Unmarked case in Estonian nominals

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Abstract

This paper analyzes a case-marking alternation seen in the standard Estonian numeral-noun construction and pseudopartitive construction (e.g., *tükk leiba* 'a piece of bread'). In nominative and accusative contexts, the second noun (N2) is marked with partitive case while the first noun/numeral (N1) is marked with the case of the pseudopartitive. In all other case contexts both nouns must bear the case of the pseudopartitive. I propose that the partitive case on N2 is an unmarked case in the sense of Baker (2015) and Marantz (1991), among others. It is assigned to complements of nouns that do not already have a case value. This derives the case-marking alternation as a matter of timing: nominative and accusative are assigned too late to affect case-marking internal to the pseudopartitive. I show that pseudopartitives are not amenable to an analysis in terms of case-stacking as has been proposed for similar phenomena. The analysis presented here also extends to collocations of numerals and pseudopartitives in Estonian. I also show how the analysis can be extended to account for differences between Finnish and Estonian, and I suggest a typology of pseudopartitive-marking predicted by the analysis I propose. The analysis has implications for case realization and assignment as well as pseudopartitive and DP structure.

1 Introduction

Although the relationship between the syntax and morphology of case is often conceptualized as one-to-one, it is not always so direct in practice. This interaction has thus been a fruitful area of research in a variety of morphosyntactic domains (see, e.g., Baker (2015); Deal (2016); Keine (2010); Legate (2008, 2014); Pesetsky (2013); Richards (2012); Woolford (2008)). In this paper, I investigate a case-marking alternation in Estonian that likewise connects to the syntactic and morphological sides of case. I argue that, in the particular domain investigated in Estonian, the most successful analysis is one in which the morphological forms transparently reflect the case assigned in the syntax.

Numeral-noun constructions in Estonian exhibit a pattern of case-marking whereby the noun and numeral differ in case in nominative contexts (i.e., when the numeral bears nominative case) but match in case elsewhere.[1]

[1]Naturally occurring examples are indicated in the following ways. Examples marked with EKSS come from an online version of an Estonian language dictionary (*Eesti keele seletav sõnaraamat*), and the entry title is indicated.

(1) a. Mööda tee-d tuli-d kolm poissi.
along road-PAR come.PST-3PL three.NOM boy.PAR
'Along the road came three boys.' (Erelt et al., 1993:140)

b. ülejäänud kolme poisi ja kolme tüdruku seisund
remaining three.GEN boy.GEN and three.GEN girl.GEN status
'the status of the remaining three boys and three girls' (BALANCED)

Thus, in (1a), the numeral *kolm* 'three' is in its nominative form, and the noun *poissi* 'boy' is in partitive case. Using *poiss*, the nominative form of 'boy', would render (1a) ungrammatical. In (1b), both the numeral *kolme* and noun *poisi* bear genitive case, and partitive *poissi* is not possible. This alternation between case assignment and case agreement in numeral-noun constructions is not unique to Estonian. It is perhaps most familiar from Russian (Babby, 1987; Pesetsky, 2013), but it also exists in a similar guise in other Slavic languages (see, e.g., Rutkowski (2002) on Polish or McGarry (2015, 2016) on Belorussian and Ukrainian) and in some Finno-Ugric languages (see, e.g., Brattico (2008, 2010, 2011) on Finnish, Nelson and Toivonen (2000) on Inari Saami, or Feist (2010) on Skolt Saami). The pattern is more or less consistent across these languages: in nominative contexts, the noun bears a special marking, but in non-nominative contexts, the noun and numeral match in case.[2]

Estonian is unique among these languages in that it extends this alternation to a construction that Tamm (2011) calls the pseudopartitive, exemplified below.[3]

(2) hargitäis$_{N1}$ põhku$_{N2}$
pitchforkful.NOM straw.PAR
'a/the pitchforkful of straw' (EKSS, entry for *hargitäis*)

Some examples also come from corpora: BALANCED, a balanced literary corpus (15 million words) containing equal parts journalism, fiction, and academic writing, and PARLIAMENT, a corpus of parliamentary transcripts (13 million words) from 1995–2001. These three sources are all available online at `http://www.keeleveeb.ee/`. Unannotated examples are from my fieldwork with native Estonian speakers in the San Francisco Bay area and Tartu, Estonia.

Glossing abbreviations are as follows: 1 first person, 2 second person, 3 third person, ABE abessive, ACC accusative case, ADE adessive case, ALL allative case, COM comitative, DAT dative case, ELA elative case, ESS essive, GEN genitive case, ILL illative case, INE inessive case, INF infinitive (*da*-infinitive), NEG negation, NOM nominative case, PAR partitive case, PL plural number, PST past tense, PST.PCPL past participle, TER terminative, TRL translative case, SUP supine (*ma*-infinitive), SG singular number.

[2]The non-agreement pattern is also found in accusative contexts, but accusative and nominative numerals are indistinguishable in these languages. This fact is critical in many previous analyses of these phenomena, as we will see. It is also worth nothing that McGarry (2015, 2016) argues against a case-based analysis of the alternation in Belorussian and Ukrainian (and in Slavic more broadly), but I will not discuss her account here, as the facts she discusses do not hold in Estonian.

[3]Anticipating the analysis to come, let me state that there is reason to find the label *pseudopartitive* unsatisfying for these constructions, as the substance phrase can be quite large, and Selkirk's (1977) original usage of the term was for constructions like those in (2) and (3) where the phrase containing the second noun is quite small. However, as Tamm notes, "the generally assumed semantics that distinguished partitives from pseudopartitives on the basis of definiteness is not useful in mapping to distinct morphosyntactic forms in Estonian." Rather, she uses the term PSEUDOPARTITIVE as I do here and applies the term PARTITIVE to constructions like these where the phrase containing the second noun is marked with elative case instead of partitive case. See Tamm (2011) for more thorough discussion of the semantics of the constructions. See footnote 5 for reference to other partitive-like constructions in Estonian.

(3) parv$_{N1}$ pääsukesi$_{N2}$
flock.NOM swallow.PL.PAR
'a/the flock of swallows' (Nemvalts, 1996:69)

In its simplest form, Estonian pseudopartitives involve two nouns side-by-side. The first, which I call N1, typically serves a measurement or quantifying role: *hargitäis* 'pitchforkful' in (2) and *parv* 'flock' in (3). The second noun (N2) denotes the thing(s) being measured, and in these examples with nominative N1s, the N2 is partitive just as in numeral-noun constructions. This is true whether the noun is singular (*põhku* 'straw' in (2)) or plural (*pääsukesi* 'swallows' in (3)). As with numeral-noun constructions, when N1 bears a case other than nominative (or accusative, as we shall see), N2 must match the case of N1. This is shown in the examples below.

(4) Potitäie-st supi-st jätku-s kolme-ks päeva-ks.
potful-ELA soup-ELA continue-PST.3SG three-TRL day-TRL
'The pot of soup lasted three days.' (EKSS, entry for *potitäis*)

(5) Kui palju sa koti kartuli-te eest mak-si-d?
how much you.NOM bag.GEN potato-PL.GEN for pay-PST-2SG
'How much did you pay for the bag of potatoes?' (Erelt et al., 1993:145)

In (4), both *potitäiest* 'potful' and *supist* 'soup' are in elative case. In (5), both *koti* 'bag' and *kartulite* 'potatoes' are in genitive case. Partitive case on either singular 'soup' or plural 'potatoes' is ungrammatical— they must match the case of N1. The primary goal of this paper is to analyze this alternation between partitive case and case matching, which I call the N2 CASE ALTERNATION. While the analysis I propose accounts for the alternation in both pseudopartitives and numeral-noun constructions, I show that the alternation in pseudopartitives is uniquely revealing about possible analyses of the N2 Case Alternation, ruling out existing analyses of the phenomenon in numeral-noun constructions that hinge, at least in part, on the morphology of the cases at play. I argue in this paper that such analyses cannot account for the N2 Case Alternation in pseudopartitives, and I propose instead an account that has nothing to do with morphology *qua* word forms.

The core generalization underpinning the analysis is that case matching is observed for every case except nominative and accusative—the clausal structural cases. To formalize this distinction, I propose that the partitive case in these constructions is a kind of unmarked case used to mark nominal projections that do not already have a case value. The analysis is in the spirit of the approach to case attributed to Marantz (1991), although the precise formalization I propose is distinct from that of Baker (2015) and Marantz (1991) in one important way, which I make clear in section 3.5. I propose that this rule of unmarked case (i.e., partitive case) is invoked when the nominal extended projection is complete, in line with Baker's (2015) proposal that Marantzian case competition occurs within cyclic domains, i.e., phases. According to the analysis I propose here, partitive case is not assigned in the matching contexts, because the N2 receives a case value by case concord before partitive assignment can occur. However, nominative and accusative are assigned too late to affect the case-marking internal to the pseudopartitive, and this is why they are the only two case contexts where the N2 phrase is marked with partitive case.

The analysis I develop here provides support for a number of proposals concerning case assignment and its timing in the derivation. First, it supports the broad view that case is not simply assigned by heads to c-commanded maximal projections. Nominals can receive case in a variety of ways, dependent at times on the particular syntactic domain that contains them(Baker, 2015; Marantz, 1991). Further, it supports the view that case competition occurs at dedicated times in the derivation, e.g., phases (Baker, 2015; McFadden, 2004). Finally, the patterns described here show that the spread of case features throughout a constituent, commonly known as CASE CONCORD, must occur freely, i.e., when its environment is met. This is in line with the conclusions of Richards (2012), who has argued that case concord is not a purely morphological operation, but must occur in the syntax.[4]

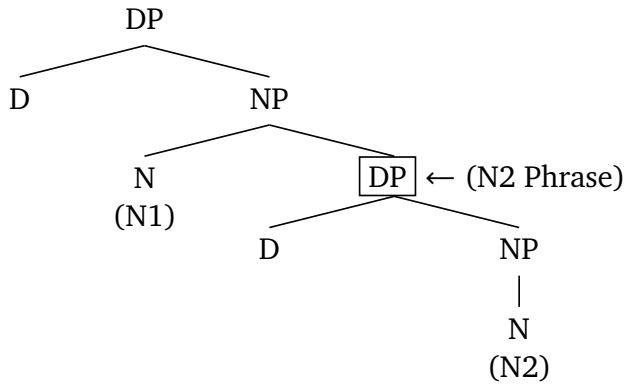
On an empirical level, the analysis presented here poses a challenge to analyses of similar phenomena which hold that multiple cases are assigned to nominal constituents in the syntax and the choice between them is resolved in the morphology (see, e.g., Babby (1980, 1987); Pesetsky (2013)). Estonian pseudopartitives serve to widen the empirical territory that such analyses are based upon, and as we will see, they are uniquely revealing about analytical possibilities.

The paper proceeds as follows. In the remainder of this section, I briefly outline my assumptions about the syntax of the Estonian pseudopartitives and the difference between pseudopartitives and numeral-noun constructions. In section 2, I discuss the N2 case alternation in more detail, showing that the N2 phrase is only marked with partitive case when the entire pseudopartitive is marked nominative or accusative. I develop an analysis of the alternation in section 3 based on when nominative and accusative enter the derivation. I argue against alternative analyses with connections to morphological case in section 4, and I extend my analysis both inside and outside Estonian in section 5. I conclude in section 6.

1.1 Estonian pseudopartitive syntax

The structure that I propose for the Estonian pseudopartitive is given in (6).

(6)



There are two proposals of note in this analysis. First, the N2 phrase may be at least as large as DP. In fact, the analysis I ultimately propose is compatible with N2 phrases of nearly any

[4]Richards (2012) only considers cases that are assigned in the syntax. He does argue against case concord occurring in the morphology, but only in a sense where that would require case concord to take place much later than the actual assignment of case. The analysis presented here essentially agrees with Richards on the timing of case concord, though our assumptions about when cases may be assigned are different.

size, but there is good reason to believe that N2 phrases can be quite large in Estonian. Since nothing about the analysis is dependent on this proposal, I do not discuss the arguments here, but see Tamm (2011) for discussion. The second important proposal is that N1 is a normal lexical noun rather than, e.g., a functional head. There are three reasons to believe this for Estonian pseudopartitives.[5]

First, the range of elements that can modify N2 in a pseudopartitive can also modify N1 in a pseudopartitive. For example, N2 can be modified by a demonstrative (7a), possessor (7b), or adjective (7c), and so can N1 (see (8)).

(7) a. terve **rida** ne-id loomi
whole row these-PL.PAR animal.PL.PAR
'an entire range of these animals' (PARLIAMENT)

b. **enamik** kooli-de direktore-id
majority school-PL.GEN director-PL.PAR
'a majority of school directors' (PARLIAMENT)

c. **parv** mängleva-id delfiine
flock playful-PL.PAR dolphins.PL.PAR
'a flock of playful dolphins' (EKSS, entry for *parv*)

(8) a. see **salk** poisse
this group boy.PL.PAR
'this group of boys'

b. konventsiooni **rida** artikle-id
convention-GEN row article-PL.PAR
'the convention's range of articles' (PARLIAMENT)

c. suur **peotäis** lilli
big.NOM handful.NOM flowers.PL.PAR
'a big handful of flowers'

If N1 is a normal noun, this is expected, but if N1 is not a normal noun, it must be stipulated. For example, Hankamer and Mikkelsen (2008) propose that adjectives can adjoin to either NP (i.e., N2P) or *n*P (i.e., N1P). For Estonian, we would need to make similar stipulations for demonstratives, possessors, and adjectives if we claimed that N1 was not a noun.

The second argument comes from number-marking. In Hankamer & Mikkelsen's discussion of Danish, they note that some N1s in Danish are inflectionally deficient in that they cannot show plural-marking. They take this as evidence in support of N1's functional nature (or, more conservatively, as a difference between N1 and normal nouns). In Estonian, N1 can be marked for plural, as in the examples in (9).[6]

[5]As an aside, I must note that there are other partitive-like constructions in Estonian. First, there are partitive-like constructions where N2 is marked with elative case, e.g., *tükk leiva-st* 'piece bread-ELA'. These are the most similar to pseudopartitives, and Tamm (2011) discusses the semantic differences between elative partitives and what she (we) calls pseudopartitives in some detail. In addition, there are partitive-like constructions where N2 is marked with comitative case, e.g., *korv õunte-ga* 'basket apples-COM' and constructions where the N2 is marked with genitive case and is prenominal, e.g., *riide meeter* 'cloth.GEN meter'. Since the focus of this paper is the case-marking alternation visible on N2, and case-marking of N2 in these constructions is invariant, I do not discuss them further.

[6]I have had some difficulty eliciting similar examples from speakers, but the ones given here have been accepted

(9) a. saali-täie-d koolilapsi
room-ful-PL.NOM schoolchildren.PL.PAR
'roomfuls of schoolchildren' (BALANCED)

b. Riiuli-te-l seis-i-d rea-s purgi-d maasikamoosi.
shelf-PL-ADE stand-PST-3PL row-INE jar-PL.NOM strawberry.jam.PAR
'On the shelves, jars of strawberry jam stood in rows.' (Erelt et al., 1993:144)

In (9), the N1s *saalitäied* 'roomfuls' and *purgid* 'jars' are both plural. Note as well that N2 is plural in (9a), but singular in (9b). Number-marking on N1 is independent of number-marking on N2. We could interpret this fact in one of two ways. If we treat number as a feature of nouns, then this would simply be another similarity between N1 and N2: both have number features. Alternatively, if we follow Ritter (1991) and much current work on nominal phrase syntax (as I do here), then number features are not generated on nouns, but on functional heads above nouns (Num^0). The presence of two independent number values is exactly what the lexical N1 hypothesis analysis predicts, but it must be stipulated under an analysis where N1 is not a normal noun.

Finally, if N1s are normal nouns, we expect to see them in isolation (i.e., without an N2 phrase). Briefly, I am not aware of any N1s that appear exclusively in the pseudopartitive construction. While I cannot provide an example of every possible N1 here, some illustrative examples are given below, with erstwhile N1s in bold.

(10) Naise-d tühjenda-si-d viimase-id **korvitäisi** kartulikuhja.
woman-PL.NOM empty-PST-3PL last-PL.PAR basketful.PL.PAR potato.pile.ILL
'The women emptied the last basketfuls onto the potato pile.' (EKSS, entry for *korvitäis*)

(11) Veeaur tihene-s **tilka-de-ks**.
water.vapor.NOM condense-PST.3SG drop-PL-TRL
'The water vapor condensed into drops.' (EKSS, entry for *tilk*)

(12) Sidu-s lille-d **kimpu**.
tie-PST.3SG flower-PL.NOM bunch.ILL
'S/he tied the flowers in(to) a bunch.' (EKSS, entry for *kimp*)

In these examples, while a likely N2 can be implied from context (e.g., *korvitäis kartuleid* 'basketful of potatoes' in (10)), the syntax of the pseudopartitive construction is not at play. As far as the syntax is concerned, the N1s are being used as simple nouns.

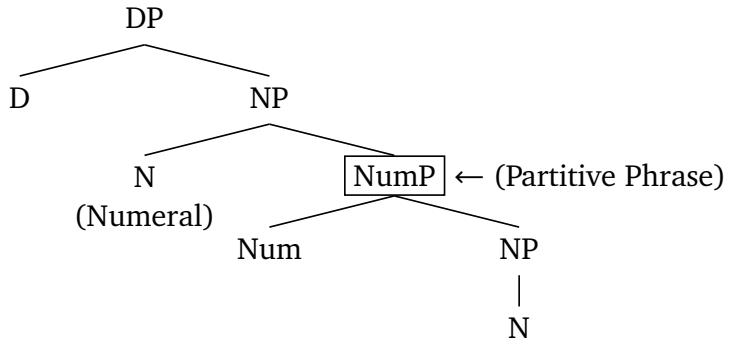
1.2 Pseudopartitives and numeral-noun constructions

The N2 Case Alternation also occurs in numeral-noun constructions in Estonian, and I assume a unified analysis of the alternation in numeral-noun constructions and pseudopartitives is

and judged to be normal. Erelt et al. (1993) also provide some examples, though they note that there is a tendency to avoid non-nominative plural measures and use alternative structures, such as compounds, e.g., *leivaviilud* 'bread slices' instead of *viilud leiba* 'slices of bread' or other kinds of modifiers, e.g., *ämbrid veega* 'buckets with water' instead of *ämbrid vett* 'buckets of water'. These are the kinds of examples that my speakers typically suggest as alternatives when presented with examples using plural measures. See also Hankamer and Mikkelsen (2008) for similar observations in Danish.

desirable. Having just proposed a structure for the pseudopartitive, I propose the following structure for numeral-noun constructions in Estonian.

(13)



In this structure, the numeral is a noun taking a NumP complement. This NumP is the partitive-marked constituent. The arguments for treating this as a NumP are relatively straightforward. It must be large enough to contain adjectives, nouns, and possessors, which are all possible in the complement of the numeral.

(14) a. kaks minu hea-d tuttava-t
two 1SG.GEN good-PAR acquaintance-PAR
'two good acquaintances of mine' (PARLIAMENT)

b. [Kaks Kärdi sviitri-t] on Heiko koo-t-ud.
two Kärt.GEN sweater-PAR be.3 Heiko.GEN knit-PASS-PST.PCPL
'Two of Kärt's sweaters were knit by Heiko.'

However, it must be small enough to exclude demonstratives, which are not possible in the complement of the numeral, as shown in (15).

(15) a. * kolm seda õpilas-t
three this-PAR student-PAR

b. * sada toda õpilas-t
hundred that-PAR student-PAR

Thus, neither the standard demonstrative *see* nor the southern/colloquial *too* can appear in in the numeral's complement. This supports an analysis whereby the complement in pseudopartitives is larger than the complement in numeral-noun constructions. I follow Danon (2012) and propose that it is NumP. However, I note that, even if we treated the complements of numeral-noun constructions and pseudopartitives as the same kind of constituent, the analysis I propose would still account for the observed patterns.[7]

[7]To make this point more concrete, I comment briefly on existing analyses of cardinal numerals. The literature on the syntax of numerals cross-linguistically nearly runs the gamut in terms of syntactic position and syntactic category. It has been proposed that numerals are heads in the nominal spine (Ionin and Matushansky, 2004, 2006; Nelson and Toivonen, 2000; Ritter, 1991), specifiers of a functional projection (Corver and Zwarts, 2006; Julien, 2005; Watanabe, 2006; Zabbal, 2005), and adjuncts in the nominal spine (Sigurðsson, 1993:188). It has also been proposed that numerals may occupy different syntactic positions cross-linguistically and with in the same language (Danon, 2012; Franks, 1994; Pereltsvaig, 2006). As for category, it has been proposed that numerals are nouns (Ionin and Matushansky, 2004, 2006), functional categories (e.g., $Card^0$, Num^0, or Q^0, Babby (1987); Franks (1994, 1995); Giusti and Leko (1995, 2005); Julien (2005); Nelson and Toivonen (2000); Ritter

In what follows, I focus largely on pseudopartitives, as they are revealing about possible analyses in ways that numeral-noun constructions are not. Specifically, pseudopartitives have partitive case-marking when N1 bears morphological genitive or morphological nominative, whereas numeral-noun constructions only exhibit partitive case-marking when the numeral bears morphological nominative.[8] In the next section, I explore the patterns of case-marking in pseudopartitives in more detail, showing that a third apparent case-marking pattern in pseudopartitives is illusory and that case-marking can be wholly determined by the syntactic case assigned to the pseudopartitive as reflected by the case-marking on N1. This requires slight modifications to the traditional case paradigm of Estonian, but those revisions are independently motivated.

2 Case-marking in Estonian pseudopartitives

One of the primary goals of this article is to analyze the N2 case alternation. Before that can be done, I must refine the characterization of the alternation, a task which I take up in this section. I ultimately show that the case-marking of the N2 phrase can be determined based only on the case-marking of N1, which reflects the case value of the entire pseudopartitive construction itself. This descriptive generalization is stated in (16).

(16) **N1 Case Generalization**: In the Estonian pseudopartitive, the case value of the N2 phrase is determined by the case value of N1.

A full table of pseudopartitive constructions for the traditional case system of Estonian is given in Table 1 below. Based on Table 1, it is evident that some cases clearly follow the N1 Case Generalization, while other cases do not. Specifically, if N1 is any case between illative and translative, the N2 phrase matches the case of N1. I call this case-marking pattern the MATCHING PATTERN. If N1 is nominative, the N2 phrase is always partitive. I call this case-marking pattern the PARTITIVE PATTERN. For these two groups, knowing the case of N1 is enough to determine the case of N2.

However, if N1 bears morphological genitive case, we cannot predict the case-marking of the N2 phrase out of context. Three different patterns are superficially possible, as seen in (17).

(17) Three different case-marking patterns with morphologically genitive N1s:

(1991); Rutkowski (2001); Sigurðsson (1993); Watanabe (2006)), and that they are of various categories (Corver and Zwarts, 2006; Danon, 2012; Zabbal, 2005). I do not attempt to argue in favor of a particular analysis of numerals here— there are multiple ways that we could set the assumptions about numerals that would still be fully compatible with the analysis I ultimately propose.

[8] This is a bit of an oversimplification, given that there are also numeral-noun constructions where the numeral is plural, e.g., *kolme-d kääri-d* 'three-PL.NOM scissor-PL.NOM', and in these constructions, partitive case is never assigned. These constructions can be incorporated into the analysis I propose as follows. First, I follow Danon (2012), who proposes that numeral-noun constructions can have varying syntactic structures, not just across languages but even within the same language. For the same type of construction in Finnish, he proposes that the plural numerals (and the numeral 'one') are adjoined modifiers rather than heads in the nominal spine. If we adopt that assumption, then the requisite configuration for partitive case is not met, and we expect instead full case concord regardless of syntactic context.

N1 Case	*Singular*	*Pattern*	*Translation*
NOMINATIVE	tükk leiba	PARTITIVE	'a piece of bread'
GENITIVE	tüki leiba /	PARTITIVE	'of a piece of bread'
	tüki leiva	MATCHING	'of a piece of bread'
PARTITIVE	tükki leiba	(*can't tell*)	'a piece of bread'
ILLATIVE	tüki-sse leiva-sse	MATCHING	'into a piece of bread'
INESSIVE	tüki-s leiva-s	MATCHING	'in a piece of bread'
ELATIVE	tüki-st leiva-st	MATCHING	'out of a piece of bread'
ALLATIVE	tüki-le leiva-le	MATCHING	'onto a piece of bread'
ADESSIVE	tüki-l leiva-l	MATCHING	'on a piece of bread'
ABLATIVE	tüki-lt leiva-lt	MATCHING	'off of a piece of bread'
TRANSLATIVE	tüki-ks leiva-ks	MATCHING	'for/into a piece of bread'
TERMINATIVE	tüki leiva-ni	SUSPENDED	'until a piece of bread'
ESSIVE	tüki leiva-na	SUSPENDED	'as a piece of bread'
ABESSIVE	tüki leiva-ta	SUSPENDED	'without a piece of bread'
COMITATIVE	tüki leiva-ga	SUSPENDED	'with a piece of bread'

Table 1: Case patterns for the pseudopartitive *tükk leiba* 'piece of bread'

a. tüki leiba
piece.GEN bread.PAR
'a piece of bread' (partitive pattern)

b. tüki leiva
piece.GEN bread.GEN
'a piece of bread' (matching pattern)

c. tüki leiva-ga
piece.GEN bread-COM
'with a piece of bread' (suspended pattern)

In (17a), the N2 phrase is in partitive case, so the pseudopartitive exhibits the partitive pattern. In (17b), the N2 phrase is in genitive case (like N1), so the pseudopartitive exhibits the matching pattern. In (17c), the N2 phrase bears the comitative case. I call this pattern the SUSPENDED PATTERN, as the case marker for the entire pseudopartitive appears to be suspended until N2. In all three examples, N1 appears to bear the same case, the case traditionally identified as genitive. Because of the behavior of morphological genitive case, the N1 Case Generalization is not transparently true. In order to see that it is indeed true, we must take a moment to unpack some details about the case system of Estonian.

The suspended pattern exhibited by the terminative, essive, abessive, and comitative is, in fact, an unremarkable instance of the general behavior of those cases. Unlike the rest of Estonian's cases, these cases do not show case concord. Instead, the rightmost constituent bears the case-marker, and the other elements surface in genitive case. This is exemplified for essive in (18) and comitative in (19).

(18) noore(*-na) ajakirjaniku-na
young.GEN journalist-ESS

'as a young journalist' (Nevis, 1986:81)

(19) nende(*-ga) eelmis-te(*-ga) punkti-de-ga
these.PL.GEN previous-PL.GEN point-PL-COM
'with these previous points' (PARLIAMENT)

For example, in (19), the comitative marker *-ga* appears only on the noun *punktidega* 'points'. Adding *-ga* to either or both of the previous elements renders the utterance ungrammatical. On the basis of the facts above as well as the behavior of these cases in coordinations, Nevis (1986) proposes that the terminative, essive, abessive, and comitative are actually clitic postpositions.[9] Like most postpositions in Estonian (see Ehala (1994)), these clitic postpositions assign genitive case to their complements. This accounts for the genitive marking on non-final members of nominals in these cases. The postposition analysis also does not run afoul of the nouns bearing the case affixes, as the stem the affixes attach to is genitive as well—this is true for all cases other than nominative and partitive (see, e.g., Blevins (2008)). Thus, I follow Nevis (1984) in treating the terminative, essive, abessive, and comitative as P^0-heads with genitive complements.[10] Though I will not discuss them further, everything I propose for genitive case extends to the cases just referenced. With this independently-motivated analysis, the suspended pattern can be characterized as a matching pattern in disguise.

The remaining wrinkle—that both the partitive and matching patterns are possible with a morphologically genitive N1—is actually a terminological issue: genitive N1s yielding the partitive pattern are arguably accusatives. Accusative case in the Finnic languages is morphologically very weak, perhaps best-known in the generative tradition from Finnish (Kiparsky, 2001). For common nouns, what I call accusative is syncretic with genitive in the singular and nominative in the plural. This is exemplified for Estonian in (20).

(20) "Accusative" objects:

a. Heiko luge-s raamatu läbi.
Heiko.NOM read-PST.3SG book.ACC(GEN) through
'Heiko read a/the book (and he finished it).'

b. Heiko luge-s raamatu-d läbi.
Heiko.NOM read-PST.3SG book-PL.ACC(NOM) through
'Heiko read some/the books (and finished them).'

In Finnish, the only words with morphologically unique accusatives are pronouns. In Estonian, there are no words with unique accusative forms. For this reason, traditional grammars (i.e., Erelt et al. (1993, 2000)) do not assume the existence of an accusative case in Estonian, though debate on the issue persists, with some research in favor of the adoption of accusative case (Caha, 2009; Hiietam, 2005; Tamm, 2007) and some research against it (Miljan, 2008; Miljan and Cann, 2013).

Essentially, the question is whether all instances of morphological genitive are morphosyntactically identical, and the behavior of pseudopartitives suggests that they are not. It is only

[9] In coordinations, these cases can be marked on both members of the coordination or only on the rightmost, with the other members bearing genitive case instead. Under the analysis adopted here, these patterns arise due to coordination of PPs on the one hand and coordination of DPs with a single P^0 on the other. See Norris (2015) for more explicit discussion and argumentation.

[10] In the terms of the analysis developed below, they are P^0-heads that select KPs whose K^0 is genitive.

pseudopartitives in object position (i.e., accusatives) that show the partitive pattern, as in (21). Other genitives, exemplified here by possessors (22) and arguments of adpositions (23), show the matching pattern.

(21) Pseudopartitives as objects show the partitive pattern:

a. Aja-s pajatäie vett / *vee kee-ma.
drive-PST.3SG potful.GEN water.PAR / water.GEN boil-SUP
'S/he brought a/the pot of water to boil.' (EKSS, entry for *pajatäis*)

b. Tõi-n koti kartule-id / *kartuli-te.
bring.PST-1SG bag.GEN potato-PL.PAR / potato-PL.GEN
'I brought the bag of potatoes.' (Erelt et al., 1993:145)

(22) Pseudopartitives as possessors show the matching pattern:

a. Kolmandiku tordi / *torti hind oli kaks rubla.
third.GEN tart.GEN / tart.PAR price.NOM be.PST.3SG two.NOM ruble.PAR
'The price of a third of a tart was two rubles.' (Erelt et al., 1993:145)

b. enamiku inimes-te / *inimesi soov
majority.GEN people-PL.GEN / people.PL.PAR wish.NOM
'[the majority of people]'s wish' (Erelt et al., 1993:142)

(23) Pseudopartitives as objects of adpositions show the matching pattern:

a. Putukas roomas ümber klaasi vee / *vett.
bug.NOM crawl-PST.3SG around glass.GEN water.GEN / water.PAR
'A/the bug crawled around a/the glass of water.'

b. Kui palju sa koti kartuli-te / *kartule-id eest mak-si-d?
how much you.NOM bag.GEN potato-PL.GEN / potato-PL.PAR for pay-PST-2SG
'How much did you pay for the bag of potatoes?' (Erelt et al., 1993:145)

The examples in (21b) and (23b) are particularly illustrative, as they show pseudopartitives with the same lexical items with two different patterns: partitive pattern *koti kartuleid* in (21b) and matching pattern *koti kartulite* in (23b). Thus, while there are no single words in Estonian that have a unique accusative form, pseudopartitives do exhibit an accusative form: a genitive N1 followed by a partitive N2. Erelt et al. (1993) note this behavior of pseudopartitives (p. 144), but its relevance for the accusative hypothesis is not discussed there or in any other literature, so far as I know. I henceforth adopt the label of accusative for objects. As we will see shortly, this enables a straightforward statement of the distribution of case-marking patterns in pseudopartitives.[11]

With these proposals, the examples presented in (17) can be more properly glossed as in (24).

[11] An anonymous reviewer proposes the following alternative for the matching pattern cases. They observe that each of the nouns in the pseudopartitive can appear independently as possessors or as objects of adpositions, and in those cases, they would be marked genitive case. Thus, the case matching here can be viewed as marking each element as the object of an adposition or a possessor independently rather than marking the entire pseudopartitive constituent. However, the same logic should extend to pseudopartitives in object position, resulting in genitive case on both N1 and N2, i.e., case matching, but this is not what we see. Thus, I do not pursue this alternative here.

(24) Three different case-marking patterns with morphologically genitive N1s:

a. tüki leiba
piece.ACC bread.PAR
'a piece of bread' (partitive pattern)

b. tüki leiva
piece.GEN bread.GEN
'a piece of bread' (matching pattern)

c. tüki leiva-ga
piece.GEN bread.GEN-COM
'with a piece of bread' (matching pattern)

This leads to the N1 case generalization: nominative and accusative N1s yield the partitive pattern, and all other cases yield the matching pattern. The revised distribution of case-marking patterns in Estonian pseudopartitives is given in Table 2. Most cases in Estonian show the

PARTITIVE PATTERN GROUP

Case		*Pattern*
NOM	tükk leiba	PARTITIVE
ACC	tüki leiba	PARTITIVE
PAR	tükki leiba	PARTITIVE

MATCHING PATTERN GROUP

Case		*Pattern*
GEN	tüki leiva	MATCHING
(TER	tüki leiva-ni	MATCHING)
(ESS	tüki leiva-na	MATCHING)
(ABE	tüki leiva-ta	MATCHING)
(COM	tüki leiva-ga	MATCHING)
PAR	tükki leiba	MATCHING
ILL	tüki-sse leiva-sse	MATCHING
INE	tüki-s leiva-s	MATCHING
ELA	tüki-st leiva-st	MATCHING
ALL	tüki-le leiva-le	MATCHING
ADE	tüki-l leiva-l	MATCHING
ABL	tüki-lt leiva-lt	MATCHING
TRL	tüki-ks leiva-ks	MATCHING

Table 2: Case patterns in Estonian pseudopartitives, final version

matching pattern. This includes the terminative, essive, abessive, and comitative, which I have grouped with the genitive in Table 2 because my treatment of genitive case should be assumed to extend to them. There are only two cases that show the partitive pattern: nominative and accusative. This allows a clean statement of the N1 Case Generalization, which is repeated below.

(16) **N1 Case Generalization**: the case value of the N2 phrase is determined by the case value of N1 in the following ways.

a. If N1 is nominative or accusative, the pseudopartitive will show the partitive pattern.

b. Otherwise, it will show the matching pattern.

This distribution of patterns shows a pattern itself. On the one hand, there is a collection of cases that are by and large non-structural, i.e., lexical, inherent, or semantic. These cases show the matching pattern. On the other hand, there is nominative and accusative, the clausal structural cases, which show the partitive pattern. This is reminiscent of a familiar state of affairs, whereby structural and inherent cases interact differently with additional case values, with inherent cases being preserved more often than structural cases (Babby, 1980; Moravcsik, 1995; Richards, 2012). On the basis of such facts, it has been claimed that structural cases are weaker than non-structural cases in some sense. However, this raises a very important question: why should it be the case that structural cases are weaker than inherent cases? What is it about the morphosyntax of these cases that leads to these kinds of hierarchical effects?

In the next section, I propose an analysis of the N2 case alternation that derives the structural versus inherent divide as a matter of timing. What is crucial about nominative and accusative in Estonian is that they are associated only with the clausal domain. They are never assigned by adpositions, and they cannot be introduced as modifiers of nouns or adjectives.[12] In short, nominative and accusative have nothing to do with the internal syntax of nominal phrases. I thus claim that nominative and accusative are only assigned after the nominal extended projection (e.g., the pseudopartitive) is complete, and thus, they are assigned too late to affect any DP-internal case-assignment processes.

3 Analysis: Nominative and accusative are assigned late

In the last section, I showed that the only cases yielding the partitive pattern are nominative and accusative. In this section, I propose that this is because nominative and accusative come into play later than the other cases. In brief, the core of the proposal is that the partitive case in pseudopartitive is an UNMARKED CASE inside of DPs (or more correctly, KPs).

(25) **Unmarked Partitive Hypothesis:** Partitive case in Estonian nominals is an unmarked case, assigned to nominal complements (that is, complements of nouns) that do not already have a case value.

This notion of unmarked case is couched within the version of dependent case theory proposed by Marantz (1991). If we adopt the proposal in (25), as well as particular proposals concerning the syntax of case and case concord in Estonian, the distribution of the partitive pattern and the matching pattern falls out as a matter of timing. I begin with a summary of the system proposed by Marantz.

[12] By *modifiers*, I mean adjuncts whose case is independent of the nominal spine they attach to. Of course, it is possible for modifying adjectives, demonstratives, etc. to bear nominative case when they modify a nominative noun.

3.1 Partitive as an Unmarked Case

One of the core insights of Marantz's proposal—as well as research that preceded and followed it (see, e.g., Baker (2014, 2015); Baker and Vinokurova (2010); Bittner and Hale (1996); Bobaljik (2008); Levin and Preminger (2015); Poole (2015); Preminger (2014); Tucker (2013); Yip et al. (1987))—is that the means by which a nominal can acquire a case value are more varied than we originally thought. The kinds of case that Marantz proposes are given in (26). Their descriptions have been slightly modernized.

(26) Mechanisms of case assignment (Marantz 1991, *et seq*):

a. **lexical/inherent case**: assigned by the selecting V^0 or P^0.

b. **dependent case**: assigned to one of two caseless DPs in an asymmetric c-command relationship.

- C-commanded DP: accusative
- C-commanding DP: ergative

c. **unmarked case**: assigned to otherwise caseless DPs; may be sensitive to syntactic environment (e.g., an unmarked case for caseless nominals inside DPs).

d. **default case**: case assigned to any DP that is not in a position to receive case (Schütze, 2001).

Though Marantz proposes the four different kinds given above, most of his discussion concerns the behavior of dependent case, and much of the research in this framework has followed suit. As a result, there has not been much research exploring rules or mechanisms of unmarked case assignment.[13] In fact, unmarked case and default case are sometimes collapsed (Bobaljik, 2008; Levin and Preminger, 2015; Preminger, 2014). One of the goals of this paper is to take very seriously the notion of unmarked case as separate from default case.

The reason for this is that Estonian's default case in Schütze's (2001) terms is nominative rather than partitive. Schütze (2001) provides a number of environments where he argues default case is present, but I believe only one of them is revealing for Estonian: hanging topics. Hanging topics in Estonian must be nominative, as the following examples show.

(27) a. Naabri lille-d, ne-id ei tohi puutu-da.
neighbor.GEN flower-PL.NOM they-PL.PAR NEG allow mess.with-INF
'The neighbor's flowers, you can't mess with them.'

b. * Naabri lilli, ne-id ei tohi puutu-da.
neighbor.GEN flower-PL.PAR they-PL.PAR NEG allow mess.with-INF

(28) a. Nüüd küsimuse-d, ne-id on viis.
now question-PL.NOM they-PL.PAR be.3 five.NOM
'Now (as for) the questions, there are five of them.' (PARLIAMENT)

b. * Nüüd küsimusi, ne-id on viis.
now question.PL.PAR they-PL.PAR be.3 five.NOM

[13] Baker (2015) is an important exception. I discuss the differences between Baker's proposal and mine in section 3.5.

In (27a) and (28a), the hanging topics *naabri lilled* 'neighbor's flowers' and *küsimused* 'questions' bear nominative case, while their correlates—*neid* 'they.PL.PAR' in both sentences—bear the case that would be assigned in the clause. It is not possible for them to bear partitive case, as the (b) examples show. Hanging topic constructions have not previously been investigated in Estonian, and doing so would take us too far afield here. Nevertheless, the examples in (27) and (28) suggest that an analysis of partitive case as a general default is not the right approach.

Although I will adopt certain assumptions about inherent cases in Estonian as well, I will focus primarily on the nature of unmarked case in what follows. The initial formalization for unmarked case in Estonian nominals is presented below.

(29) Unmarked Partitive (to be revised): Assign partitive case to complements of N^0 that do not already have a case value.

Those familiar with work in dependent case theory (especially Baker (2015), the work that takes unmarked case most seriously) will note that the precise formalization of this unmarked case is different from what is traditionally assumed. I set aside the discussion of this until section 3.5, but briefly, the existence of the case alternation in both pseudopartitives and numeral-noun constructions necessitates something slightly different from what has previously been proposed. There is more to say about when specifically this rule is invoked, but it is at least clear at the moment that the N2 phrase is a potential candidate for partitive case given that it is the complement of a noun. I turn now to other proposals about case in Estonian that interact with this version of unmarked partitive case to yield the N2 case alternation.[14]

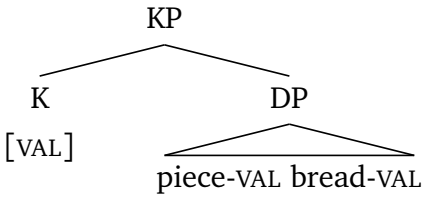
3.2 Matching cases as KPs

The cases that yield the partitive pattern—nominative and accusative—are the two cases in Estonian that are only assigned based on a DP's position in the clausal spine. All other cases in the language yield the matching pattern. To capture the difference between these two sets of cases, I follow Bittner and Hale's (1996) proposal that case features are located in a functional projection KP, with the head of KP taking a DP complement. In Bittner & Hale's system, K^0s associated with lexical/inherent cases are merged with a case value (Bittner and Hale, 1996:6). There are also K^0s that are merged without a value; these K^0s are ultimately assigned accusative case in nominative/accusative languages in Bittner & Hale's approach. I will simplify slightly here and treat both nominative and accusative as involving an unvalued K^0, but I note that adopting Bittner & Hale's formalization as is would be fully compatible with the other components of my analysis.

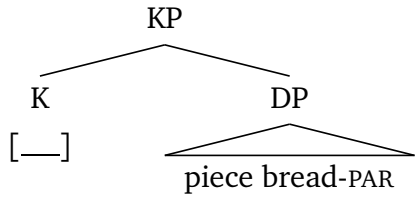
The upshot of adopting this characterization is that the case pattern a pseudopartitive exhibits can be determined entirely on the basis of the head of KP. If the K^0 is merged with a value, then the pseudopartitive will show the matching pattern (see (30)). When it is merged without a value, the pseudopartitive will show the partitive pattern (see (31)).

[14]Those familiar with Finnic languages may be curious about the relationship between the partitive case in nominals and partitive case in the language more broadly. For example, a reviewer asks whether the unmarked partitive that I propose could be extended to cases of partitive case assignment in VPs that is often given a semantic explanation. These facts are most familiar from Finnish— see, e.g., Kiparsky (1998, 2001). While I do not have space to discuss this possibility in detail, I address it briefly in the conclusion (section 6). I am grateful to the reviewer for suggesting this comparison.

(30) Valued K^0: Matching Pattern



(31) Unvalued K^0: Partitive pattern



In other words, the particular case pattern that a pseudopartitive exhibits will be determined at the moment the entire pseudopartitive is constructed. I thus propose that this is also the moment when the conditions for Unmarked Partitive assignment are checked. This leads us to the final characterization of the Unmarked Partitive case in Estonian, given below in (32).

(32) Unmarked Partitive (final version): Assign partitive case to complements of N^0 that do not already have a case value when the pseudopartitive extended projection is complete.

In other words, it is only when the entire KP is built, as in (30)-(31), that the conditions for unmarked case can be checked. This essentially follows the proposals of Baker (2015) that (i) phases are the domains for Marantzian case assignment, and (ii) different case domains may have cases particular to them, including clausal and nominal domains.

3.3 Case concord

At this point, the framework for the analysis is set in place. The final piece is case concord, whereby case is marked on multiple elements inside a single DP rather than once. We have seen examples of case concord throughout thus far, but for clarity, here are two more examples.

(33) kõigi-s nei-s raske-te-s küsimus-te-s
all.PL-INE these.PL-INE hard-PL-INE question-PL-INE
'in all these hard questions' (BALANCED)

(34) selle-ks vahepealse-ks perioodi-ks
this-TRL in.betweeen-TRL period-TRL
'for this interim period.' (PARLIAMENT)

In (33), every element reflects plural number and inessive case, and in (34), every element reflects singular number and translative case. Though there are particular lexical items which do not show concord, it is clear that the general pattern in Estonian is for members of the DP to show concord rather than not. To formalize case concord, I adopt the fairly standard view from the literature that case is a feature of maximal nominal projections, and that case concord is the downward spread of case feature values to the elements contained in those maximal projections (see, e.g., Babby (1987); Chomsky (1981, 1986); Delsing (1993); Matushansky (2008)). A formalization is presented in (35), and a schematic structure is presented in (36).[15]

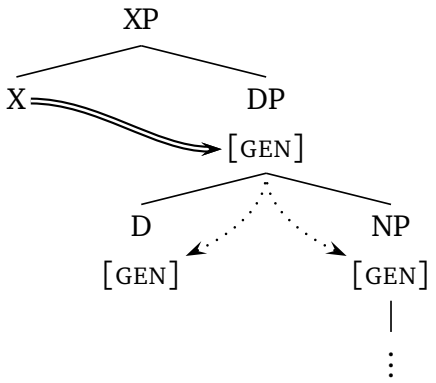
[15]There are languages where case concord may even spread case features to elements that are already case-marked (see, e.g., Plank (1995); Richards (2012)). This is the reason behind the parentheses surrounding "but X does not" in (35). Estonian does not transparently allow this in the way that Lardil does (that is to say, it is not plainly visible in the language's morphology), and as will become clear, I have found no other reason to assume

(35) Case Concord:

a. Let X and Y be two nodes in a single extended projection, Y immediately dominating X.

b. If Y has a valued case feature [CASE:α] (but X does not), then copy Y's case feature to X.

(36)



In (36), X^0 assigns genitive case to DP, and then DP passes that value to its daughters, D^0 and NP, who then pass it to their daughters, and so on.

There are two comments I must make about this understanding of case concord before continuing. First, I assume this feature-spreading takes place in the syntax, and furthermore, that it takes place whenever its environment is met. Second, note that the formalism only transfers case features if the lower element does not have a case feature value of its own. This prevents case-stacking and case-overwriting in Estonian. I have found no evidence that overt case-stacking occurs in Estonian, and as for case-overwriting (which may or may not be mediated through syntactic case-stacking), it does not illuminate the patterns of case-marking seen here, so I propose that it does not occur in Estonian. I discuss this in more detail in section 4.

To show how the unmarked partitive case, KP, and case concord interact, I turn now to example derivations of the N2 case alternation.

3.4 Deriving the N2 case alternation

When a head like $K^0_{[\text{ADE}]}$ is merged, its case value spreads downward via case concord. Because the N2 phrase has no case value of its own, adessive case spreads all the way down to N2 itself, as in (38).[16]

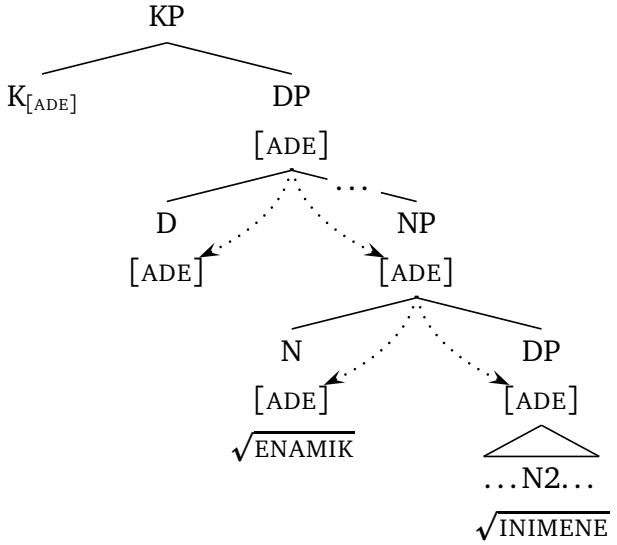
it occurs. Thus, for Estonian, I assume that case features do not spread to elements that are already case-marked.

Relatedly, a reviewer questions whether the rule in (35) is intended to account for languages where predicate adjectives agree in case, suggesting it is not sufficiently general to account for such cases. Though I had DP-internal case concord in mind when crafting the formalism as I did, some of the work it was based on addresses predication. See, e.g., Matushansky (2008) for discussion and further references. One possible modification that could allow the rule as written to extend to predicate adjectives agreeing in case is removing the requirement that case concord apply within a single extended projection, although I do not explore such a modification here.

[16]Note that the N2 phrase does not have a K^0 head of its own, and this proposal is necessary to be able to capture the similarity between pseudopartitives and numeral-noun constructions. The guiding intuition is that the "N2 phrase" in these constructions does not form its own extended projection, at least as far as case is concerned. The

(37) **Enamiku-l inimes-te-l** pole selle-ks raha.
majority-ADE person-PL-ADE NEG.be this-TRL money.PAR
'A majority of people don't have money for that.' (PARLIAMENT)

(38)



This yields full case matching between N1 and the N2 phrase. Under this analysis, the matching pattern is ordinary case concord, derived from the same mechanism as case concord between, e.g., adjectives and nouns. Unmarked partitive case is not invoked, because there are no caseless complements of N^0.[17]

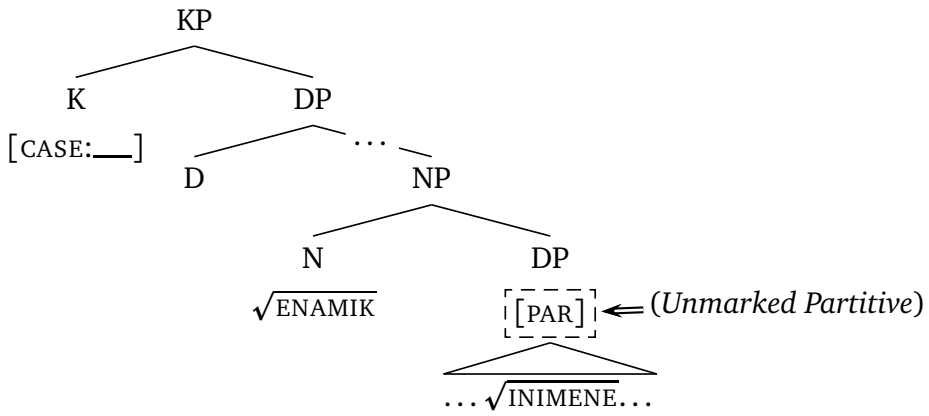
If the K^0 has no case value, the N2 phrase remains caseless (just like the rest of the KP). This means there is a caseless complement of N^0, so unmarked partitive case is assigned to the N2 phrase, as in (40).

(39) enamiku inimesi
majority.ACC person.PL.PAR
'a majority of people'

proposal also allows for an explanation of the difference in case-marking between Estonian pseudopartitives and Finnish pseudopartitives, which differ in their case-marking properties. See section 5.2 for further discussion.

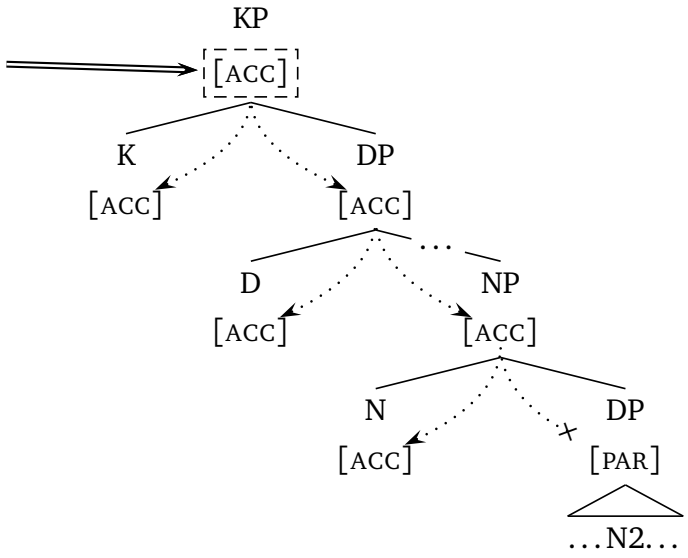
[17] A reviewer notes that treating the matching pattern as an extension of ordinary case concord is a bit counter-intuitive given that case concord between a noun and its complement is not particularly common— certainly not as common as case concord between a noun and a modifying adjective or determiner. I agree that this pattern is exceptional. However, from a formal perspective, the exceptionality does not need to be pinned on case concord, as the reviewer notes. In my analysis, the exceptionality is tied to the presence of complements to N^0 that do not have case-marking in Estonian. When that is combined with a rule of case concord like the one I proposed, the result is the pattern seen in Estonian.

(40)



When the pseudopartitive in (40) is merged with the clausal structure, it is eventually assigned accusative case. How exactly accusative is assigned in Estonian is immaterial to the specifics of my analysis, so I will not commit to any particular account. This case value spreads as far as the N2 phrase by case concord, but I assume that the case value spreads no further, i.e., that accusative case spreads only as far as N1, and there is no case overwriting or stacking in Estonian.

(41)



This is not a necessary assumption, but I adopt it here for the sake of simplicity, as this analysis can account for the matching pattern without appealing to a mechanism of case overwriting or stacking.[18] The end result is that the N2 phrase is marked with partitive case, while the N1 and every structurally higher element in the pseudopartitive is in accusative case (or nominative in the proper context).

[18]My analysis would work just the same if we allowed accusative to spread all the way down to the N2 phrase, stacking outside the previously assigned partitive. We could then follow Baker and Vinokurova (2010) and assume that the innermost case value is always realized; this would account for the partitive pattern just as well. However, case stacking would serve no purpose in such a system, so I make the stronger claim and propose that it is not possible in Estonian.

3.5 A comparison to Baker (2015)

In a recent book, Baker (2015) undertakes a substantial and deep exploration and development of Marantz's (1991) dependent case theory, extending and concretizing aspects of the theory in numerous ways. Among those ways is an exploration of case within the nominal domain, including an exploration of unmarked case inside nominals. As this is one of the most in-depth considerations of unmarked case in nominals, I will take a brief moment to consider how my proposal differs from the conditions outlined by Baker (2015). I emphasize that I am not arguing against Baker's account in general. On the contrary, many of his proposals transfer nicely.[19] However, I do argue that there is more variety in DP-internal case assignment than his exploration discusses.

3.5.1 On the nature of genitive case (in Estonian)

In his exploration of case in the nominal domain, Baker (2015) develops an analysis of genitive case as an unmarked case in Marantz's (1991) system. Concretely, the conditions for genitive case assignment are stated in (42).

(42) If NP[20] is not otherwise case-marked when DP/NP is spelled out, assign it *genitive*. (Baker, 2015:166)

In his analysis of Japanese and Tamil, Baker rejects the notion that genitive is a dependent case, though that option may be available in other languages (Mark Baker, p.c.). He then considers two remaining possibilities for genitives in these languages, and thus, cross-linguistically: (i) a case assigned by a functional head or (ii) the unmarked case as formalized in (42). Options (i) and (ii) might be distinguished by, e.g., whether a language allows multiple genitives. Following the argumentation of Baker and Vinokurova (2010) (see also Baker (2015:164–6)), a language allowing multiple genitives would have a genitive case of type (ii), and a language that prohibits multiple genitives would have a genitive case of type (i).

My analysis leads to a conclusion that Baker (2015) does not consider: genitive case (in Estonian) must be an inherent case. This is because it exhibits the matching pattern just the same as the other clearer examples of inherent cases. We have seen that the choice between the matching and partitive pattern is determined by the features of K^0s: a valued K^0 yields the matching pattern, and otherwise we see the partitive pattern. Genitive thus must enter the derivation as a valued K^0, and thus, following Bittner and Hale (1996), it must be an inherent case.

It must be inherent case and not lexical case (see Woolford 2006), as it is clearly not associated with particular lexical items. Inherent case, according to Woolford, is associated with

[19] In particular, Baker's proposals regarding the phase-based timing of case assignment is essentially what I propose here. Baker's distinction between soft and hard phase heads is compatible with my proposal so long as K^0 is a soft phase head. In the case of nominative/accusative pseudopartitives, K^0 is not valued when it is merged. If K^0's complement is spelled out at that moment, it would leave N1 and its modifiers without a case value, which they need in order to be properly spelled out. If K^0 is a soft phase head, then their morphological form is not fixed at that time, so they can still be marked, e.g., with accusative case. The essential issue here is how case concord interacts with Baker's proposals. Baker does not discuss this in detail, focusing instead on how case is assigned to maximal phrases. However, the facts discussed here can be incorporated as long as K^0 is a soft phase head.

[20] Baker later revises case assignment rules to apply to maximal nominal projections with unique indices (pp. 174–5), so this instance of NP should be taken to mean maximal nominal projection.

particular theta-roles, not particular lexical items. This does not initially make genitive seem like a good candidate for inherent case given that it can be associated with many theta-roles, especially when we consider the variety of theta-roles that "possessors" can bear.

However, Woolford expands on that succinct definition of inherent case to note that there is not a one-to-one correspondence between inherent case and theta-role. She argues for an inherent case treatment of ergative, but notes that "we do not want to interpret the fact that ergative Case can mark external arguments that are not true agents as evidence that ergative fails the diagnostic of theta-relatedness" (pp. 124–5). In that sense, inherent case ends up as essentially a case that is associated with a particular syntactic position, which is in turn associated with a prototypical theta-role. I believe it is reasonable to think of genitive case in Estonian nominals in this way—associated with a particular syntactic position that presumably has a prototypical theta-role.[21]

If genitive case was instead an unmarked case, it would not be associated with a valued K^0. We then lose the generalization that the matching pattern is connected to valued K^0s. More importantly, it is not clear what the difference between genitive and nominative/accusative would be in terms of timing. In other words, if both genitive DPs and accusative DPs are identical at the moment they are merged with the clausal spine, I can see no straightforward way to integrate partitive case such that the genitive DP shows the matching pattern and the accusative DP shows the partitive pattern. This same argument applies to treating genitive in Estonian as a dependent case.

I emphasize again that I want to avoid a stipulated case hierarchy—that is, encoding a brute force statement like "genitive is stronger than partitive, accusative is weaker" in the grammar. This generates the proper forms, but it does not connect the generalization that clausal structural cases are weaker to any particular property of those cases. Though previous work has attempted to tie this to the morphemes associated with these cases, such an approach faces serious challenges in Estonian, as I discuss in section 4.

3.5.2 On the targets for case assignment

Another important difference between Baker's (2015) proposals and mine concerns the target of rules of unmarked case assignment. Baker's rule in (42) targets a nominal constituent of a

[21]The choice of treating genitive as an inherent case may seem somewhat radical, given that genitive is generally treated as a structural or unmarked case within nominals in many other languages. There are instances of non-structural genitives elsewhere. Karlsson (1999:183–184) notes that subjects in some Finnish necessive constructions (e.g., with *pitää* 'have to' or *täytyy* 'must') must bear genitive case. There are inherent genitives in languages outside Finnic as well: there were arguably inherent genitives in Ancient Greek (although there were many cases of structural genitive as well, see Anagnostopoulou and Sevdali (2015:455) and references there) and there are inherent genitives in Icelandic (see, for example, Thráinsson (2007:290)). A common test for structural/non-structural cases is to see whether they are preserved in passives— since true genitive (i.e., not accusative) case is never assigned to objects in Estonian, this test is not applicable. This is further complicated if a particular case (e.g., genitive) need not be uniformly structural/non-structural within a single language, as Alexiadou et al. (2014); Anagnostopoulou and Sevdali (2015) argue to be a possible state of affairs.

In any case, even though Estonian does not possess some of the evidence that exists in other languages, there are no serious negative consequences from this choice, and there is something to be gained in terms of parsimony and coherence of analysis. Furthermore, the morphological facts neatly define two groups of cases, with genitive behaving like cases that are more clearly inherent/lexical. Thus, I continue to treat genitive as an inherent case, leaving this as an open issue for future research.

particular size—namely, maximal nominal constituents—in a particular domain, the nominal phase, but the nominal's location within that phase is immaterial to the rule of case assignment. This is crucial for Baker as it applies equally to nominals in the complement position of N^0 as well as possessor position (for Baker, this is Spec,PossP). In contrast, the rule that I proposed for Estonian in (32) (repeated below) refers to a specific position and does not refer to a target of a particular size.

(32) Unmarked Partitive: Assign partitive case to complements of N^0 that do not already have a case value when the pseudopartitive extended projection is complete.

Both of these choices—reference to a particular syntactic position and indifference to the size of the constituent—were deliberate, and I believe both of them are necessary. With respect to size of the constituent, the main motivation for this choice is the existence of the case alternation not just in pseudopartitives, but in numeral-noun constructions as well. As I discussed in section 1.2, the "N2 phrase" in numeral-noun constructions is not as large as the N2 phrase in pseudopartitives. Thus, if we restricted the unmarked partitive rule to only constituents of a particular size, i.e., DP, we would need a different explanation for the case-marking in numeral-noun constructions, as the case-marked phrase is smaller than DP.

As an alternative, we could suggest that in Estonian, both DP (the partitive constituent in a pseudopartitive) and NumP (the partitive constituent in a numeral-noun construction) can be targets for case assignment.[22] However, this approach faces a challenge in DPs that lack a numeral— in such cases, the NumP is never assigned partitive case. For example, a nominative demonstrative modifying a partitive adjective and noun is totally ungrammatical (see (43)). Instead, everything matches in case (e.g., in a nominative context, all elements are nominative).

(43) a. * see [$_{\text{NumP}}$ väikes-t poissi]
this.NOM small-PAR boy.PAR
intended: 'this small boy'

b. see väike poiss
this.NOM small.NOM boy.NOM
'this small boy'

If the rule for unmarked case assignment is only searching for constituents of a particular size with no regard to their syntactic context beyond the kind of phase the constituent is in (as a Baker (2015)-style Unmarked Case rule does), it is unclear to me how to differentiate between NumPs that are assigned partitive case from NumPs that are not assigned partitive case.

It is for largely the same reason that I proposed that the rule must apply to a particular position, the complement of N^0. If referring to a nominal of a particular size is out of the question, and numeral-noun constructions suggest that it is, then we must target constituents for case assignment through other means. I proposed that unmarked case in Estonian refers to a particular location: the complement position of N^0. The kind of unmarked case explored here is only assigned to the complement position of N^0. It is not assigned to possessors, and

[22] I do not think it is possible to square this with Baker's proposal that it is not syntactic labels but referential indices that determine targets for case assignment. This would necessitate ascribing distinct indices to numerals and their nominal complements, and though Baker (2003) does not address the issue directly, such a move seems at odds with the semantic underpinning of the referential index.

it is only assigned to NumPs except when they are complements of N^0, i.e., when they are in a numeral-noun construction. In this way, it differs from Baker's implementation of unmarked case, but it also aims to capture a different set of facts than Baker (2015).

For that reason, I do not go so far as to propose that Baker's version of genitive case as unmarked case must be abandoned. Baker's version succeeds in situations where full nominal extended projections in various syntactic positions within DP bear the same case. This is likely because Baker only considers situations in which maximal nominals are assigned case.[23] My version succeeds in situations where nominal constituents of varying sizes in a particular syntactic position within DP bear the same case. Baker argues for a cross-linguistic picture in which some languages have a genitive case of his type, but others do not. Likewise, as I discuss in more detail in section 5.3, the unmarked case that I propose is not used in every language. In that sense, it is plausible that both versions could exist, and the choice depends on whether the language extends unmarked case to a variety of positions or to nominal constituents of varying sizes, like Estonian does for pseudopartitives and numeral-noun constructions. I will not speculate further here, but it would be worth investigating in future research how these two versions would interact. For example, we should ask why a a language would have one form over another or whether a single language could have both. These kinds of questions will surely feature prominently in research on case competition within DPs.

4 Against a morphological explanation

I have just proposed an analysis of the N2 case alternation in Estonian that is connected to the ways in which various cases enter the derivation. This analysis derives the N2 case alternation as a matter of timing. The cases which yield the matching pattern enter the derivation before the environment for the unmarked partitive is checked, and thus, unmarked partitive is unnecessary. In contrast, nominative and accusative—the clausal structural cases—are assigned after the entire pseudopartitive is built, and thus they are assigned after the unmarked partitive is assigned. A key piece of my proposal is that unmarked partitive case waits to be assigned until the entire pseudopartitive is built. In this section, I consider some analyses that abandon this assumption and aim to account for the N2 case alternation by appealing to morphological realization in different ways. I show that, at best, they do not illuminate the alternation in Estonian, and at worst, they simply cannot generate the right forms.

4.1 The basics of a morphological analysis of the N2 case alternation

The basic aspects of this kind of analysis were most recently articulated in a monograph by Pesetsky (2013). Pesetsky analyzes a case-marking alternation in Russian numeral-noun constructions that is very similar to the N2 case alternation in Estonian. The basic pattern is presented in (44).

(44) a. dva nov-yx stol-a
two.NOM new-GEN.PL table-GEN.SG

[23] Baker (2015) does consider situations where non-maximal nominals serve as case competitors (e.g., they can trigger dependent case on some other nominal), but it is only maximal nominals that are assigned case in the theory that he develops.

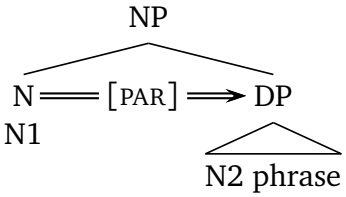
'two new tables' (Pesetsky, 2013:26)

b. k dv-um xoroš-im stol-am
to two-DAT.PL good-DAT.PL table-DAT.PL
'to two good tables' (Pesetsky, 2013:31)

When the entire numeral-noun construction is in a nominative (or accusative) position, the adjective and noun are marked genitive.[24] This is the Russian equivalent of the partitive pattern. When the entire construction is in another environment, e.g., dative in (44b), then all of the elements are marked with that case: the Russian equivalent of the matching pattern. The connections between the Russian pattern and the Estonian pattern are clear.

As a starting point for this kind of analysis, assume that the partitive case sometimes expressed by the N2 phrase is assigned by N1 as soon as it is merged, as in (45).

(45)



Further material is then merged with the structure in (45) until the entire pseudopartitive is built and then merged with the clausal spine. At some further point along the derivation, the pseudopartitive will be assigned some other case, and via the mechanism of case concord discussed before, that case will spread throughout the pseudopartitive. When it reaches the N2 phrase, the new case value (e.g., allative) is stacked outside the previously assigned partitive (Baker and Vinokurova, 2010; Pesetsky, 2013; Richards, 2012). This leads to representations like those in (46).

(46) a. **Partitive Assignment:** [bag [potatoes-PAR]]
b. **External Assignment:** [bag-ALL [potatoes-PAR-ALL]]

In the first step (46a), the N2 phrase is assigned partitive case (by N1). The second case value is "stacked" on the N2 phrase outside of the previously assigned partitive, as in (46b). Note that this requires that syntactic elements be able to receive case more than once. This is transparently true in some languages (e.g., Lardil (Richards, 2012)), but Estonian exhibits no visible case stacking (see, for example, (47)–(48)).

(47) * mees-t-le
man-PAR-ALL

(48) * mehe-t-le
man-PAR-ALL

Words like the forms in (47) and (48) do not exist in Estonian.[25] Thus, something more must be said about how the abstract representations in (46) are realized morphologically.

[24]There is a number distinction as well in (44)—the adjective is plural while the noun appears to be singular. See Pesetsky (2013) for more discussion.

[25]The difference between the forms in (47) and (48) is the stem choice: *mehe* is the proper stem for 'man' in allative case, *mees* is the proper stem for 'man' in partitive case. However, neither is well-formed.

4.2 An algorithm for realizing case stacks

Russian also lacks visible case-stacking, so to handle the morphological realization the case stacks generated in his analysis, Pesetsky (2013) proposes an algorithm that realizes the outermost case in a case stack. I will call this algorithm PRONOUNCE OUTERMOST.[26]

(49) PRONOUNCE OUTERMOST: only the outermost case in a case stack is realized.

PRONOUNCE OUTERMOST predicts the matching pattern straightforwardly, as demonstrated in (50).

(50) PRONOUNCE OUTERMOST predicts the matching pattern
   a. **Partitive Assignment:** [bag [potatoes-PAR]]
   b. **External Assignment:** [bag-ALL [potatoes-~~PAR~~-ALL]]

In (50a), *bag* is merged, and it assigns partitive case to the N2 phrase *potatoes*. In (50b), the entire pseudopartitive receives allative case, and this case value suppresses the realization of partitive case on the N2 phrase, resulting in the matching pattern. So far, so good.

However, PRONOUNCE OUTERMOST extends the matching pattern too far: as formulated in (49), it is not capable of producing the partitive pattern, as shown in (51).

(51) PRONOUNCE OUTERMOST does not predict the partitive pattern
   a. **Partitive Assignment:** [bag [potatoes-PAR]]
   b. **External Assignment:** [bag-ACC [potatoes-~~PAR~~-ACC]] ✖
   c. **Desired Outcome:** [bag-ACC [potatoes-PAR-~~ACC~~]] ☹

As before, partitive is first assigned to the N2 phrase in (51a), but when the entire pseudopartitive is assigned accusative case in (51b), PRONOUNCE OUTERMOST predicts that the accusative case stacked outside of partitive case will suppress the realization of partitive case on the N2 phrase. This would yield the matching pattern for accusative case, but what we want is the partitive pattern, as in (51c). The matching pattern requires pronunciation of the outermost case, but the partitive pattern requires pronunciation of the innermost case, which is something that PRONOUNCE OUTERMOST as written in (49) does not allow.

4.3 Loosening the algorithm

While the simplicity of PRONOUNCE OUTERMOST is appealing, it is too strong, and it requires some flexibility. Concretely, it has been proposed that such case pronunciation algorithms can consider whether or not a particular case exponent is overt (Baker and Vinokurova, 2010; Brattico, 2008, 2010, 2011), as in (52).

(52) PRONOUNCE OUTERMOST OVERT: pronounce the outermost case with an overt realization.

[26] Pesetsky initially calls it the ONE-SUFFIX RULE (p. 11) and later replaces it with the ONE-PROTOTYPE RULE (p. 101).

Thus, whereas the outermost case is preferentially realized, that rule is suspended when the outermost case exponent is not overt.

The motivation for this move is straightforward. The only case that is trumped in the languages explored in previous research on case alternations of this kind is nominative case, and nominative case has no identifiable affix in those languages. This is also true for the Estonian nominative singular, although it is less clear for the nominative plural, which is almost invariably realized as *-d*.[27] In any case, this explanation cannot straightforwardly account for marking in Estonian pseudopartitives, because partitive case trumps both nominative and accusative. Examples are repeated in (53) below.

(53) a. tükk leiba
piece.NOM bread.PAR.~~NOM~~
'a piece of bread'

b. tüki leiba
piece.ACC bread.PAR.~~ACC~~
'a piece of bread'

In order to realize partitive case on the N2 phrase in both nominative and accusative environments, PRONOUNCE OUTERMOST OVERT would require both nominative and accusative to count as being not overt, which seems rather *ad hoc*.

Drawing a distinction between fusional cases ("not overt") and agglutinative cases ("overt") will also not suffice, because this would mischaracterize the behavior of the genitive case. Recall that accusative case is morphologically identical to genitive case in the singular, yet accusative and genitive pseudopartitives display different patterns. Thus, fusional genitive case would have to count as overt, but morphologically identical accusative case would have to count as not overt. This, too, would be an *ad hoc* stipulation. Neither PRONOUNCE OUTERMOST nor PRONOUNCE OUTERMOST OVERT can generate the N2 case alternation in an illuminating way.[28]

[27] The only exceptions are the first- and second-person pronouns *meie* and *teie*.

[28] An anonymous reviewer suggests an alternative morphological account that aims to define nominative and accusative as a morphological natural class. The reviewer suggests that accusative and nominative could be treated as a natural class morphologically on the grounds that neither case has vocabulary items of its own, because nominative is null and accusative is non-autonomous, borrowing from the genitive in the singular and nominative in the plural. Then, the realization of partitive could be keyed to whether or not the particular case is linked to its own unique form. If so, then that case is realized rather than partitive.

I set aside the particulars of the formalization of this idea, though I note that it would be difficult to implement in a framework that gives no formal status to paradigms, like Distributed Morphology. More importantly, this alternative makes different predictions from the analysis I propose. Concretely, this alternative predicts the existence of a language with a uniquely-marked accusative which has the partitive pattern only for nominatives and the matching pattern elsewhere. This alternative also predicts that, in a language with partial syncretism (determined by, e.g., declension class), words with impoverished paradigms would extend the partitive pattern to more contexts than words with robust paradigms, on the assumption that the matching pattern obtains only for cases that have unique exponents. Because my analysis is not connected to case qua morphological strings, it does not predict the existence of these languages. I do not know of any attested examples of this kind, though the predictions are certainly worth investigating if any language with a pattern like Estonian's is discovered.

4.4 What is unique about pseudopartitives

Estonian pseudopartitives show the partitive pattern in two contexts: nominative and accusative. This makes Estonian unique (so far as I know) within the literature on constructions of this kind, which includes at least work on Finnish (Brattico, 2008, 2010, 2011), Inari Sami (Nelson and Toivonen, 2000), Polish (Rutkowski, 2002), and Russian (Babby, 1987; Pesetsky, 2013). These are all investigations of numeral constructions, and there is an important difference in the morphology of these constructions. Numerals in these languages have identical nominative and accusative forms.[29] This means that the partitive pattern only surfaces in one morphological context. This opens up a number of possible pathways to an analysis, and it is difficult to choose among them.

What is unique about Estonian pseudopartitives is that they clearly exhibit the partitive pattern in two morphological contexts: nominative and accusative. As a result, any analysis that crucially depends on the fact that nominative/accusative forms of numerals are syncretic in the aforementioned languages cannot straightforwardly account for the pattern in Estonian pseudopartitives. Though I have focused on morphological analyses in this section, not all of the analyses use morphology in this way. For example, to account for the behavior of Russian numeral-noun constructions in accusative positions, Pesetsky (2013) proposes that accusative case is not actually assigned to numeral-noun constructions in object position (pp. 63–66). However, this analysis faces the same challenge from the accusative in Estonian, because we can clearly see that accusative is assigned when pseudopartitives are in an accusative position in Estonian. Due to their unique morphological form, Estonian pseudopartitives are able to rule out sets of analyses that numeral-noun constructions alone cannot.

5 Extensions

We have just seen that analyses relying on multiple cases being assigned to the N2 phrase are unsatisfactory in that they cannot generate the N2 case alternation in a straightforward way. In this section, I show how the analysis presented in section 3 can be extended to cover a broader range of data. First, I consider what occurs when numerals combine with pseudopartitives, creating constructions that also show an alternation between a partitive pattern and a matching pattern. My analysis accounts for the case-marking alternation in both constructions rather straightforwardly. Second, I consider data from Finnish, which shows the case alternation in its numeral-noun constructions but not in its pseudopartitives. I suggest the difference in pseudopartitive case-marking in Finnish is due to a minimally different syntactic structure for pseudopartitives. Finally, I take a brief look at the typology of case-marking in pseudopartitives that is predicted by my analysis.

[29]The numeral 'one' is an exception in these languages. It behaves more like an adjective in that it does not participate in the N2 case alternation but always shows concord with the noun that it modifies, including having distinct nominative and accusative forms.

5.1 The partitive and matching patterns in numeral-pseudopartitives

As we have seen, the N2 Case Alternation occurs in both numeral-noun constructions and pseudopartitives in Estonian. It is possible for numeral-noun constructions and pseudopartitives to be combined, yielding a numeral-noun-noun sequence like the following examples.

(54) viis meetri-t riie-t
five.NOM meter-PAR cloth-PAR
'five meters of cloth' (EKSS, entry for *viis*)

(55) kolm kotti kartule-id
three.NOM bag.PAR potato-PL.PAR
'three bags of potatoes' (EKSS, entry for *kott*)

I call these NUMERAL-PSEUDOPARTITIVES in what follows. The examples in (54) and (55) exhibit the numeral-pseudopartitive version of the partitive pattern: the numeral is in its nominative/accusative form, and both N1 and N2 (of the pseudopartitive) bear partitive case. Numeral-pseudopartitives also have a matching pattern, where the numeral, N1, and N2 all bear the same case, as in (56) and (57).

(56) kuue-le kasti-le õlle-le
six-ALL box-ALL beer-ALL
'to six boxes of beer' (BALANCED)

(57) kolme koti kartuli-te kõrval
three.GEN bag.GEN potato-PL.GEN next.to
'next to three bags of potatoes'

In (56), all three elements must bear allative case. If any one of them does not (e.g., if the last one is in partitive case), the result is ungrammatical. The same is true of genitive case in (57).[30] Neither N1 nor N2 can bear partitive case in examples like these. In fact, the analysis presented here predicts exactly these patterns of case-marking without any additional assumptions. Let us examine the patterns in turn.

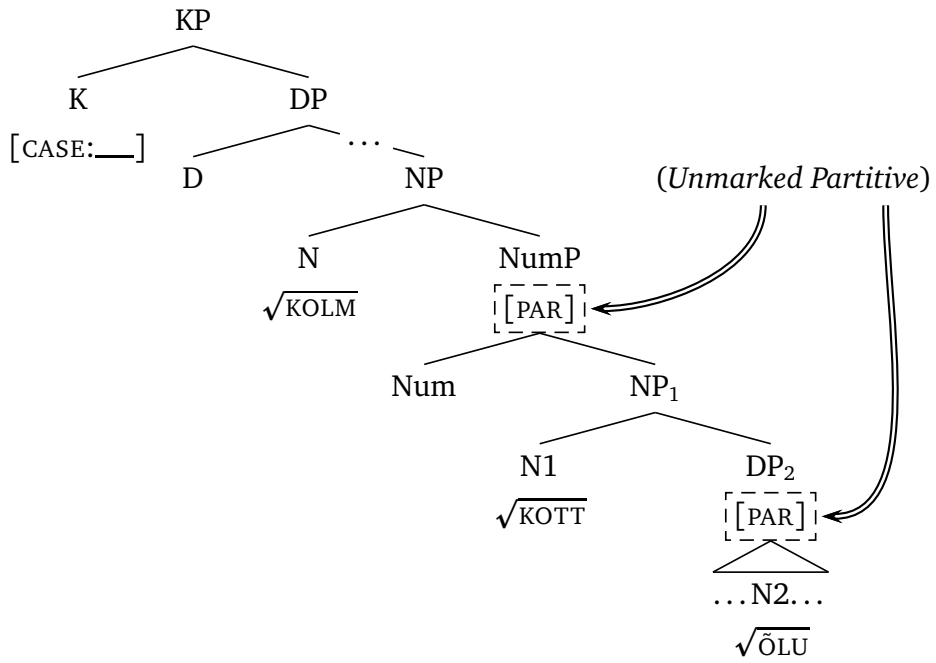
5.1.1 The partitive pattern in numeral-pseudopartitives

In the numeral-pseudopartitive partitive pattern, partitive case is marked on both N1 and N2 in the pseudopartitive. When a numeral-pseudopartitive is in a KP headed by a K^0 with no value, unmarked partitive case is assigned in two places: complement of N1 and complement of the numeral. This is depicted in the slightly abbreviated structure in (58).[31]

[30] Of course, this is not to say that all numeral-noun-noun sequences will exhibit either the partitive pattern or full case matching. For example, in *kahe-le rusika-s käe-le* two-ALL fist-INE hand-ALL 'onto two cramped hands', case-marking is not uniform, as 'fist' is in inessive case. Nouns frequently occur with case-marking as modifiers (loosely speaking) and their case-marking is independent of the nominals they are modifying in such circumstances.

[31] Recall that I have assumed that numerals are nouns taking NumP complements, although I emphasize again that these are not the only assumptions compatible with my analysis. See the discussion in section 1.2.

(58)



Note that we would yield the same result if we assumed that partitive case is only assigned to the complement of the numeral. In that case, the N2 phrase would come to bear partitive case anyway by case concord. However, that would complicate the conditions for unmarked partitive case assignment insofar as it would make one assignment dependent on another. Rather, I assume that both instances of unmarked partitive assignment—in complement position of a numeral and complement position of N1 in a pseudopartitive—are independent of each other. Both are tied to the features of the K^0 that heads the numeral-pseudopartitive construction.

5.1.2 The matching pattern in numeral-pseudopartitives

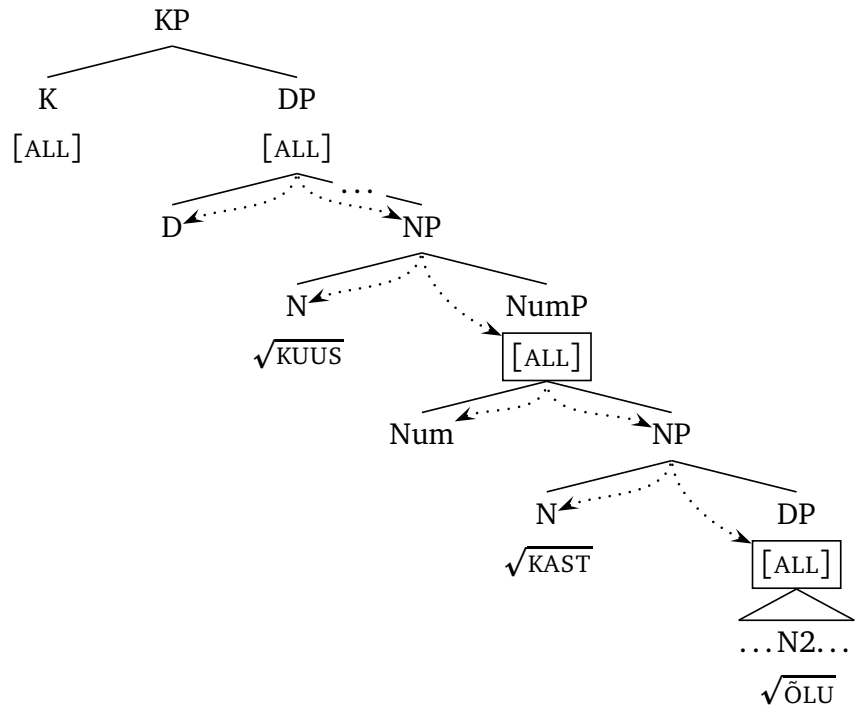
Recall that the matching pattern in numeral-pseudopartitives shows full matching, that is, all three elements bear the same case value. Examples (56) and (57) are repeated below.

(56) kuue-le kasti-le õlle-le
six-ALL box-ALL beer-ALL
'to six boxes of beer' (BALANCED)

(57) kolme koti kartuli-te kõrval
three.GEN bag.GEN potato-PL.GEN next.to
'next to three bags of potatoes'

The descriptive generalization about the case alternation in numeral-pseudopartitives is that either both N1 and N2 are marked with partitive case or neither is. Under the analysis proposed here, this falls out naturally, because partitive case on N1 and partitive case on N2 are both tied (indirectly) to the same source: the features of K^0. Thus, if a valued K^0 is merged with the numeral-pseudopartitive structure, its value is shared throughout the numeral-pseudopartitive by case concord, and there is thus no need for the unmarked partitive case, neither on N1 nor on N2. This is shown in (59) for allative case.

(59)



Because the unmarked partitive looks for caseless complements, it cannot apply in a structure like (59). Note that this requires that there are no additional phase boundaries between K^0 and the lowest noun, but this assumption is also necessary for the numeral-noun constructions and pseudopartitives independently— nothing changes when they are stacked. The only possible matching pattern that my analysis predicts is the full matching pattern exhibited by numeral-pseudopartitives.

5.2 Pseudopartitives and numeral-noun constructions in Finnish

As discussed extensively by Brattico (2010, 2011) and Seppänen (1983), Finnish numeral-noun constructions exhibit the same alternation between case assignment and case matching as we saw in Estonian, visible in (60)-(62).

(60) ne kaksi pien-tä auto-a
those.NOM two.NOM small-PAR car-PAR
'those two small cars' (Brattico, 2010:55)

(61) nii-ssä kolme-ssa piene-ssä talo-ssa
those-INE three-INE small-INE house-INE
'in those three small houses' (Brattico, 2010:69)

(62) * nii-ssä kolme-ssa pien-tä talo-a
those-INE three-INE small-PAR house-PAR
'in those three small houses' (Brattico, 2010:69)

In (60), we see that the complement of *kaksi* 'two' is marked with partitive case. However, if the entire DP is in another case (e.g., inessive), then everything matches in case, as in (61). It is not possible to leave 'small' and 'house' in partitive case, as in (62).

Finnish also has a pseudopartitive construction that looks superficially similar to the pseudopartitive construction in Estonian. Brattico (2008) discusses them in some detail, calling them *kasa* constructions. Some basic examples are given below:

(63) a. Pekka näki kasa-n hiekka-a.
Pekka saw stack-ACC sand-PAR
'Pekka saw a stack of sand.' (Brattico, 2008:142)

b. Kasa hiekka-a oli maa-ssa.
stack.NOM sand-PAR was ground-INE
'A stack of sand was on the ground.' (Brattico, 2008:142)

As before, we have what looks like a noun assigning partitive case to another nominal element. Brattico argues at length that the first nominal *kasa* 'stack' is the head of the construction, and he assumes it is a normal noun. This is completely in line with what I proposed for Estonian pseudopartitives.

However, there is an interesting difference between pseudopartitives in Finnish and pseudopartitives in Estonian: Finnish pseudopartitives have no matching pattern. This is visible in the following minimal pairs.[32]

(64) Finnish (no matching):

a. Miten paljon kaloreita on litra-ssa maitoa?
how many calorie.PL.PAR are liter-INE milk.PAR
'How many calories are in a liter of milk?' (Seppänen, 1983:164)

b. siitä jouko-sta auto-ja
that.ELA set-ELA car-PL.PAR
'from that set of cars' (Brattico, 2008:146)

(65) Estonian (matching):

a. Kui palju kalore-id on liitri-s piima-s?
how many calorie-PL.PAR be.3 liter-INE milk-INE
'How many calories are in a liter of milk?'

b. selle-st hulga-st auto-de-st
this-ELA group-ELA car-PL-ELA
'from this group of cars'

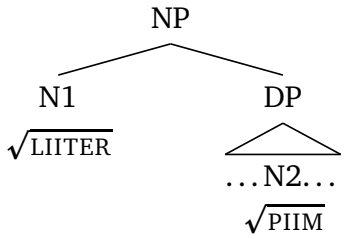
The word for 'liter' bears inessive case in both of the (a) sentences above, but the case-marking on 'milk' is different: partitive in Finnish, inessive in Estonian. The same is visible in the (b) examples. In Finnish, the N2 phrase always bears partitive case. In Estonian, the N2 phrase matches the case of N1 in all contexts except nominative and accusative.

My analysis can account for the difference between Finnish and Estonian pseudopartitives if the partitive case in Finnish pseudopartitives does not have the same source as the partitive case in Finnish numeral-noun constructions. Concretely, I propose that the partitive case in Finnish pseudopartitives is not Unmarked Partitive, but inherent partitive— that is, partitive

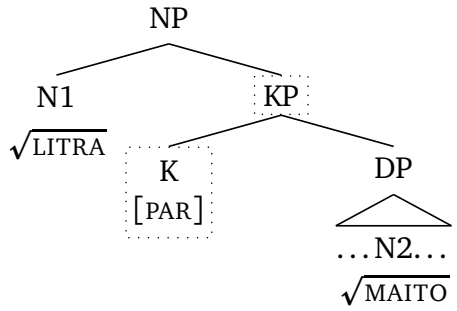
[32]The Estonian cognate of the Finnish word *joukko* 'set' is *jõuk* 'gang/mob', but this word is not typically used for inanimate objects like cars, so I have changed it to the more semantically-neutral measure noun *hulk*.

case that is introduced by a partitive K^0 (see Brattico (2008:144) for a nearly identical proposal). Inherent partitive may be independently necessary in Finnish: there are both postpositions and prepositions which assign partitive case to their complements (Karlsson, 1999:90), but the predominant case for adpositions to assign in Finnish is genitive (Vainikka, 1993).[33] Thus, the N2 phrase in Finnish pseudopartitives has a $K^0_{[\text{PAR}]}$, but the N2 phrase in Estonian pseudopartitives does not. This is shown in (66) and (67).

(66) Estonian:



(67) Finnish:



Because the partitive case in Finnish pseudopartitives is present from the outset, cases merged later (like inessive) cannot spread to the N2 phrase, and thus Finnish pseudopartitives have no matching pattern.

This analysis also gives us a straightforward way to understand the historic divergence between Estonian and Finnish. Koptjevskaja-Tamm (2001) argues that the pseudopartitive matching pattern found in Estonian is based historically on the pattern in numeral-noun constructions. As we have seen, numeral-noun constructions have a similar morphosyntactic form to pseudopartitives in nominative and accusative contexts in both languages. The difference between the languages arises only in matching contexts. It stands to reason that speakers of Estonian reanalyzed the partitive case in pseudopartitives to have the same source as the partitive case in numeral-noun constructions. With regard to the structures in (66) and (67), this change can be conceptualized as removal of the KP layer from the N2 phrase.[34]

When the KP layer is present in the N2 phrase, it blocks the spread of case values, because case features do not spread to those elements that already have a case value. The result is the Finnish pattern for pseudopartitives, where every N2 phrase bears partitive case. Once the KP layer is removed, matching cases can spread all the way down to N2 via case concord, resulting in full case matching akin to what is seen in numeral-noun constructions in both languages. When matching cases are not present, Estonian relies on the case-marking mechanism from numeral-noun constructions to case-mark the N2 phrase, resulting in a form that is identical to the Finnish pseudopartitive.

[33] Partitive has many functions in Finnish (and in Estonian), and though its uses overlap substantially in the languages, the uses also diverge in other ways beyond the pseudopartitive facts discussed here. I am not proposing that all instances of partitive case in Finnish are inherent— for discussion, see Csirmaz (2012); Vainikka (1989, 1993); Vainikka and Maling (1996).

[34] As a reviewer notes, it would be interesting to see if this difference had any ramifications for syntactic differences between the two languages. Unfortunately, I do not know what those differences might be, especially given that this is a fairly narrow corner of the grammar of these languages.

5.3 N2 phrase case-marking cross-linguistically

I close with some considerations about the typology of N2 phrase marking that is predicted by my analysis. The patterns in Estonian emerge from two facts about the Estonian language. First, the language exhibits case concord, which is formalized as the spread of case features throughout the elements of nominal phrases. Second, the language has an unmarked case that is assigned to caseless complements of nouns. These two proposals interact to yield the partitive pattern and the matching pattern in Estonian. However, neither one of these properties is universal. As is well known, there are some languages that lack case concord. There are also languages which do not mark N2 phrases in pseudopartitives with a special case, as I show straightaway. Based on whether a language does or does not have these properties, my analysis predicts three additional kinds of marking patterns in pseudopartitives, which appear to be attested according to an initial investigation, which I turn to now.

The first type of language is one that has case concord but has no rule of unmarked case assignment. These languages always show the matching pattern, even in nominative and accusative contexts. I submit that Greek (as described by Stavrou (2003); Alexiadou et al. (2007)) and German (as described in van Riemsdijk (1998)) may be such languages.[35]

(68) Greek:

a. Ine enas kuvas ammos
is a.SG.NOM bucket.SG.NOM sand.SG.NOM
'It is a bucket of sand.' (Melita Stavrou, p.c.)

b. Adjasa ena(n) kuva ammo stin paralia.
emptied.1SG a.SG.ACC bucket.SG.ACC sand.SG.ACC to beach
'I emptied a bucket of sand onto the beach.' (Melita Stavrou, p.c.)

(69) German:

a. zwei Gläser Wasser
two glass.NOM water.NOM
'two glasses of water' (Grestenberger, 2015:95)

b. eine Kiste Kubanischen Zigarren
a.ACC case.ACC Cuban.ACC cigars.ACC
'a case of Cuban cigars' (van Riemsdijk, 1998:15)

Both Greek and German pseudopartitives show full case matching, even in accusative case. With no unmarked case rule, there is no case-marking on the N2 phrase to block the spread of accusative (via case concord). Thus, accusative is able to spread all the way to N2.

The second type of language to consider is a language that has a rule of unmarked case assignment but no case concord. In these languages, the N2 phrase always receives special

[35] Some caveats are necessary. Like Estonian, German has at least two partitive constructions, which van Riemsdijk calls the direct and indirect partitive constructions. When I refer to German here, I am referring to the direct partitive construction. As van Riemsdijk shows, the two constructions require different analyses. As for Greek, the empirical generalization as claimed in the literature is that N1 and N2 always share the same case (see, e.g., Alexiadou et al. (2007:410)). However, the case system of Modern Greek is rather impoverished, and it is difficult to find an example where both N1 and N2 are unambiguously in nominative or accusative case, because the two are often syncretic. I am grateful to Melita Stavrou (p.c.) for creating these examples, where both N1 and N2 are distinct for nominative and accusative.

marking, regardless of syntactic context. I would like to suggest this as a way of thinking about English *of*-insertion, whereby the English word *of* is treated as a case marker inserted via last resort means (see, e.g., Harley (2009); Harley and Noyer (1998)). This kind of *of* is arguably present in English pseudopartitives, as in (70) and (71).

(70) a box of books

(71) a carton of milk

My analysis could generate this in the following way. Assume English has an unmarked case rule that assigns case (through insertion of *of*) to caseless complements of nouns.[36] Assume further that English lacks the mechanism of case concord. The end result is that no matter the syntactic context, the N2 phrase in English pseudopartitives will get marked with *of*.[37]

The third type of language that my analysis predicts is a language with neither case concord nor an unmarked case of the kind explored here. This yields languages where N1 and the N2 phrase are simply collocated, with no visible marking on the N2 phrase. They are essentially the same as Greek and German, except they lack robust morphological case-marking. I submit Danish as an example of such a language (Hankamer and Mikkelsen, 2008).[38]

(72) en gruppe turister
a group tourists
'a group of tourists' (Danish, Hankamer and Mikkelsen 2008:318)

(73) en liter vand
a liter water
'a liter of water' (Danish, Hankamer and Mikkelsen 2008:324)

In Danish pseudopartitives, the only thing indicating the difference between N1 and N2 is linear position. Under my analysis, this pattern emerges when a language lacks both a robust system of case concord and an unmarked case of the type proposed here

The emergent typology of N2 phrase marking is summarized in Table 3. Although this

		UNMARKED CASE	
		+	–
CASE	+	Estonian	Greek, German
CONCORD	–	English	Danish

Table 3: Marking of the N2 Phrase in Pseudopartitives

[36]Harley (2009) treats *of* as a more broadly available last resort case mechanism. In her analysis, it is used to rescue nominalization constructions that lack a VoiceP, and thus, a means of assigning accusative case to the internal argument under her analysis. Harley assumes that *of* a dissociated morpheme, inserted postsyntactically for morphological well-formedness reasons (p. 329).

[37]A reviewer notes that there is a long-standing tradition of identifying this use of *of* as a kind of genitive case and wonders if this is importantly different from what I propose here. The answer to that depends crucially on how this genitive *of* is introduced into the structure. For example, Harley and Noyer's (1998) proposal for *of* is very similar to what I propose here. However, if the *of* is a case in name but formalized as a PP headed by *of*, that would be quite different from my analysis, where the *of*-marked phrases are smaller than PP.

[38]Like German, Danish also has an indirect partitive construction, but Hankamer and Mikkelsen (2008) argue quite convincingly that the N2 phrase in these constructions is a regular PP, so I set them aside here.

discussion is merely a sketch of possible analyses for these phenomena, the results are nevertheless promising. Perhaps the most interesting aspect of this brief exploration is the possible analysis of case-like adpositions seen in pseudopartitives as instances of unmarked cases. The idea that these are not true prepositions has been independently developed in the literature, and my hope is that the analysis here is another way that we can consider formalizing that intuition.

6 Conclusion

In this paper, I have proposed an analysis of the case-marking alternation in Estonian pseudopartitives and numeral-noun constructions in terms of the timing of case assignment. Partitive case in these constructions is an unmarked case assigned to complements of nouns that do not already have case values. Nominative and accusative cases are assigned too late to affect case-marking internal to the nominal phrase itself, and thus partitive case only surfaces on the N2 phrase in those contexts. This analysis extends straightforwardly to the case patterns seen in numeral-pseudopartitives in the language, which show exactly the distribution of partitive case-marking predicted. In brief, every time partitive case is assigned in the syntax, it is realized morphologically, yielding a more transparent connection between the syntax and morphology of case-marking in Estonian pseudopartitives and numeral-noun constructions.

One question that I have not addressed in this paper is how the partitive case in pseudopartitives and numeral-noun constructions relates to other uses of partitive in Estonian. For example, Baker (2015) proposes an analysis of partitive case in Finnish whereby it is a kind of unmarked case inside VPs (and ultimately, inside the complement of the negation head as well). The empirical generalizations that hold for the Finnish VP partitive broadly hold for Estonian as well, though I forego examples here (see Tamm (2007) for examples and discussion). There are tantalizing connections between the uses of partitive case inside VP and in the constructions considered here— it is only elements that could plausibly be assigned nominative or accusative that can instead bear partitive case if the semantics are right. No nominal in allative case will surface in partitive case in an atelic VP, nor will any unbounded (i.e., quantitatively indefinite) nominal bear partitive rather than allative, for example. This is certainly reminiscent of the pattern seen here, where partitive case only surfaces in the domain of nominative and accusative.

To have a unified account of these cases, I would say that VP-internal partitive is only assigned to DPs that are complements of V^0. This would put my analysis of partitive case in line with the treatment by Vainikka (1993:142-143), Kiparsky (1998:31), Kiparsky (2001:327), where partitive case in Finnish is the default case for complements. Baker (2015) comes close to proposing this when he considers the challenges brought by movement, ultimately proposing that "unmarked partitive case [in Finnish] is not inherited by the higher copy in the chain from the lower one" (p. 278). This leads to a situation where only DPs that remain internal to VP are eligible for partitive case assignment. And, given that there are few locations inside VP apart from the complement of V^0, it seems that an account whereby VP partitive is only assigned to the complement of V^0 is worth pursuing. However, that is clearly a project in its own right,

and I will not speculate further here.[39]

On a theoretical level, this analysis makes a number of claims concerning the landscape of morphological and syntactic case. It endorses certain aspects of the Marantz/Baker view of case assignment. First, it supports the idea that languages can have unmarked cases that are particular to the nominal domain (Baker, 2015; Marantz, 1991), although it suggests that the means for determining when this case can be assigned must be more varied than previously assumed. Second, it supports the proposal that case assignment does not apply at will, but at dedicated points during the derivation (i.e., *phases*), a conclusion in line with Baker (2015); McFadden (2004).

The data considered here also pose challenges to analyses based on so-called case stacking or multiple case assignment to the quantified phrase. Such analyses either overgenerate or undergenerate the matching pattern in Estonian pseudopartitives. This is only observable because of the existence of the uniquely identifiable accusative form of the pseudopartitive. Overall, the proposals here do not just allow for an account of Estonian pseudopartitives, but contribute to the development of case theory more generally, especially as it applies inside nominal phrases.

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