, it will be assumed that morphosyntactically impoverished languages, such as English, lack state³l heads. In English, there are state³l heads (which assign the nominative) and state¹l heads (which assign the accusative), and a state-transition between the two. Finnish has state³ll heads in addition, which is connected directly to the productive and systematic phi-agreement in this language. The ‘energy content’ of a head is directly mirrored in the overt morphosyntax, both in case assignment (Finnish has fifteen case suffixes) and agreement (Finnish has productive finite and non-finite agreement).

Morphosyntactically isolative languages have state¹l0 heads, or indeed just state⁰ heads. Thus, some of the linguistic variation between e.g. Finnish and English will reduce to the presence of state³ll heads in the former language.

Different languages utilize different grammatical heads, or features therein, in its buildup of constructions. To make the exposition as simple as possible, I will try to avoid such controversies. I will freely speak of “finite verbs” being in state³ll, for example, without attempting argue how such elements are composed out of more primitive grammatical heads (e.g. T, Fin, v). The idea is, of course, that it is not the finite verb as such that is in any of these states, but rather the functional elements that it contains, whatever they may be. I will
speak loosely of Fin/T and v throughout this article, but without attempting to be precise. Much has been written concerning the derivation of Finnish constructions elsewhere.

3 Formalization

Let us next formalize this system. There will be a simple hierarchy of states and state-transformations (5). The notions ‘eligible’ and ‘locality domain’ that appear in this definition will be delineated below. Slight revisions to this formalization will be proposed later in this article.

5) **Possible states for grammatical heads that assign structural cases**

   State\textsuperscript{III}: assigns the nominative to any eligible or unmarked argument that it c-commands and which occurs inside its locality domain until phi-agreement takes place; then go into

   State\textsuperscript{II}: assigns the genitive to any eligible or unmarked argument that it c-commands and which occurs inside its locality domain until phi-agreement takes place; then go into

   State\textsuperscript{I}: assigns the partitive/accusative to any eligible or unmarked argument that it c-commands and which occurs inside its locality domain until selected by certain heads, then go into

   State\textsuperscript{0}: assigns no case.

Each grammatical head will be in one of these four states when it enters the derivation. Some heads are marked for a given state in the lexicon, but others can take several forms, often in what looks to be free alteration. Finnish adpositions that can occur either in State\textsuperscript{II} or in State\textsuperscript{I}, as shown in (6).

6) a. lähellä\textsuperscript{l} minua (State\textsuperscript{l} assigns the partitive, no agreement)  
   near.0 I.par  
   ‘near me’

   b. minun lähellä\textsuperscript{ll}-ni (State\textsuperscript{ll} assigns the genitive, and agrees)  
   I.gen near-1pl  
   ’near me’

I will return to possessive suffix agreement exhibited by (6)b later. It is possible to observe the state-transition itself when the head licensed both a specifier and a complement. Noun heads behave in this manner.

7) Minun kasa-ni autoja  
   I.gen stack-1sg cars.par  
   \textsuperscript{←}--gen-- | State\textsuperscript{ll}  
   State\textsuperscript{l} | ---par--→  
   ’My stack of car’
Finite verbal elements, such as the finite verb, auxiliaries or the negation, are in state\(^{III}\) when they are first merged; once they agree, they discharge some energy and fall to state\(^{II}\). Non-finite verbs, adverbials, nouns, some prepositions and participles always occur in state\(^{III}\): they have genitive subjects and partitive complements. Many subjectless and agreementless heads are in the state\(^{I}\), in which case they assign the partitive(accumulator) to their complements but do not exhibit agreement.

Some grammatical heads assign the lexico-semantic cases. Such heads are in another state, call it State\(^{I}\), I will ignore here. This state has the property that it does not seem to enter to the energy-reduction paradigm exhibited by the structural cases.

In a typical scenario, a head can only assign cases to arguments that remain unmarked. An argument that is assigned the partitive, for example, can never be ‘re-assigned’ the nominative; an argument that bears a lexical case cannot be re-assigned the genitive. One could therefore develop a model in which each argument is assigned structural case only once. This system would suffice for the purposes of describing case assignment in English, for example. This is only a tendency, however. There are examples in which cases come into competition with each other. The Finnish sentential negative particle e-, for example, is able to partitive all direct objects regardless of whether they have been assigned the nominative, genitive or accusative before the negation is merged. Similarly, the partitive case that is assigned by the numeral to a noun head can be overridden by genitive case assignment to the whole argument. There could be other forms of case competition that we don’t see directly, due to the fact that Finnish, unlike some other languages, does not allow case stacking. But there are languages that allow extensive case stacking, showing how one and the same element may in fact be assigned several cases.

To describe such properties correctly, we resort to a notion of ‘case competition’. The notion of case competition, and the underlying assumption that a given argument can be assigned several cases, has independent support. The case competition rule, stated below, augments the state-transition system (5) by giving the precise conditions concerning when a head will assign a case to an argument that already has case.

An argument that has been case-marked once but will be subject to re-assignment due to case competition will be called ‘eligible’ in the definition (5). To consider an example, examine how the noun head changes its case in (8).

8)  

a. Ostin [kolme sukkaa]\textsubscript{acc.}  
bought.1sg three.sg sock.sg.par  
‘I bought three socks’

b. Nään [kolmen sukan]\textsubscript{gen} menevän rikki.  
saw.1sg three.gen sock.gen to.go broken  
‘I saw three socks going broke.’
In the example (a), the noun head is assigned the partitive case by the state\(^{\text{st}}\) head ‘three’. The noun phrase itself occurs in the context in which it is assigned the accusative case, as can been seen, for example, by using a demonstrative pronoun inside the noun phrase (ne kolme sukkaa ‘those.acc three.0 sock.par’). When the same noun phrase occurs in a context where it is assigned the genitive case, by the infinitival verb that is in the state\(^{\text{nd}}\), the partitive case is lost and is replaced by the genitive. Hence in this case state\(^{\text{st}}\) case will be ‘outperformed’ by state\(^{\text{nd}}\) case that targets the same noun phrase (thus *näin kolme sukkaa menevän rikki ‘saw three.0 sock.sg.par go broke’ is ungrammatical). I will then say that the partitive-marked noun head sukkaa ‘sock.sg.par’ is eligible for re-assignment by a head that assigns the genitive. The following case competition rule (9) captures most of the data of this sort. A slight reformulation will be required later.

9) Case Competition (revised later)  
\[ \text{Nominative} < \text{Partitive-of-Num} < \text{Genitive} < \text{Partitive/Accusative-of-\textit{v}} < \text{Partitive-of-Neg} < \text{Lexical case} \]

The rule is read as saying that the nominative case can be outperformed by the partitive of numeral (‘nominative \(<\) partitive of num’) and not vice versa, and that the accusative-of-\textit{v} can be outperformed by partitive of negation; and so on. It also means that a nominative case marking is unable to outperform the partitive assigned by the numeral, as in ne kolme sukkaa ‘those.nom three.0 sock.par’, while the genitive case marking is able (8)b.

The state-transformation rule (5) further requires that case assignment remains confined into a ‘locality domain’. What this locality domain is in Finnish is a difficult question due to the existence of long distance case assignment phenomenon. Long distance case assignment refers to a phenomenon in which direct objects are case-marked by nonlocal heads. There are two types of long distance case-marking in Finnish: one, in which a noun phrase otherwise marked for the accusative case is marked either by the genitive or by the nominative depending on whether the direct object is c-commanded by a head that exhibits agreement. The second type of long distance case assignment occurs when the sentential negation partitivizes all direct objects in its c-command path that are marked either by nominative, genitive or accusative (see case competitions 8) and which again occur inside its ‘locality domain’ whose constitution is controversial. We will capture the notion of locality domain by using an intervention rule (10).

10) Locality domain for case assignment

A head \(X\) can (not: will) assign a case to \(YP\) if and only if (a) \(X\) c-commands \(YP\); (b) no head \(Z\) that shares its properties with \(X\) intervenes between \(H\) and \(XP\).

Intuitively it so happens that a head \(X\) can assign cases downstream until it encounters a head that is identical or similar enough to itself; then it will stop looking further. The implication is that in configuration (12) \(X\) can case-mark \(Y\), but not \(X\) or \(Z\). It will case-mark \(Y\) if \(Y\) is either unmarked or has case-marking lower in the case competition hierarchy than \(X\).
Condition (10) requires case assignment to flow into downward direction. There is no controversy that in Finnish case assignment can flow downwards: long distance case assignment is always directed downwards, and there is no plausible analysis that would invoke an (local) upward direction to explain such dependencies. The controversy is rather whether we need an upward (e.g. Spec-Head) relation in addition to a downward (c-command) relation. Anne Vainikka in particular has proposed that there are two case assignment mechanisms, one based on Spec-Head and another on c-command. As far as I can see, all the data can be explained by both models, so I will posit only a downward dependency, itself based on simple c-command relation. The cost of this decision is that in certain construction, we need to invoke (EPP) movement after case assignment.

The proposal makes certain empirical predictions. Because state-transitions are ordered linearly, it is predicted that a head cannot increase its energy content by means of phi-agreement. For example, the following scenarios are deemed as impossible: a head assigns the partitive and then the genitive (stateI => stateII); a head assigns the genitive and then the nominative (stateII => stateIII); a head assigns the partitive and then the nominative (stateII => stateIII) and so on. So, upward mobility is prohibited. In addition, if phi-agreement fails to take place (for II, III), the head cannot release a packet of energy and must remain in its current state.

4 Canonical case structures

4.1 Finite clause

Here we will take a look at canonical case assignment phenomena in Finnish to show that the rules work as intended. In a standard transitive clause with a subject and a direct object, we have the following:

12) Pekka sõi omenan.
   Pekka.nom ate.3sg apple. gen
   ‘Pekka ate a/the apple.’

The finite verb will be in stateIII and assign the nominative to the subject, and then genitive to the direct object. The finite verb does not c-command the subject, however. We will assume the more or less standard theory here, according to which the subject is assigned its case prior to dislocation to Spec,Fin/TP, as shown in (13).

13) sõi Pekka v omenan.
   ate Pekka.nom apple. gen
   ate.3sg nom gen
   StateIII =========⇒
   StateII ==============⇒
Will the state II head Fin/T III reassign the genitive case to the subject as well? We will later find evidence that the subject argument is A-moved to Spec,Fin/T before Fin/T implements genitive assignment, and thus the argument will escape case reassignment here. We can capture this by assuming that the agreement between the subject and the Fin/T III “contains” EPP movement.

14) Pekka sōi ___ omenan.
    Pekka.nom ate.3sg apple.gen

       (EPP Movement + Agree)

       |==========⇒ gen

Another question is if the direct object omena- ‘apple’ interacts with v, and if so, how. The case competition rule does not let the genitive to outperform the partitive/accusative of v. To have the genitive case assigned to the direct object here, no object case can then be assigned by v in (11), thus the situation with respect to v and the direct object is as depicted in (15).

15) Pekka sōi v omena-
    Pekka ate apple-

    (No case assigned to apple by v)

Indeed, it is the case that if the direct object is in the plural or a pronoun, it will not be assigned the genitive (*Pekka sōi omenoiden ‘Pekka ate apples-gen’, Pekka näki heidän ‘Pekka saw they-gen’). It is assigned the t-accusative (Pekka sōi omena-t ‘Pekka ate apples-acc(t)’, Pekka näki hänë-t ‘Pekka saw he-acc(t)’). The reason is because, if the direct object is in plural, or a pronoun, it will be assigned the accusative case by v that cannot be outperformed by the genitive case assignment higher up. But in (11), the singular full DP is not assigned a case by v, and hence it receives a case from the state III finite verb.

16) Pekka näki vI omenan
    Pekka.nom saw apple.gen

       ←−−−−−−−−−−−−−−−−−→

    Pekka näki vI omena-t
    Pekka.nom saw apples.acc(t)

       ←−−−−−−−−−−−−−−−−−→ gen

       |⇒ acc(t)(by case competition)

The fact that v assigns some case here is due to its being in state I. This is a lexical matter in Finnish. Notice that the genitive case is assigned ‘over’ v. According to the current system, Fin/T can assign the genitive over v if v does not constitute an intervening head in the sense of (10), and v does not trigger an intervention if it does not share its properties with Fin/T. They differ from each other in the sense that Fin/T is in state III, II while v is a state I head.
Case competition rule predicts that the sentential negation, which distributes the partitive case to its c-command domain, should outperform both accusative and the genitive. This is indeed the case (*Pekka ei nähnyt omenaa/*omenan/*hänet* ‘Pekka not see apple-par/apple-gen/he-acc(t)’). I have shown elsewhere that the partitive of negation outperforms the partitive of aspect, as is noted in (11). But locality is violated. The partitive of negation is a long-distance phenomenon; it will flip all direct objects into partitive in its c-command domain, whether local and not.

The Finnish negative particle behaves like an auxiliary, thus it agrees in phi-features with the subject, if any. It should therefore be in state\textsuperscript{III} and assign the genitive to the direct objects. It does not; it assigns the partitive, like a state\textsuperscript{II} head. Notice, however, that the partitive-of-negation differs from the typical structural partitive case: the partitive-of-negation occurs at a higher level in the case competition hierarchy, almost at the level of lexical cases. We also know that the partitivization phenomenon will be triggered (optionally) by negative polarity adverbs, and that it can penetrate even finite CP boundaries (marginally). Thus, the partitive-by-negation is a \textit{semantic polarity case} assigned by the negative polarity feature that is associated either with Neg or with a negative adverb (such as ‘hardly’). I will assume that the polarity feature is in state Pol\textsuperscript{I} (=polarity feature). This case will outperform the genitive direct object that is assigned by the Neg\textsuperscript{III} itself, as stated in the case competition rule.

17) ei Pekka halua syödä omenaa.
     not Pekka want eat apple.par
     [neg\textsuperscript{III}]\textrightarrow nom\rightarrow\rightarrow\rightarrow\rightarrow gen
     [pol\textsuperscript{I}]\rightarrow\rightarrow\rightarrow\rightarrow par

Example (16) reveals a problem: the negation will not re-assign partitive to any of the subjects, although the subject cases occur lower in the case competition hierarchy. I have assumed that the subject A-moves to Spec,NegP, which explains away this anomaly (i.e. the sequence is: Neg\textsuperscript{III} assigns the nominative to Pekka and phi-agrees; then Pekka moves to Spec,NegP; then Neg\textsuperscript{II} assigns the genitive).

Let us consider aspect. In Finnish, an event that is interpreted aspectually incomplete will be associated with the partitive direct object. This partitive thus occurs instead of t-accusative or the genitive, both which are associated with completed aspect. The standard assumption is that there is an aspect feature Asp at v. It is further assumed that this aspect feature triggers the alteration between all accusative forms (t-accusative, genitive) and partitive so that ‘incomplete aspect = partitive, complete aspect = all other direct object cases’.

The aspectual feature would be in state\textsuperscript{I} according to the present system. The aspectual partitive case associated with incomplete aspect will not get outperformed by the genitive, nominative or t-accusative, as stated in the case competition rule, which is what we indeed find. The partitive-of-incomplete-aspect cannot be changed into genitive, nominative or t-accusative under any scenario. It is outperformed by the partitive of negation, though. This effect is not visible at the surface, but can be demonstrated by showing that the
partitive of negation neutralizes the aspectual acc/gen-prt alteration. Hence, we have the partitive-of-negation higher in the case competition hierarchy than any of the aspectual cases.

The standard nom-acc pattern breaks down if the finite verb does not agree. We get the multiple-nominative construction (12). A stateIII head that does not agree will assign the nominative over and over, as it remains in its high-energy state.

18) Me ostettiin talo.
    we.nom bought house.nom

There are also genitive-nom constructions which, too, lack agreement (13).

19) Meidän täytyy ostaa talo.
    we.gen must.0 to.buy house.nom

If the modal verb occurs in stateII, as indicated by the fact that it assigns the genitive, it should drop to a lower-energy state and assign the partitive (as in Pekan kasa omenoita ‘Pekka’s stack apples-par’). Anne Vainikka, and prior to that Hannu Reime, have noted that the nominative is assigned to a direct object when the main verb does not exhibit agreement. Let’s call this the Reime-Vainikka generalization. I think it is basically true. If we follow this, then we should model (19) analogous to (18), yet the constructions are not analogous. So this is a potential problem.

We have overlooked the fact that the genitive argument is the thematic subject of the non-finite verb ostaa ‘to buy’), and that this non-finite verb, when it occurs as a complement to a regular verb, will take genitive subjects (Pekka käsiki Merjan lähde ‘Pekka asked Merja-gen to-leave’). The genitive subject of (19) is therefore assigned the genitive by the stateII non-finite verb (ostaa ‘to buy’ in the example above). The modal verb itself is in stateIII, but cannot outperform the genitive case according to the case competition rule, and thus the genitive is not changed in nominative; but since agreement fails, the direct object is. The whole derivation is shown in (20).

20) täytyy [Meidän ostaa talo-]. (Genitive assigned by nonfinite verbII)
    mustIII we.gen to.buyII home

==== (in reality this dependency goes downward prior to movement)

Meidän täytyy [__ ostaa talo-]. (Argument moved for EPP)
    we.gen must.0II to.buy home

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Meidän täytyy [__ ostaa talo]. (Direct object gets the nominative)
    we.gen must.0 to.buy home.nom

=================================>
Notice that this analysis assumes, again, that EPP-movement occurs together with the state-transition. Thus, state\textsuperscript{0} head triggers EPP-movement before it acts as a state\textsuperscript{1} head.

4.2 Noun phrases

Finnish is a word-marking language. Case marking appears on all (or most) individual words inside the DP. The system is based on head-to-head case assignment instead of a dual system of phrasal case assignment plus feature concord. For example, the numeral assigns case to the words below it inside the noun phrase, but not to the words above it. The distribution of case features does not parallel the distribution of phi-feature distribution, so the two are based on different mechanisms. Thus, we have the case assignment mechanism illustrated in (21).

21) Pekka osti [sen nopean auton]
   Pekka bought that-gen fast-gen car-gen

   Numerals (other than one) are state\textsuperscript{1} case assigners in Finnish and assign the partitive (16). Notice the distribution of phi-features in these examples.

22) Pekka osti [ne kolme mustaa sukkaa]
   Pekka bought those.pl.acc three.sg.0 black.sg.par sock.sg.part

   It was a puzzle why the paradigm in (16) disappears if the whole DP is assigned something else than the nominative or accusative. For example, DPs assigned the sui generis genitive do not exhibit the paradigm in (16)(niiden kolmen mustan sukan…’those-gen three-gen black-gen sock-gen’). The same occurs if the DP is c-commanded by a sentential negation particle. I have always maintained that this is due to case competition, and similar proposals have been made for Slavic languages. Thus, in the current formulation, the case competition rule says that the genitive/nominative cannot outperform the partitive here, but the partitive of negation can and will (Pekka ei ostanut niitä kolmea mustaa sukkaa ‘Pekka not buy those-par three-par black-par sock-par’). The rules will also say that the genitive of subject will outperform the partitive of numeral, which is again the correct result.

State\textsuperscript{1} heads assign the partitive but never agree in phi-features. There nevertheless appears to be agreement in singular in (16). This interpretation of the situation is wrong, because the numeral is in fact not free to agree with the adjective and/or the noun head below. If there is plural marking, the whole partitive pattern disappears (kolmet sukat/*kolmet sukkaa/*kolmet sukkia ‘three.pl sock-pl/three-pl sock-par/three-pl sock.par.pl’). Thus, we find that only a singular numeral (=/\textasciitilde{} 1) can function as a case assigner, which is to say that the state\textsuperscript{1} numeral is marked for singular in the lexicon. I believe the reason why it assigns the partitive case, and occurs in state\textsuperscript{1}, is because it is marked lexically for singular and therefore cannot borrow phi-features from the noun head. Recall that state\textsuperscript{1} heads do not agree in phi-features.
The noun head itself can assign both the partitive and the genitive. If we assume that the DP is headed by a morphologically complex N-head, then this will be in stateIII, assigns the genitive, agrees, falls to stateI and then assigns the partitive.

23) Hänen kasa-nsa legoja.
   He-gen stack-3sg lego-par
   ←−−−−−−−−−−−−−−−−−−−−−−−−→

This analysis would call for a Spec-Head case assignment that we do not yet have in our arsenal. Thus, instead of (25), I will assume that the genitive is assigned downstream by a nominalizer n that exhibits the EPP behavior.

24) Karhun ampu-minen
   bear-gen shoot-ing

   n  [bear  R]    (R = root)
   -ing    shoot-
   |⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒⇒####
in which the genitive Merjan ‘Merja.gen’ is not flipped into partitive by the c-commanding negation, although I have assumed that the partitive of negation occurs higher in the case hierarchy than the genitive. Compare (25) to (26).

26) Pekka näki Merjan (Genitive object.).
   Pekka saw Merja.gen
   ‘Pekka saw Merja’
   Pekka ei nähnyt Merjaa (…turns into partitive under the negation.)
   Pekka not see Merja.par
   ‘Pekka did not see Merja.’

Something similar can be seen in the behavior of the partitive of numeral: the direct object genitive does not outperform the partitive, while the subject genitive does. All these observations suggest that the ‘subject genitive’ is stronger than the ‘direct object genitive’. To capture the fact we need to say something to the effect that stateII assigns the stronger genitive in the presence of phi-agreement and, in the absence of phi-agreement, assigns the weaker genitive. The strengths for these two genitive cases would then be determined by means of a revised case competition rule (27).

27) Case Competition
   Nominative < Weak Genitive < Partitive-of-Num < Partitive/t-Accusative-of-v < Partitive-of-Neg <
   Strong Genitive < Lexical case

This would put the strong genitive case almost on par with lexical case, making it very strong. In addition, we have to revise rule (5) so that stateII heads assign the strong genitive, label it GEN, when they phi-agree (and discharges energy and go to stateI) and the weak genitive gen otherwise, as shown in (26).

28) Minun auto-ni
   I.GEN car-px/1sg
   "Agree"
   ‘My car’
   Hän söi omenan.
   he.nom ate.3sg apple.gen
   "="

The revised case competition rule can be supported by noticing that the weak genitive was historically a sui generis accusative case and distinct from strong genitive, and that the latter is a sui generis genitive. In addition, the weak genitive has no plural form, because it occurs only in the case of singular direct objects; for plurals, it is outperformed by the local partitive and t-accusative. The strong genitive, in contrast, has distinct singular and plural genitive forms. It follows that strong genitive cases are assigned only once, as such assignment leads to phi-agreement and thus energy discharge (stateII \implies stateI). Weak genitive cases can
be assigned several times, but the assignment is often invisible due to the weakness of this case. This leaves it unexplained as why the two cases, strong and weak genitive, still look the same and thus merit the label ‘genitive’? I believe the reason is because they are assigned by the same state* head. Thus, the current analysis allows us to say that each level in the state hierarchy corresponds to one case form: nominative for state**, genitive for state** and accusative/partitive for state†.

5.2 Genitive, possessive and agreement

State* heads assign the genitive and, upon agreement, release an energy packed and then go to state†. This analysis works in some cases, but in others there is the problem that genitive subjects often occur without overt agreement. Indeed, the non-finite possessive suffix agreement is sometimes obligatory, sometimes optional, and in other occasions not possible. Nevertheless, at least in some such cases the head that is associated with the genitive subject must lost energy and go to state†. Consider (28).

29) Meidän täyttyy ___ ostaa uusi auto.
   we.gen must.0 buy.a new.nom car.nom

The non-finite head *ostaa ‘to.buy’ assigns the genitive to the pronoun me ‘we’. If it were in the same state** after this operation, it would assign the genitive to the direct object, and that genitive case could not be outperformed by the nominative that is assigned later by the non-agreeing T/Fin**. Yet the nominative appears. If the nonfinite verb head drops to state†, it would assign the partitive, but here the lower v† clearly intervenes. We can see the same effect more concretely with noun phrases such as *Jussin kasa autoja
‘Jussi.gen stack car.par’, in which the noun head (or n) must again assign the partitive after it assigns the genitive, but there is no overt agreement.

The solution to this puzzle is to notice that agreement and A-movement to Spec are related to each other. I have assumed in my earlier work that they are two sides of the same coin, and function to bring phi-features inside a given head’s projection. Thus, in a configuration ‘H DP’ phi-agreement between H and DP brings the phi-features to H, while A-movement of DP to Spec, HP will not only bring the phi-features but also the hosting noun phrase as well. The state-transitions in rule (5) are then made sensitive not only to phi-agreement in traditional sense but also to movement to Spec, at least what comes to state** heads. To make this stance explicit, we can use ‘phi-donation’ to refer to a process that bring phi-features inside a given head’s project, and the reformulate (5) as (30).
30) Possible states for grammatical heads that assign structural cases

State\textsuperscript{III}: assigns the nominative to any eligible or unmarked argument that it c-commands and which occurs inside its locality domain until \textit{phi-agreement} takes place; then go into
State\textsuperscript{II}: assigns the genitive (weak or strong) to any eligible or unmarked argument that it c-commands and which occurs inside its locality domain until \textit{phi-donation} takes place; then go into
State\textsuperscript{I}: assigns the partitive/(accusative) to any eligible or unmarked argument that it c-commands and which occurs inside its locality domain until selected by certain heads, then go into
State\textsuperscript{0}: assigns no case.

The only noteworthy consequence of this formulation is, to repeat, that when it comes to state\textsuperscript{II} heads, both movement to Spec and overt phi-agreement suffice to dissipate a packet of energy from the head.

5.3 Partitive subjects
In Finnish, it is possible to use partitive case in connection with subjects.

31) Lapsia leikkii kadulla.
Children.par play.3sg at.street

One could claim that the verb is in state\textsuperscript{I}. Yet the partitive subject can be contrasted with a nominative plural subject, triggering agreement. If so, a possibility is that such verbs can enter the derivation either in state\textsuperscript{III} or state\textsuperscript{I}. This however leaves many key facts unexplained. First, the partitive indicates undetermined quantity (‘some children’) whereas the nominative plural indicates a definite quality (e.g. ‘those children’). The alteration in case correlates with an alteration in semantics. Some authors have proposed that the partitive case in such cases reflect a nominal element, or feature, inside the noun phrase that corresponds with definiteness. The problem with this view – and also a problem for the simple theory which assumes that verbs can enter the derivation in state\textsuperscript{III} or in state\textsuperscript{I} – is that the construction is not possible if the clause is transitive. Sentences such as (31) are always ungrammatical, under any interpretation.

32) *Lapsia syö leipää.
children.par eat bread.par

Intended: ‘Some children eat bread.’

In fact, the partitive-nominative alteration occurs only in intransitive clauses. Because transitive clauses are excluded, it is likely that the partitive subject in (30), unlike its nominative counterparty, is generated below v and is case-marked by the intransitive v. This explains why the construction is impossible in transitive clauses, where the direct object occurs below v.

33) leikkii v\textsuperscript{I} lapsia kadulla
play.3sg children.par at.street

|===>

‘Some children play at the street.’
34) lapset leikkivät III __ v kadulla
   children.nom.pl play.3pl at.street

The difference in meaning derives from the difference in the two structures: the v in (32) must differ from that in (33) in how they distribute thematic roles, for example. We have the same phenomenon in English *there*-clauses, which, too, have an indefinite interpretation but the argument is postverbal. This is most likely related to aspect.

Another fact is that, in Finnish, the same partitive alteration occurs in the case of plural direct objects, but there it is associated with aspectual completeness.

35) Pekka söi omenat
   Peka ate apple.pl.acc(t)
   'Pekka ate (some definite) apples.'

36) Pekka söi omenoita.
   Peka ate apple.pl.par
   'Pekka ate (some) apples.'

We can say that, in (34) the event was completed in the sense that all (definite) apples were eaten, whereas in (35) the event was not completed (necessarily) in that only some (indefinite amount of) apples were consumed. In the intransitive context, this aspectual dimension is interpreted similarly as to whether the event applies to some determined set of individuals (‘exhaustive/complete description’) or not (‘not necessarily exhaustive/complete description’). We are therefore dealing with a semantic feature that is part of the verbal structure of a clause, v in particular.