

Parallel Nominal and Verbal Projections

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1 Introduction

The split-*vP* hypothesis was first proposed by Larson (1988) for capturing the properties of double object constructions. According to this hypothesis, the verbal projection consists of two distinct VP-shells which combine to form the full verbal phrase. More recent work on verbal configurations has extended the split-*vP* structure proposing further decomposition of the verb into roots and categorial and functional heads which combine to form the complete verbal element (cf. Hale and Keyser 1993, Halle and Marantz 1993). At the same time, research on nominal elements has also led to a decomposition of the structure of the noun phrase. The conclusions from these works have led to the introduction of several functional projections within the noun phrase providing a decomposed structure in which the various nominal elements are represented in distinct syntactic nodes (Abney 1987, Valois 1991, Ritter 1992). In addition, it has been shown that there is a direct correlation between the functional elements in the noun phrase and verb phrase structures, such as Number and Aspect

(Travis 1992, Verkuyl 1993, Borer 1994). Yet despite arguments that noun phrases are parallel to verbal clauses in many respects, nouns have generally been treated as less complex than verbal projections, and the functional categories within the noun phrase itself have not played a significant role in establishing relations such as case and agreement between the nominal and verbal predicates.

In this paper, I investigate the correlation between the noun phrase and the verb phrase by studying morphological and semantic properties of case and agreement in several languages: The connection between boundedness (or telicity) and case-marking on direct objects is well-documented in the literature. Furthermore, studies on a number of languages have pointed to a direct relation between specific readings and the presence of overt case morphology on the direct object. Based on these data, I argue that these correspondences can be captured by establishing a direct relation between the functional categories within two parallel nominal and verbal projections. Following ideas developed in Vergnaud (2000), I suggest a framework in which the verbal predicate and nominal phrase each project their own domain in syntax, and case and agreement are realized when a nominal node enters into a specifier relation with its verbal counterpart. I argue that the two parallel domains can enter into a checking relation at various points in the computation, giving rise to corresponding semantic interpretations as well as case and agreement morphology. The parallel architecture proposed for nominal and verbal projections straightforwardly captures the direct correspondence between meaning and structure and provides a new perspective

on the notion of specifier-head relations.

2 Case and Aspect

Literature on Finnish case-marking demonstrates that there exists a clear correspondence between verb phrase aspect and accusative case in this language. Kiparsky (1998) convincingly shows that when the verb phrase receives a bounded aspect reading, the direct object appears with accusative case; however, when the verbal predicate is unbounded, the object appears with partitive case. This is illustrated in the following example: In (1a), the object receives accusative case and the predicate is interpreted as bounded, as shown by its compatibility with the ‘in an hour’ adverbial. Example (1b), on the other hand, has a partitive object and is interpreted as an unbounded predicate.

- (1) a. Matti luk-i kirja-t (tunni-ssa)
 Matti-SG/NOM read-PAST/3SG book-PL-ACC (hour-INESS)
 ‘Matti read the books (in an hour).’
- b. Matti luk-i kirjo-j-a (tunni-n)
 Matti-SG/NOM read-PAST/3SG book-PL-PART (hour-ACC)
 ‘Matti read books (for an hour).’

The following example also illustrates the close relation between aspect and case morphology in Finnish. The direct object in (2a) has accusative case and the VP is bounded, whereas the partitive case on the object in (2b) gives rise to an unbounded

reading. The object in this example can be interpreted either as an indefinite as in (i) or as a definite object in the progressive reading in (ii), indicating that case-assignment in Finnish does not depend on the strength or definiteness of the object.

- (2) a. Hän kirjoitt-i kirjeet [bounded]
 He/she write-PAST/m/3SG letters-ACC
 ‘He wrote the letters.’
- b. Hän kirjoitt-i kirje-i-tä [unbounded]
 He/she write-PAST/m/3SG letter-PL-PART
 (i) ‘He wrote letters.’
 (ii) ‘He was writing (the) letters.’

In fact, Case-assignment in Finnish correlates with what Kiparsky calls *quantitative determinacy*. This notion is equivalent to *quantization* of Krifka (1992) or *specific quantity of A (+SQA)* of Verkuyl (1993). It is used to refer to an object that represents a specific quantity or cardinality, and is closely related to VP aspect. Thus, an event is bounded if the direct object refers to a specific quantity (i.e., is +SQA) as illustrated in the contrast in (3) and (4) repeated from Verkuyl (1993).

- (3) a. They ate cheese. [unbounded]
 b. They ate from the cheese. [unbounded]
 c. They ate sandwiches. [unbounded]
 d. They ate three sandwiches. [bounded]

- e. They ate a sandwich. [*bounded*]
- (4)
- a. He played from Schumann’s cello concerto. [*unbounded*]
 - b. He played music. [*unbounded*]
 - c. He played a piece from Schumann’s cello concerto. [*bounded*]
 - d. De Machula played the cello concerto by Schumann. [*bounded*]

In these sentence groups, the verb remains constant, but the choice of the object affects the boundedness of the predicate. Verkuyl argues that the difference in the aspectual interpretations obtained can be explained in terms of quantification or delimitation of mass. Hence the mass noun ‘cheese’ or the bare plural ‘sandwiches’ both refer to an unspecified quantity of cheese or sandwiches (which he represents as -SQA). A noun phrase with a cardinal such as ‘a sandwich’ or ‘three sandwiches’ refers to a specified quantity (+SQA). Definites, of course, are +SQA. A partitive reading such as ‘from the cheese’ refers to an unspecified quantity as opposed to ‘a piece from Schumann’s Cello concerto’ which expresses a specified quantity. [+SQA] can thus be defined as finite cardinality of a noun.

Finnish VP aspect also depends on the lexical properties of the verb. In order for a predicate to be bounded at the VP level, the verb needs to allow the formation of bounded predicates. Following Ghomeshi and Massam (1994), I will classify these verbs as *result-oriented* since they can emphasize the result of the action they denote¹. Hence, verbs such as *buy*, *take*, *kill*, *get*, *lose* and *find*, are result-oriented verbs in

Finnish, while verbs such as *love*, *touch*, *kiss*, *seek*, *hate*, *want* and *doubt*, always give rise to unbounded predicates and do not allow accusative case on the direct object regardless of the quantitative determinacy or cardinality of the noun phrase, as illustrated below:

- (5) a. Anu suutel-i Esa-a [*unbounded*]
 Anu kiss-PAST/3SG Esa-PART
 ‘Anu kissed Esa.’
- b. *Anu suutel-i Esa-n
 Anu kiss-PAST/3SG Esa-ACC

Table 1 correlates with the generalizations proposed in Kiparsky (1998), and shows how the verbal and object properties interact to contribute to the formation of verb phrase aspect in Finnish. If the verb is result-oriented, then it depends on the object properties (i.e., whether it represents a specific quantity) to determine the aspect at the *vP* level. Thus, a +SQA object will delimit the event (cf. Tenny 1987, Borer 1994) giving rise to a bounded verb phrase aspect, whereas a -SQA object will form an unbounded event. If the verb is not result-oriented, however, the *vP* event is always unbounded, regardless of the object properties. Case-marking on the object correlates with the boundedness of the predicate.²

Ramchand (1993) argues that Scottish Gaelic also provides direct evidence for the correspondence between the aspectual properties of the predicate and the case assigned on the direct object. In this language, the periphrastic constructions appear

Table 1: Correlation between case and aspect in Finnish

	Verb	Object	<i>v</i> P Aspect	Object Case	example
1	+result	+SQA	+bounded	Accusative	<i>Matti luki kirjat</i> ‘Matti read the books’
2	+result	-SQA	-bounded	Partitive	<i>Matti luki kirjoja</i> ‘Matti read books’
3	-result	+SQA	-bounded	Partitive	<i>etsin karhuja</i> ‘I am looking for the bears’
4	-result	-SQA	-bounded	Partitive	<i>etsin karhuja</i> ‘I am looking for bears’

with overt aspectual particles that indicate the boundedness of the verb phrase. In addition, the occurrence of these aspectual heads correlates with the case assigned on the direct object as shown in the following examples taken from Ramchand (1993):

- (6) a. Bha Calum a’faicinn a’bhalaich.
 Be-PAST Calum *ag* see-VN boy-GEN
 ‘Calum was seeing the boy.’
- b. Bha Calum air am balach (a) fhaicinn.
 Be-PAST Calum *air* the boy-DIR 3rd see-VN
 ‘Calum had seen the boy.’

In Scottish Gaelic, the verbal noun appears with an aspectual particle and a tense morpheme as discontinuous elements. When the sentence appears with the aspectual head *ag* the object always appears in the genitive case and is the direct complement of the verbal noun as in (6a). These sentences also represent an unbounded verb phrase as shown by the compatibility of the *ag* constructions with the adverbial ‘for two hours’ in (7). However, if the sentence contains the aspectual head *air* as in the example in (6b), the object receives the direct case and it appears in the preverbal

position. These particles appear in sentences that are unambiguously bounded (or telic).

- (7) Bha mi ag ol leann fad da uair a thide
Be-PAST I-DIR *ag* drink-VN beer for two hours
'I drank beer for two hours.

In this section, we saw that both Finnish and Scottish Gaelic show a correspondence between the aspect of the predicate and case-marking on direct objects. The type of case that an object receives correlates directly with the (un)boundedness of the *vP*, which is itself dependent on a combination of the result-orientedness of the verb and the quantitative determination of the NP. In particular, an unbounded predicate can only occur with a partitive case in Finnish or a genitive in Scottish Gaelic. A bounded predicate, on the other hand, appears with the 'strong' case: accusative in Finnish and direct in Scottish Gaelic. Crucially, the Finnish data discussed clearly showed that the \pm SQA properties (or finite cardinality) of the object NP affect the boundedness of the verb phrase.

3 Specificity and Agreement

In Eastern Armenian³, the overt morpheme 'ə' (/n/ after vowels) is described as the definite article in traditional grammar (see for instance Kozintseva 1995). This can be seen in the examples below where the presence of the schwa (marked as AFF) on

the direct object seems to indicate the definiteness of the nominal.

(8) Ara-n girk'-ə ayr-ets

Ara-NOM book-AFF burnt

'Ara burnt the book.'

(9) Ara-n girk' ayr-ets

Ara-NOM book burnt

'Ara burnt a book/books.'

Sentence (8) contains a definite object, which consists of a noun carrying the overt 'ə' morpheme. If the object lacks overt morphology, such as the one illustrated in (9), it is interpreted as an indefinite (*a book*) or as a bare plural (*books*). I will argue, however, that 'ə' is not a marker of definiteness on direct objects, but rather occurs in the context of specific objects and is actually a marker of objective or accusative case⁴. The fact that the presence of 'ə' does not correlate with definiteness can be seen in the following examples containing quantified indefinite objects. Quantified indefinites consist of a numeral, an optional classifier and a noun, and may appear with or without overt 'ə' as shown in (10a) and (10b), respectively.

(10) a. Ara-n mi girk' ayrets

Ara-NOM one book burnt

'Ara burnt a book.'

b. Ara-n mi girk'-ə ayrets

Ara-NOM one book-AFF burnt

'Ara burnt one book/one of the books.'

In the rest of this section, I will treat the overt ‘ə’ or ‘n’ morpheme as the manifestation of accusative case on the object and I will show that, unlike Finnish and Scottish Gaelic, the overt case in these examples corresponds to the specificity on the object noun.

3.1 Case-marking and Interpretation

The correlation between case-marking and the semantic interpretations found on the object NPs has been noted in a number of languages. For instance, Enç (1991) remarked that in Turkish, object NPs with overt accusative case are always specific whereas NPs appearing without the accusative case are obligatorily interpreted as nonspecific. This is illustrated in the Turkish sentences below.

(11) Ali bir piyano-yu kiralamak istiyor.

Ali one piano-ACC to-rent wants
‘Ali wants to rent a certain piano.’

(12) Ali bir piyano kiralamak istiyor.

Ali one piano to-rent wants
‘Ali wants to rent a (nonspecific) piano.’

As the translations indicate, the case-marked object in (11) is interpreted as specific: there is a particular piano that Ali wishes to rent. In the case of the indefinite object in (12), however, Ali doesn’t have a particular piano in mind. He wants to rent some piano or other.

Enç (1991) provides a definition for the semantic interpretation of specificity based on the link of the NP to the previously established domain of discourse. If an element is specific, then the link is usually one of inclusion; the referent of the NP is a *subset* of the already established domain of discourse. The sentence in (11), for instance, suggests a context where there are several pianos (say in a showroom), hence the domain of the discourse has been established. When (11) is uttered, the NP *bir piyano-yu* is linked to the previously established referent “pianos”, by virtue of being a subset. The object is then interpreted as a specific NP. This pre-established referent domain is not available when (12) is uttered. An important distinction between specific and nonspecific elements is that specificity presupposes existence, whereas nonspecific NPs assert an existence. Diesing (1990) uses a very similar classification for NPs, but she refers to specifics as “presupposed” material and nonspecifics are described as “existential”.

Consider the Eastern Armenian sentences in (13). The indefinite object in (13a) doesn’t carry an accusative case morpheme, and it receives a nonspecific interpretation. This sentence suggests that Ara is trying to catch a horse, any horse will do. The indefinite in (13b), however, bears accusative case⁵, and it refers to a particular horse that Ara is trying to catch. Hence the indefinite in (13b) receives a strong reading and is interpreted as a specific object.

- (13) a. Ara-n ašxat-um e mi hat dzi bəɾni
 Ara-NOM try-IMPF be-PRES/3SG one CL horse catch-Subj/3SG

‘Ara is trying to catch a horse.’

- b. Ara-n ašxat-um e mi hat dzi-an bəRni
Ara-NOM try-IMPF be-PRES/3SG one CL horse-ACC catch-Subj/3SG
‘Ara is trying to catch a horse.’

→ ‘There is a horse such that Ara is trying to catch it.’

Accusative case-marking on the quantified indefinites can also mark a partitive reading as exemplified in the contrast below:

- (14) a. katu-n mi mək-an bəRn-el e
cat-NOM one mouse-ACC catch-PERF be-PRES/3SG
‘The cat has caught a mouse/one of the mice.’
- b. katu-n mi muk e bəRn-el
cat-NOM one mouse be-PRES/3SG catch-PERF
‘The cat has caught a mouse.’

Suppose a context in which the cat has been chasing some mice for a while. The case-marked direct object in (14a) would then refer to a mouse from this presupposed set of mice, namely that the cat has caught one of the mice that it had been chasing. (14b), on the other hand, does not allow for such a reading; it is about some mouse or other (there is no pre-established set of mice in the discourse).

(15) is another example of an NP with a partitive reading. The sentence presupposes a set of books previously introduced in the discourse and it refers to one book out of the set, that has been burnt by Ara. This sentence is semantically equivalent

to the overtly partitive construction in (16). Note that the partitive construction in (16) also bears the accusative case. This is expected since by virtue of referring to an element from a previously established set, partitives are interpreted as specific NPs.

- (15) Ara-n mi girk'-ə ayr-el e
 Ara-NOM one book-ACC burn-PERF be-PRES/3SG
 'Ara has burnt a book/one of the books.'

- (16) Ara-n gər-k-er-its mek-ə ayr-el e
 Ara-NOM book-PL-ABL one-ACC burn-PERF be-PRES/3SG
 'Ara has burnt one of the books.'

Since definites always receive a specific interpretation, we naturally expect definite object NPs to always carry the accusative case. This expectation is borne out, as illustrated in the following three examples involving Proper Names, Pronouns, and demonstrative NPs, respectively.

- (17) Ara-n Siran-in hamp'uyr-um e
 Ara-NOM Siran-ACC kiss-IMPF be-PRES/3SG
 'Ara is kissing Siran.'

- (18) Ara-n iren hamp'uyr-um e
 Ara-NOM her/him(Acc) kiss-IMPF be-PRES/3SG
 'Ara is kissing her/him.'

- (19) Ara-n ays girk'-ə kart'ats-el e
 Ara-NOM this book-ACC read-PERF be-PRES/3SG
 'Ara has read this book.'

Without the accusative case marking, these sentences are ungrammatical:

- (20) *Ara-n Siran hamp'uyr-um e
Ara-NOM Siran kiss-IMPF be-PRES/3SG
- (21) *Ara-n ir hamp'uyr-um e
Ara-NOM her/him(Gen) kiss-IMPF be-PRES/3SG
- (22) *Ara-n ays girk' kart'ats-el e
Ara-NOM this book read-PERF be-PRES/3SG

Milsark (1977) distinguishes two types of determiners which he classifies as “weak” and “strong”. He observed that weak determiners, but not strong ones, can occur in existential sentences.

(23) There is/are *a/some/a few/many/three* flower(s) in this garden.

(24) *There is/are *the/every/all/most* flower(s) in this garden.

Enç points out that the specific/nonspecific categorization parallels Milsark’s distinction between “strong” and “weak” determiners. Namely, if an NP contains a strong determiner, it is specific and if the determiner of the NP is weak, then it can be interpreted as either specific (including partitive) or nonspecific. If Eastern Armenian case-marking does in fact correspond to the specificity of the object, the object NPs with strong determiners should always bear overt case morphology while those containing weak determiners could appear with or without accusative case. We have

already seen that definite descriptions follow this pattern (examples (17)-(19)). The following sentences further confirm this contrast.

According to Enç (1991), universally quantifying indefinites often behave like specific elements. In Eastern Armenian, the universal quantifiers *amen* (=all) or *amen mi* (lit: all one = each) need to appear within an object NP that has been marked for case as illustrated in (25).

- (25) a. Yes *amen gərək'-er-ə kart'ats-el em*
 I all book-PL-ACC read-PERF be-PRES/1SG
 'I have read all the books.'
- b. Yes *amen mi girk'-ə yerku ank'am kart'ats-el em*
 I all one book-ACC two time read-PERF be-PRES/1SG
 'I have read each book twice.'

Consider the following sentences containing object NPs with weak determiners. All of the sentences in (26) show the weak readings of the direct object NPs containing the determiners *three*, *a few* (or *several*) and *many*, respectively. None of these objects bears accusative case. In the corresponding sentences in (27), however, all the direct objects appear with overt case⁶ and they are interpreted as partitives, i.e. receive a specific reading.

- (26) a. *Ays ašakert-ə yerək' hat girk' e kart'ats-el*
 this student-NOM three CL book be-PRES/3SG read-PERF
 'This student has read three books.'

- b. Ara-n mi k'ani hat girk' e ar-el
 Ara-NOM one few CL book be-PRES/3SG buy-PERF
 'Ara has bought a few books.'
- c. Ara-n šat girk' e ar-el
 Ara-NOM many book be-PRES/3SG buy-PERF
 'Ara has bought many books.'
- (27) a. Ays ašakert-ə yerek' hat gark'-er-ə kart'ats-el e
 this student-NOM three CL book-PL-ACC read-PERF be-PRES/3SG
 'This student has read three of the books.'
 'This student has read the three books.'
- b. Ara-n mi k'ani hat gark'-er-ə art'en kart'ats-el e
 Ara-NOM one few CL book-PL-ACC already read-PERF be-PRES/3SG
 'Ara has already read a few of the books.'
- c. Ara-n šat gark'-er-ə art'en kart'ats-el e
 Ara-NOM many book-PL-ACC already read-PERF be-PRES/3SG
 'Ara has already read many of the books.'
 'Ara has already read most of the books.'

Additional evidence for the relation between overt case morphology and strong interpretation comes from *wh*-elements. Pesetsky (1987) argues that certain *wh*-phrases of the form *which N* are D-linked (or discourse linked). As Enç notes, this notion seems to correspond to specificity reading as described here. As expected, *which N* phrases always carry the accusative case in object positions in Eastern Armenian as

illustrated in (28). This is in contrast to other *wh*-phrases which behave like the weak determiner NPs, in that they can appear with or without overt case as shown in (29).

- (28) a. Ara-n vor girk'-ə kart'-ats
 Ara-NOM which book-ACC read-AOR/3SG
 'Which book did Ara read?'
- b. *Ara-n vor girk' kart'-ats
 Ara-NOM which book read-AOR/3SG
- (29) a. Ara-n inč kart'-ats
 Ara-NOM what read-AOR/3SG
 'What is Ara reading?'
- b. Ara-n inč-ə kart'-ats
 Ara-NOM what-ACC read-AOR/3SG
 'What did Ara read?' (i.e., 'Which part did Ara read?')

(28a) consists of an object in the form of *which N*, which bears the accusative case. As shown in (28b), the case is obligatory on this DP. The sentences in (29) also contain *wh*-phrase objects. These *wh*-DPs have the option of appearing with or without the case morpheme. (29a) simply inquires about what Ara is reading. The interpretation is similar to the English question given in the translation. In (29b), the question can be translated as 'which part did Ara read?'. The presupposition is that Ara read something and there is a pre-established domain of referents that the *wh*-DP is linked to. Hence, the accusative case is forcing a partitive reading as in

‘which one (of the sections/books) did Ara read?’.

The data discussed in this section clearly point to a correlation between case morphology and the specificity reading of the direct objects in Eastern Armenian. In addition, the objects appearing with the overt case have been shown to occupy a higher position within the syntactic configuration. In particular, Megerdumian (2002) shows that bare objects need to remain in the immediately preverbal position while overtly marked objects do not display such verb-adjacency requirements. This contrast can be seen in the following examples with intervening adverbial elements. As the examples in (30) show, the sentential adverbs *vstah* and *havanabar* are allowed to separate the case-marked direct object from the main verb.

- (30) a. Ara-n ays girk-ə *vstah* kə-kart’a
Ara-NOM this book-ACC certainly COND-read/3SG
‘Ara will certainly read this book.’
- b. Ara-n mek’ena-n *havanabar* art’en ləvats-el e
Ara-NOM car-ACC probably already wash-PERF be-PRES/3SG
‘Ara has probably already washed the car.’

In contrast, the bare object may not be separated from the verb as illustrated in (31).

- (31) a. *Ara-n votanavor *vstah* as-ets
Ara-NOM poem certainly say-AOR/3SG
‘*Ara will certainly recite a poem/poems.’

- b. *yerexa-ner-ə hetzaniv *havanabar* kə-k'əš-en
 child-PL-NOM bicycle probably COND-ride-3PL
 ‘*The children will probably ride a bicycle.’

Other constituents, such as instrumentals, locatives, and full prepositional phrases, may also intervene between the case-marked object and the verb, but are unable to appear between the caseless (bare or quantified indefinite) object and the verbal element.

That sentential adverbs may separate the case-marked objects from the verb but are disallowed from appearing between the bare indefinites and the verb clearly suggests that the two object types occupy different structural positions. Furthermore, sentential adverbs have been argued to occupy a position that is high in the clausal structure. These adverbs are considered to be outside of the verbal domain, generally licensed either by the Complementizer or the Inflectional heads (Potsdam 1999). Within a split-*vP* analysis, sentential adverbs occupy a position outside the *vP* node. The fact that these adverbs can appear between the accusative objects and the verb indicates that the overtly case-marked direct objects are also outside of the *vP* projection. On the other hand, objects without an overt case morpheme are not allowed to separate from the verb by sentential adverbs and remain in the preverbal position, which is good indication that the bare indefinites are *vP*-internal arguments. Furthermore, a study of the phrasal stress pattern shows that the indefinites appearing without overt morphology remain internal to the verb phrase, receiving main stress,

whereas case-marked objects are external to the *vP* (cf. Tamrazian 1994, Megerdoo-
mian 2002). Hence, the different specificity readings observed in this section correlate
with distinct object positions: Specific objects appear outside the *vP* structure and
nonspecific objects are *vP*-internal.

The existence of two distinct structural positions for the direct object which cor-
relate with overt case-marking and specificity readings on the NP have been observed
for a number of languages (Mahajan 1990 for Hindi, Enç 1991 for Turkish, Butt 1995
for Urdu, Karimi 1996 and Kahnemuyipour 2004 for Persian). Most of the analyses
proposed to capture the relation between nominal specificity and the structural po-
sition of the object DP have made use of the *Agr_oP* projection, which is assumed to
be a functional node outside the *vP* domain responsible for case-checking with the
direct object.

It should be noted, at this point, that traditionally the animate noun morphology
on the direct object is treated as accusative case in Eastern Armenian, while the ‘ə/n’
morpheme has been categorized as an enclitic definite marker. The reason that the
schwa is not treated as case morphology is due to the fact that, although in Eastern
Armenian stress usually falls on the last syllable of the morphophonological word, the
‘ə’ morpheme never carries the word-level stress. Hence, it seems that the morpheme
appearing on animate nouns is part of the word thus receiving word stress: *dzi-án*
(horse-ACC), *Ara-ín* (Ara-ACC), *mart'-ún* (man-ACC). On the other hand, the schwa
morpheme and its /n/ allomorph are encliticized onto the word: *gír'k'-ə* (book-AFF),

hanrapetut'yún-ə (republic-AFF), *katú-n* (cat-AFF).

In this paper, I have shown that both animate accusative case (*in* and its variants) and the ‘ə/n’ affix display identical properties in terms of marking specificity on object nouns in Eastern Armenian. The similar behavior of both the ‘in’ morpheme and the ‘ə’ or ‘n’ suffix in Eastern Armenian strongly suggests that the two morphemes are to be treated as overt direct object markers. Furthermore, the lack of word-level stress on the ‘ə’ can easily be explained by the morphophonological properties of Armenian. Recall that if a word ends in a vowel, the ‘n’ morpheme is used on specific objects (32). Vaux (1998) has argued that the underlying form of the “definite determiner” is /n/ and the schwa is an epenthetic vowel inserted between two consonants; /n/ is then deleted if it is not followed by a vowel. Hence in (33a), /n/ is removed leaving only the schwa, while in (33b), /n/ is not deleted since it is followed by the vowel ‘e’.

(32) *dzu-n ker-a*

pro egg-ACC eat.AOR-1SG

‘I ate the egg.’

(33) a. *girk'-ə kart'ats-el em*

pro book-ACC read-PERF be-PRES/1SG

‘I have read the book.’

b. *t'ert'-ən el kart'ats-i*

pro newspaper-ACC also read-AOR-1SG

‘I also read the newspaper.’

Vaux’s analysis therefore suggests that the underlying form of the accusative case for inanimate direct objects is indeed /n/. I suggest that the insertion of the epenthetic vowel and *n*-deletion take place after word-level stress has applied at PF. Thus, the reason ‘ə’ never receives word-level stress is due to the fact that the underlying form of the accusative case is the consonant /n/ and word stress is always applied to the last vowel within the word prior to schwa-insertion. If this analysis is on the right track, there is no reason to treat the ‘ə’ or ‘n’ morpheme as distinct from the animate case morphemes.

In the next section, the relation between Eastern Armenian case-marking and VP aspect is investigated suggesting that, unlike Finnish, overt accusative case in Armenian does not correspond to aspectual interpretation of the predicate.

3.2 Specified Quantity in Eastern Armenian

One of the most common methods for distinguishing bounded and unbounded predicates is to combine the sentence with the temporal adverbials *in an hour* and *for an hour*. If a predicate is bounded, it will be felicitous when combined with *in an hour*. But since this adverbial requires that the event be terminated or bounded, it cannot occur with an unbounded predicate. On the other hand, *for an hour* is compatible with an unbounded aspect but not with a bounded one. We can apply a similar test to the sentences in Eastern Armenian in order to investigate the effect of the object type on the aspect of the predicate. Consider the example in (34) which contains a

definite direct object.

- (34) a. Sirun-ə xəndzor-ə mi ĵam-um ker-av
Sirun-NOM apple-ACC one hour-LOC eat-AOR/3SG
'Sirun ate the apple in an hour.'
- b. #Sirun-ə xəndzor-ə mi ĵam ker-av
Sirun-NOM apple-ACC one hour eat-AOR/3SG
'#Sirun ate the apple for an hour.'

The sentence *Sirun-ə xəndzor-ə ker-av* (Sirun ate the apple) is felicitous with the *in an hour* adverbial as shown in (34a). (34b), however, gives rise to a forced stretching of the event⁷. These readings suggest that the aspect of this sentence is bounded. In contrast, the example in (35) shows that the sentence *Sirun-ə xəndzor ker-av* (Sirun ate apples) is unbounded.⁸

- (35) a. ?*Sirun-ə mi ĵam-um xəndzor ker-av
Sirun-NOM one hour-LOC apple eat-AOR/3SG
'?*Sirun ate apples in an hour.'
- b. Sirun-ə mi ĵam xəndzor ker-av
Sirun-NOM one hour apple eat-AOR/3SG
'Sirun ate apples for an hour.'

At first sight, these results seem to suggest a correlation between overt case-marking and bounded VP aspect. But recall that Eastern Armenian has two types of quantified indefinites, which may appear with overt accusative case (specific reading)

or without any overt case morphology (nonspecific reading). The addition of the temporal adverbials to these two constructions shows that both sentences behave as bound predicates.

- (36) a. Sirun-ə mi hat xəndzɔr-ə mi ĵam-um ker-av
 Sirun-NOM one CL apple-ACC one hour-LOC eat-AOR/3SG
 ‘Sirun ate one of the apples in an hour.’
- b. #Sirun-ə mi hat xəndzɔr-ə mi ĵam ker-av
 Sirun-NOM one CL apple-ACC one hour eat-AOR/3SG
 ‘# Sirun ate one of the apples for an hour.’
- (37) a. Sirun-ə mi ĵam-um mi hat xəndzɔr ker-av
 Sirun-NOM one hour-LOC one CL apple eat-AOR/3SG
 ‘Sirun ate an apple in an hour.’
- b. #Sirun-ə mi ĵam mi hat xəndzɔr ker-av
 Sirun-NOM one hour one CL apple eat-AOR/3SG
 ‘# Sirun ate an apple for an hour.’

This is not surprising since, as discussed in Section 2, the boundedness of the VP is dependent on whether the object denotes a specified quantity. Given that both specific and nonspecific quantified indefinites in Armenian clearly represent a specified quantity, we would expect them to affect verb phrase aspect uniformly. These examples also show that the case on the objects or their specific/nonspecific interpretation do not seem to correspond to the aspectual properties of the predicate. The following sentences confirm this result.

- (38) a. lezvaban-ner-ə yerku šiš gini-n mi ĵam-um xəm-ets-in
 linguist-PL-NOM two bottle wine-ACC one hour-LOC drink-AOR-3PL
 ‘The linguists drank the two bottles of wine in an hour.’
 ‘The linguists drank two of the wine bottles in an hour.’
- b. #lezvaban-ner-ə yerku šiš gini-n mi ĵam xəm-ets-in
 linguist-PL-NOM two bottle wine-ACC one hour drink-AOR-3PL
 ‘# The linguists drank the two bottles of wine for an hour.’
 ‘# The linguists drank two of the wine bottles for an hour.’
- (39) a. lezvaban-ner-ə mi ĵam-um yerku šiš gini xəm-ets-in
 linguist-PL-NOM one hour-LOC two bottle wine drink-AOR-3PL
 ‘The linguists drank two bottles of wine in an hour.’
- b. #lezvaban-ner-ə mi ĵam yerku šiš gini xəm-ets-in
 linguist-PL-NOM one hour two bottle wine drink-AOR-3PL
 ‘# The linguists drank two bottles of wine for an hour.’

The object in (38) carries an accusative case whereas the object in (39) is bare. Both sentences are compatible with the *in an hour* adverbial, and they both give rise to a forced stretching with the *for an hour* adverb (i.e., the linguists were drinking two bottles of wine for the period of an hour). The main distinction between the two sentences is that the object in (38) refers to two specific bottles of wine (or definite ones as in *the two bottles of wine*) whereas (39) is about two nonspecific wine bottles.

It is not necessary that the wine be completely consumed under this interpretation. But as the examples below indicate, either quantified indefinite could be used in

a completed event (forced by the verb *verčatsnel* ‘finish’) with similar results. These data show that the presence or absence of case (and specific/nonspecific interpretation) does not correspond to completion or resultativity either.

- (40) a. Ara-n yerku hat garejur-ə mi ĵam-um xəm-ets
 Ara-NOM two CL beer-ACC one hour-LOC drink-AOR/3SG
 verč-a-ts-r-ets
 finish-INCH-CAUS-ASP-AOR/3SG
 ‘Ara drank up the two beers/two of the beers in an hour.’
- b. Ara-n mi ĵam-um yerku hat garejur xəm-ets
 Ara-NOM one hour-LOC two CL beer drink-AOR/3SG
 verč-a-ts-r-ets
 finish-INCH-CAUS-ASP-AOR/3SG
 ‘Ara drank up two beers in an hour.’

Based on these results, I conclude that case morphology does not correlate with aspect in Eastern Armenian. Instead, the aspectual interpretations obtained correspond to the object’s ‘quantitative determination’ following Kiparsky (1998) or \pm SQA (‘specified quantity of A’) according to Verkuyl (1993) as was discussed in Section 2.

4 Parallel Nominal and Verbal Domains

4.1 Functional Projections in DP

The data discussed in the previous sections have pointed to a connection between verbal aspect and the finite cardinality (\pm SQA) properties of the direct object. In Finnish and Scottish Gaelic the resulting (un)boundedness of the predicate is overtly marked through case on the direct object, whereas in Eastern Armenian this relation is not overtly observed. On the other hand, Eastern Armenian and a number of other languages such as Turkish, Hindi, Persian and Urdu, display a direct correspondence between specificity readings on the direct object and a v P-external position such as Agr_oP , a structural position above v P posited in Chomsky (1995) responsible for object-verb agreement and accusative case-checking. In fact, in Hindi the case on the specific object cooccurs with agreement on the verb (Mahajan 1990), suggesting a connection between nominal specificity and verbal agreement in these languages. In the rest of this section, I will show how a decomposed structure for the noun phrase can allow us to capture case morphology in the languages studied, as well as the observed correspondences between verbal and nominal features.

Distinguishing the two notions of [\pm SQA] and specificity is crucial in order to account for the distinct domains in which the cardinality of the NP and its specificity play a role, given that there seems to be a close relation between the cardinality of the NP (or \pm SQA) and aspect while specificity does not seem to contribute to any

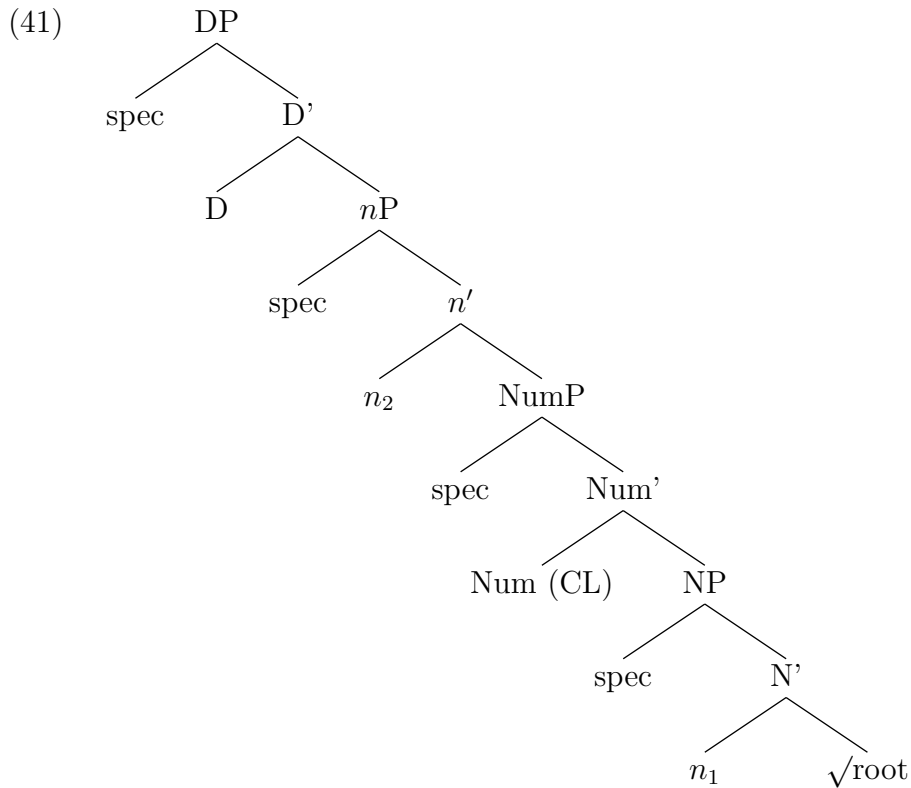
aspectual reading in the predicate. I therefore propose to separate the information provided by specificity and cardinality into distinct syntactic nodes within the noun phrase structure. This would allow us to capture the direct correlation between cardinality and verb phrase aspect as well as the close relation between nominal specificity and a higher argument projection within the extended verb phrase structure.

Much current research on nominal elements has, in fact, argued that the structure of the noun phrase should reflect the structure of the verb phrase. This approach has led to the introduction of several functional projections within the NP/DP providing a decomposed structure in which the various nominal elements are represented in distinct syntactic nodes (Abney 1987, Tang 1990, Valois 1991, Ritter 1992, Bhattacharya 1999, Borer 2000, among others). In addition, it has been argued that there is a direct correspondence between the functional elements in the Noun Phrase and Verb Phrase. Travis (1992), for instance, shows that the Number Phrase projection argued for in Ritter (1992) behaves similarly to Aspect Phrase. Based on a semantic correlation between Progressive aspect and plural number in English and morphological similarities marking aspect and number in Tagalog, Travis (1992) argues for the correspondence of the Number and Aspect functional heads and provides two parallel verbal and nominal structures in which NumP corresponds to AspP. Travis's analysis confirms the Eastern Armenian and Finnish data discussed in this chapter which pointed to a close relation between cardinality of the argument NP and aspect of the verb phrase.

In addition, the mass/count distinction in nominals discussed in Chierchia (1998) has been correlated with the atelicity/telicity distinction (i.e., the boundedness properties) of verbs. Borer (2001) argues that all nominals are listed as mass in the lexicon (her Encyclopedia) and they only receive a count interpretation in the context of a ‘count’ structure. Hence, unless provided with more structure, the default interpretation of N^o is mass. Likewise, the default interpretation of a V^o is atelic or unbounded and can become telic or bounded only when it appears in the context of an aspectual structure. Thus, all these approaches draw parallels between a Number projection on the nominal structure and an Asp head in the verbal domain.

Specificity, on the other hand, is usually associated with the DP projection. A definite argument is interpreted as specific by virtue of appearing with an overt determiner in D. Bare indefinites and mass nouns lack a determiner and are considered non-specific NPs. Quantified indefinites that do not have a specific reading in Armenian would also be analyzed as lacking the D projection. However, quantified indefinites in these languages may also carry a specific interpretation as shown for Eastern Armenian in Section 3.1. I suggest that, in these cases, the specific reading is obtained when the DP projection is headed by a null determiner (see Karimi 1996 and Ghomeshi 2001 for similar proposals positing a null determiner head in Persian). No D head is projected, however, in the case of non-specific quantified indefinites.

Based on these conclusions and following Travis (1992), I propose the syntactic structure for the noun phrase illustrated in (41).



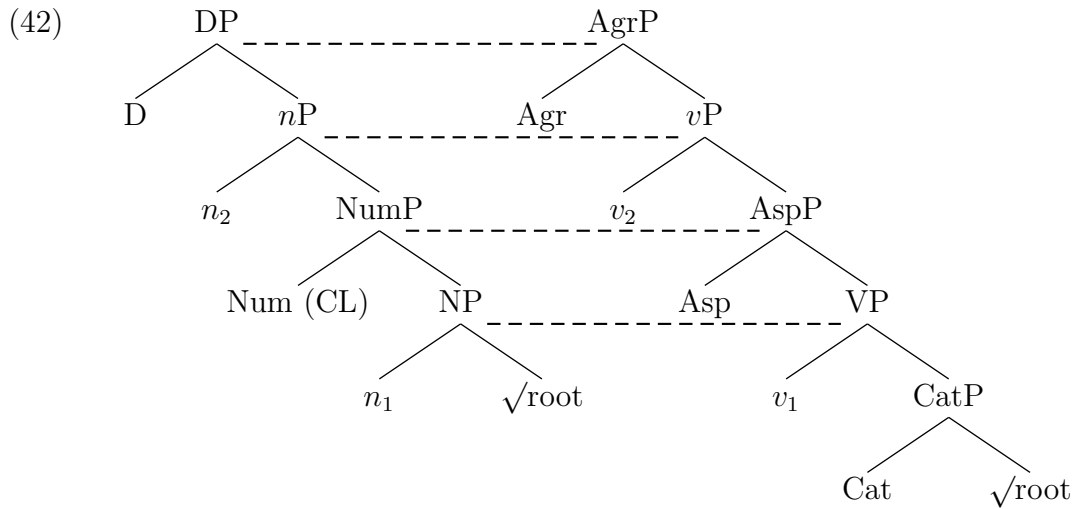
The information about the cardinality of the nominal phrase is expressed in the NumP projection, where Num stands for *Number* and CL for *Classifier*. When NumP is projected, the noun phrase receives a specified quantity or +SQA interpretation. Note that in this configuration, the classifier does not project a separate head since in Eastern Armenian and Persian the classifier is optional with count nouns and can only appear if a number is already present. Similarly, Bhattacharya (1999) argues for a fused head in Bangla consisting of a number or quantifier, marking cardinality, and the classifier.

The *nP* projection has been proposed by several researchers (Valois 1996, Bhattacharya 1999 for Bangla possessors, Travis 1992 for gerundive *Poss-ing* structures)

and parallels the *v*P-shell configuration used in recent syntactic approaches. The noun phrase is thus formed when a root element combines with the functional nominal features represented in the structure in (41).

The resulting noun phrase configuration parallels the decomposed structure of the verbal predicate and its nodes correspond to the features represented in the *v*P structure. Yet, the connection between the nominal features and the verbal domain has always been established through a Spec-Head relation where the whole noun phrase appears in the specifier position of the relevant verbal head, and the inner nodes or features of the NP play absolutely no role. For instance, to capture the direct correlation between aspectual boundedness of the *v*P and the cardinality or ‘quantitative specification’ of the NP, a number of analyses have been proposed establishing a Spec-Head relation between the direct object and the Asp head of the verb phrase. Hence, Borer (1994) proposes that a bounded aspect obtains when a quantitatively specific noun phrase appears in the specifier position of Aspect Phrase. The aspect of the verbal event is “delimited” or “measured out” when the [Spec, AspP] position is occupied and the boundedness information in the verb phrase is then marked in Aspect Phrase. Similarly, Mahajan (1990) captures the Hindi data by proposing that accusative case obtains when the specific object DP moves to the [Spec, Agr_oP] position, thus establishing a Spec-Head relation with the Agr_oP projection. None of these approaches, however, make explicit use of the internal features of the NP in order to establish the Spec-Head relation with the relevant verbal head.

In this paper, I argue that in order to capture the close relations between the nominal and verbal features in establishing case relations in languages such as Eastern Armenian and Finnish, the relevant corresponding features of the two nominal and verbal domains are to appear in a direct one-to-one relationship as schematized in (42).



In current approaches, when a Spec-Head relation is established between a noun phrase and a verbal head, it is assumed that only the relevant features of the nominal and verbal elements are checked against each other. The configuration in (42), however, allows us to explicitly capture the direct correspondences between parallel features in the noun phrase and verb phrase. In particular, we are now able to represent the parallel contributions of nominal and verbal features in the formation of the correspondences on verb phrase aspect and object-verb agreement. Hence, in this structure, the notion of ‘boundedness’ is represented by Number in the nominal domain and by Aspect in the verbal component, and the notion of ‘specificity’ is rep-

resented by the Determiner projection in the nominal structure and by the Agreement phrase in the verbal domain.

The parallel architecture of nominal and verbal domains proposed here is reminiscent of the computational system developed in Vergnaud (2000) and Vergnaud and Zubizarreta (2001), which is presented in the following section.

4.2 Primitive Assemblies of Constituent Structure

In the framework developed in Vergnaud and Zubizarreta (2001), the syntactic structure consists of right-branching trees which consist of a fixed set of primitive features as shown in (43).

$$(43) \quad F_n \ F_{n-1} \ \dots \ F_2 \ F_1$$

These features are the same for all categories. Hence, the same feature underlies the notion that represents ‘mass/count’ for nominal categories as well as the notion denoting ‘aspect’ for verbal categories. Similarly, the abstract feature of ‘instantiation’ (what I referred to as ‘specificity’ in the previous section) is manifested by D in the nominal domain and by T for the verbal category. The hypothesis that all categories have the same underlying features is referred to as the Extended X-bar Principle and is described as below in Vergnaud and Zubizarreta (2001):

$$(44) \quad \textit{Extended X-bar Principle:}$$

Every cognitive (semantic) category is analyzed in terms of a fixed set of features common to all categories.

The features in (43) form an ordered list of primitive syntactic elements where F_1 is the head denoting the *root*, F_2 is the feature representing *categories* such as Noun or Verb, F_3 is the *aspect* or *classifier* feature, while F_n is manifested as determiner or tense and denotes the notion of *instantiation*.

These uniformly-branching trees constitute parallel primitive assemblies. The goal of the computational system is to reduce the abstract features of the nominal and verbal assemblies to single strings by projecting them into a single linear axis. This is accomplished when a matching relation is established between the two uni-branching trees by forming a one-to-one link between corresponding features. The grammatical relation *specifier-of* arises from the association of the two equivalent primitive assemblies. In this configuration, the abstract feature for ‘mass/count’ in the nominal assembly is associated with the ‘aspect’ feature in a matching verbal assembly. This specifier-of relation is schematized in the feature pairs in (45):

$$(45) \quad ([F_3 \ F_2 \ F_1]_N, [F_3 \ F_2 \ F_1]_V) = (F_{3N}, F_{3V}) (F_{2N}, F_{2V}) (F_{1N}, F_{1V})$$

In the formal framework in Vergnaud and Zubizarreta (2001), Agreement morphology is then an instance of a specifier-of relation realized as the matching of equivalent features across the N and V categories.

The specifier-of relation is one of the operations available to two parallel uni-branching trees and is defined by the *distributive product* in (46).

$$(46) \quad [F_1 \ \dots \ F_i \ \dots \ F_n] \otimes [G_1 \ \dots \ G_i \ \dots \ G_n] \stackrel{def}{=} F_i \approx G_i, F_i \text{ precedes } G_{i+1}, i=1, \dots, n-1$$

In addition, two primitive uni-branching assemblies may also combine to form an *extended assembly* as illustrated in (47). In this operation, a primitive assembly combines with another by identifying the tail of one assembly with the head of the other.

$$(47) \quad [F_1 F_2 \dots F_i \dots F_{n-1} F_n] * [G_1 G_2 \dots G_i \dots G_{n-1} G_n] = [F_1 \dots F_{n-1} H G_2 \dots G_n] \text{ where } H=F_n=G_1$$

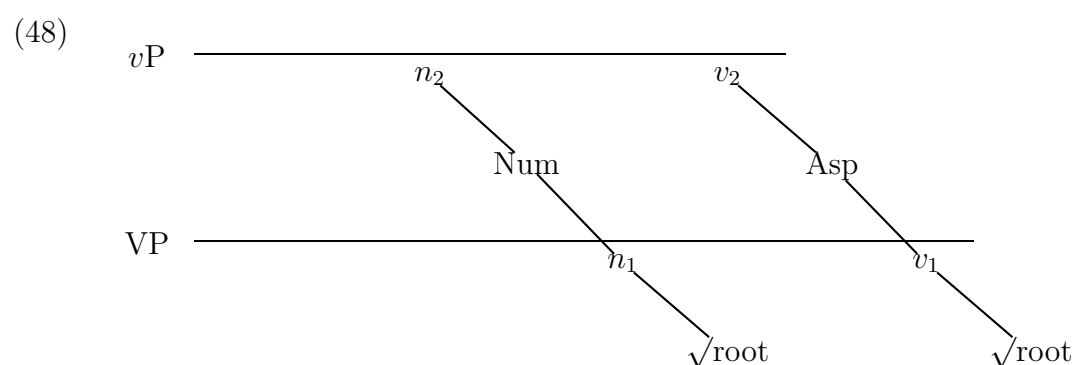
This operation is used, for instance, to compose the verbal constituent structure by combining the verbal category with the complementizer category (or ‘proposition’). Similarly, a noun category can combine with a pronominal category to provide the ‘point of view’. The node at which the two primitive assemblies combine creates a boundary condition for the syntactic code.

In the next section, I will provide an analysis for the relation between object case and semantic interpretation in Armenian and Finnish by adopting a syntactic structure consisting of parallel primitive assemblies as in the framework of Vergnaud and Zubizarreta (2001).

5 Checking Relations and Structural Case

Adopting Vergnaud and Zubizarreta (2001), I suggest that nominal and verbal predicates are composed of a fixed set of primitive elements consisting of a root, a category feature, and features denoting *boundedness* and *instantiation*. These features give rise

to slightly different interpretations depending on the domain in which they are realized. Hence, the feature representing boundedness corresponds to aspect in the temporal or verbal domain and to the classifier or count system in the physical or nominal domain. The suggested uni-branching configurations are illustrated in (48), where n represents an entity and v denotes an event.



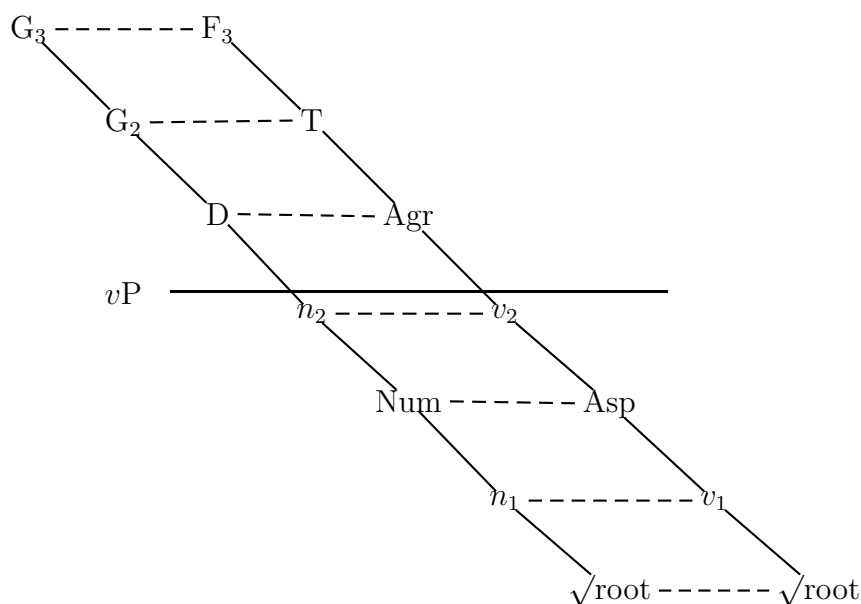
According to this proposal, the mass noun would consist of a root element, similar to the notion of root in Distributed Morphology (Halle and Marantz 1993), combined with the categorial feature n_1 . This level of the structure corresponds to the bare noun in Eastern Armenian. If the nominal structure combines with the Num feature specifying its cardinality, the noun formed has a ‘count’ reading. A parallel structure is formed in the verbal domain as shown. I claim that the noun phrase is interpreted as an argument of the verb when the primitive elements in the nominal structure form a specifier-of relation with their verbal counterparts, as discussed in Section 4.2. The resulting interpretation and case-marking depend on the level in the structure at which the checking relation is formed.

Recall from the discussion of Eastern Armenian that a bare noun argument, which lacks specificity and cardinality features, needs to remain low in the verb phrase. These constructions give rise to unbounded verb phrase aspect. In these instances, the $\text{root}+n_1$ configuration in the nominal domain enters into a specifier-of relation with the corresponding verbal elements. Since the n_1-v_1 relation is the highest checking level in the construction, aspect remains unbounded and the bare noun appears low within the vP structure. In the case of quantified indefinites, however, the highest specifier-of relation is formed between the nodes Num and Asp. Note that the presence of the Num feature in the nominal domain modifies the mass interpretation and forms a count noun argument or a nominal with a specified cardinality. The presence of the Aspect node on the verbal domain provides what I have referred to as ‘result-orientedness’ of the event. It is only when the two corresponding nodes enter into a checking relation, thus merging the temporal and physical worlds, that a bounded verb phrase aspect is obtained. In other words, by the establishment of the specifier-of relation between Num and Asp nodes, the physical domain delimits the temporal domain by providing a final endpoint or a measure for the event (cf. Verkuyl 1993).

Both uni-branching assemblies may undergo a ‘direct product’ in the sense of Vergnaud and Zubizarreta (2001) to form an extended assembly. I claim that the domain corresponding to tense, agreement and higher aspectual features is combined with the vP domain through this operation. This extended assembly provides the temporal instantiation to the underlying event. Similarly, the nominal domain can

be extended to include the physical instantiation of the entity (i.e., specificity) within the structure as illustrated in (49)⁹.

(49)



When the internal argument projects a DP, it receives a specific interpretation and the head D enters into a relation with the Agr node. Note that in the framework proposed by Vergnaud and Zubizarreta (2001), the ‘instantiation’ feature is represented by Determiner (D) on the nominal structure and by Tense (T) rather than Agr in the verbal uni-branching tree. However, the data discussed here suggest that specificity features of the noun correlate with verbal agreement features. This is overtly marked by agreement on the verb in Hindi in the presence of the specific object. Based on data from argument alternations, valency, and attachment of modifiers, Larson (2003) has also proposed that, unlike the common view, DP is not analogous to TP but rather corresponds to the VP structure. On the other hand, Sportiche (1999) argues that

the D head is external to the domain of the VP. These results may then suggest that the notion of ‘instantiation’ which corresponds to D (the marker of specificity and definiteness) in the nominal domain should correspond to a verbal node that appears outside the VP, yet is distinct from T. Given the data from Eastern Armenian, Persian, Turkish and Hindi, I propose that Agr (a node responsible for instantiating verbal agreement) is in fact the verbal counterpart of nominal D.¹⁰ Furthermore, the fact that the specific objects in Eastern Armenian are interpreted as external to the *vP* domain is due to the fact that the highest level at which a checking relation is formed, i.e., between D and Agr, occurs outside of the *vP*.¹¹

I propose that case-assignment in languages such as Eastern Armenian and Finnish is simply the overt realization of a specifier-of relation between nominal and verbal domains. In Finnish, accusative case is expressed on the object as a result of the checking correspondence between Num and Asp nodes. It is, however, the specifier-of relation between D and Agr features that is expressed as an accusative case on the noun in Eastern Armenian (and as overt object agreement on the verb in Hindi)¹². In other words, the node at which case is realized is treated as a parameter of the language. The proposed framework captures the correlation between cardinality and aspect, it accounts for case-marking in Finnish (which relates to the feature of *boundedness*) and object case in Eastern Armenian (which relates to the notion of *instantiation*). This model thus explains the close relation of structure and interpretation in the noun phrase by establishing explicit correspondences with the verbal predicate.

6 Subjects

The subject in Eastern Armenian can also be marked with ‘ə’ or ‘n’ as illustrated below:

- (50) a. Aram-ə senyak-um nəst-atz namak er gər-um
Aram-NOM room-LOC sit-PART letter was write-IMPF
‘Aram was sitting in the room, writing a letter.’
(Lit: ‘Aram, sitting in the room, was writing a letter.’)
- b. harevan-ner-ə mer hamar xmičk en ber-el
neighbor-PL-NOM our for drink are bring-PERF
‘The neighbors have brought us drinks.’
- c. katu-n norits muk e vors-um
cat-NOM again mouse is hunt-IMPF
‘The cat is hunting mice again.’

The fact that the ‘ə/n’ allomorph can appear on subjects may seem to be strong evidence against the treatment of these morphemes as accusative case markers. However, a closer investigation of subjects in Eastern Armenian shows that overt morphology corresponds with specificity interpretation on subjects of unaccusative verbs but not of transitives. In addition, while subjects of unaccusatives may occupy a position within the *v*P structure on a par with the direct object, transitive subjects are external to the *v*P domain and display distinct case-assignment possibilities. The data in fact are in accordance with a structural analysis of the overt morphology

as has been proposed in this paper, since there is a direct correlation between the structural position occupied by the argument and the manifestation of ‘ə/n’ on the subject.

In her study of specificity in Standard Western Armenian, Sigler (1997) noticed that with verbs that are arguably unaccusative or passive, the presence of overt morphology correlates with specificity. This is illustrated for Eastern Armenian in the contrast between (51) and (52). In (51), the subject appears without an overt morpheme and is interpreted as nonspecific. In (52), however, the overt morphology on the subject correlates with a specific reading.¹³

(51) a. mart' e gal-is
 man is come-IMPF
 ‘People are coming/Someone is coming.’

b. bak-um gulpa-ner en čor-an-um
 yard-LOC sock-PL are dry-INCH-PERF
 ‘(Some) socks are drying in the yard.’

(52) a. mart'-ə gal-is e
 man-NOM come-IMPF is
 ‘The man is coming.’

‘Her husband is coming.’

b. mi gulpa-n čor-ats-el e
 one sock-NOM dry-AOR-PERF is

‘One (specific) sock has dried.’

‘One of the socks has dried.’

The presence of overt morphology also correlates with the structural position of the subject. The subjects in (51) remain within the verb phrase and receive the main phrasal stress as indicated by the *be* auxiliary enclitic which always appears on the constituent carrying the most prominent stress in the clause (Tamrazian 1994). In addition, these subjects cannot be separated from the verb by intervening adverbial elements (53a). The subjects in (52), on the other hand, do not receive main stress and intervening adverbials are allowed (53b).

- (53) a. ?*mart' e havanabar gal-u
man is probably come-FUT
‘*Someone will probably come.’
- b. mart'-ə havanabar gal-u e
man-NOM probably come-FUT is
‘The man is probably coming.’
‘Her husband is probably coming.’

Thus, subjects of unaccusatives and passives that do not receive overt morphology occupy a position within the verb phrase and are interpreted as nonspecific. If the subject appears with overt morphology, however, it is specific and is external to the *vP* domain. These properties parallel those of the direct object discussed in previous sections, suggesting that the D head of specific unaccusative subjects establishes a

relation with the Agr head of the verbal domain.¹⁴ The relation is then marked on the noun as overt morphology. This parallel behavior is not surprising since subjects of unaccusatives and direct objects both occupy the internal argument position (cf. Perlmutter 1978, Williams 1981).

Additional support for the D-Agr relation can be found in the agreement properties of unaccusative and passive subjects. If the noun phrase lacks overt morphology, subject agreement is optional for unaccusative or passive verbs as shown in the following examples.

- (54) a. aysor baqdad-um hing hat zinvor e mer-el
 today Baghdad-LOC five CL soldier is die-PERF
 ‘Five soldiers have died in Baghdad today.’
- b. vaxenalu dzayn-er e ləs-v-um
 frightening voice-PL is hear-PASS-IMPF
 ‘I hear frightening voices’ (Lit: Frightening voices is being heard.)

When the subject is specific and carries overt case, the agreement is obligatory.

- (55) a. aysor baqdad-um hing hat zinvor-ner-ə mer-el en/*e
 today Baghdad-LOC five CL soldier-PL-NOM die-PERF are/*is
 ‘The five soldiers have died in Baghdad today.’
 ‘Five of the soldiers have died in Baghdad today.’
- b. norits ayt vaxenalu dzayn-er-ə ləs-v-um en/*e
 again that frightening voice-PL-NOM hear-PASS-IMPF are/*is

‘I hear those frightening voices again.’ (Lit: Those frightening voices are being heard again.)

Subjects of transitive or unergative verbs, which are considered external arguments, differ from subjects of unaccusatives and passives in several ways. Subjects of transitives and unergatives cannot appear as bare arguments (56), they do not receive the phrasal stress as shown by the positioning of the auxiliary clitic (57), and subject-verb agreement is always obligatory in these cases.

- (56) a. *mart' e tzitzaq-um
man is laugh-IMPF
‘*A man/Someone is laughing.’
- b. *yerexa mijat e span-um p'oqots-um
child insect is kill-IMPF street-LOC
‘*A kid is killing insects in the street.’
- (57) a. mart'-ə tzitzaq-um e
man-NOM laugh-IMPF is
‘The man is laughing.’
- b. yerexa-n mijat e span-um p'oqots-um
child-NOM insect is kill-IMPF street-LOC
‘The kid is killing insects in the street.’

To refer to a nonspecific agent, the quantified indefinite is used which can also refer to a specific nominal. But crucially, unlike the subject of unaccusatives and passives,

the quantified indefinite noun phrase used as a transitive subject never carries overt morphology, showing that the presence of ‘ə’ or ‘n’ does not correlate with specificity in this instance. The subjects in (58) are ambiguous between a nonspecific and a specific reading. Note that these caseless quantified indefinites, unlike the quantified indefinites used in object or unaccusative subject capacity, occupy a position outside of the *v*P domain since they do not receive the main clausal stress and can be separated from the verb.

- (58) a. sərah-um mi mart’ bartsər dzayn-ov tzitzaq-um er
 hall-LOC one man loud voice-INST laugh-IMPF was
 ‘In the hall, someone/a man was laughing loudly.’
- b. mi bəjışk indz as-ets vor hima karoq em tun gən-al
 one doctor me say-AOR that now able am home go-INF
 ‘Some/A doctor told me that I can go home now.’

This preliminary study of subjects in Eastern Armenian seems to provide further support for the main argument put forth in this paper, namely that overt morphology on the nominal argument corresponds to a structural relation established between the verbal and nominal domains. The data presented here provide evidence for the distinct positions of internal and external arguments and their correlation with overt case-marking, showing that subject and object internal arguments display parallel behavior and contrast with the properties of the external argument. Thus in Eastern Armenian, overt morphology appears on the internal argument DP which has

established a structural correspondence with the Agr node in the verbal domain. The examination of the external argument further showed that the ‘ə’ or ‘n’ morpheme is not simply a marker of specificity in Eastern Armenian and thus can be treated as a case marker.¹⁵ Although the properties of the subject in this language need to be investigated in depth in order to determine the position at which nominative case is assigned and its semantic contribution to the external argument, the facts presented in this section seem to confirm the claim that overt case morphology is the manifestation of a structural relation. More specifically, case is the overt realization of the correspondence established between the verbal and nominal domains in the syntax.

In the framework presented in this paper, structural case is not treated as an uninterpretable feature of a noun phrase that needs to be checked by LF; nor is it represented as a functional projection in the syntax. Instead, case appears as the result of a checking relation between nominal and verbal structures. Hence, case-assignment and also verbal agreement are simply the overt realization of a checking mechanism between the verbal and nominal domains, and are not listed with the lexical entry. The position that a case-marked object occupies or its correlation with certain semantic readings is a by-product of the checking mechanism and is not a property of the case morpheme. Furthermore, I suggest that languages can be distinguished based on the structural position at which accusative case (or marked object case) is realized. In Finnish and Scottish Gaelic, the projection node at which the checking relation is overtly realized on the argument is the node corresponding to

the feature ‘boundedness’, hence the close relation between case, cardinality (Num) and Aspect (Asp) observed in these languages. In Eastern Armenian, Persian, Turkish and other languages of this group, the checking relation is realized on the object at the higher node denoting ‘instantiation’ (D/Agr) resulting in a correlation between case and specificity and in the case of Hindi, with verbal agreement as well. I assume that certain languages have a default object case which is realized at the level at which n_1-v_1 form a checking relation and the default case in Finnish is the Partitive. Hence, a direct object in this language receives the partitive case-marking unless the nominal Num and verbal Asp nodes enter into a specifier-of relation.

In addition, the examination of nominative case-marking on subjects in Eastern Armenian showed that the presence of overt case on the internal argument correlates with specificity, while overt case on the external argument does not exhibit such a relation. These results suggest that (nominative) case does not always correspond to the same semantic role on the noun phrase but rather depends on the configurational relation between the verbal and nominal domains.

This approach then predicts that case-assignment is a post-syntactic phenomenon since overt case is realized after all syntactic projections and checking relations have been formed. Object case morphology is overtly expressed in languages based on the resulting syntactic configurations and on the correspondences composed between parallel primitive assemblies.

7 Conclusion

The investigation of case-marking in Eastern Armenian and Finnish led to the formalization of a correspondence of universal primitive features that are shared by both the nominal and verbal domains. Hence, aspect and cardinality are two different facets of the same feature, namely *boundedness*. Similarly, the feature *instantiation* is interpreted as agreement on the verbal side and as specificity in the nominal domain. It was argued that these parallel features could not be easily accounted for within the current framework of tree structures and spec-head relations, and it was therefore suggested that a natural extension for the generalizations observed was to adopt a framework in which the corresponding nominal and verbal features are represented as parallel configurations. I presented the framework developed in Vergnaud and Zubizarreta (2001) whereby predicate composition takes place by the various combinations of Primitive Assemblies and by checking relations formed between parallel verbal and nominal domains. It was proposed that the close connection between case-marking and semantic interpretation can be derived from the syntactic configuration resulting from the relations formed between corresponding nodes within these parallel domains.

The framework provided allows us to directly capture the one-to-one relation of corresponding nominal and verbal features observed in the literature. This analysis further suggests that case-marking in the languages discussed is dependent on a language-specific parameter that overtly manifests either the *boundedness* feature

(e.g., Finnish and Scottish Gaelic) or the *instantiation* feature (e.g., Eastern Armenian, Persian, Turkish, Urdu or Hindi). How this parameter is determined remains an open question.

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Notes

¹Kiparsky refers to these verbs as *intrinsically bounded* verbs.

²For further details on Finnish verb phrase aspect and its correlation with case-marking, the reader is referred to Kiparsky (1998).

³This paper is concerned mainly with the Armenian dialect spoken in Iran. Most of the discussion, however, also applies to Standard Eastern Armenian.

⁴The overt morphemes ‘ə’ and ‘n’ also occur on subject NPs and have sometimes been treated as the nominative case in these instances. Based on Standard Western Armenian data, Sigler (1997) has argued that their presence on subjects also correlates

with the specificity of the noun phrase, and therefore treats ‘ə’ and ‘n’ as specificity markers. In Section 6 I will show that this generalization does not hold for Eastern Armenian.

⁵The suffix ‘-an’ is one of the forms used in Eastern Armenian for animate objects, while ‘ə’ or ‘n’ appear on inanimate direct objects.

⁶The plural marker on the direct objects in the examples in (27) is obligatory with specific readings but is usually omitted in the nonspecific interpretations of the object. A similar phenomenon exists in Persian (Karimi 1989, Ghomeshi 2001); also see Sigler (1997) for a discussion of plural-marking and specificity in Western Armenian.

⁷Following Verkuyl (1993), I use # to mark a stretched or iterative interpretation.

⁸Note that the judgment on this sentence refers to a bare plural reading on the object since (35a) would be quite acceptable if the bare indefinite *xəndzor* is interpreted as ‘an apple’ (which denotes a specified quantity) in this context. If the reading of the bare plural ‘apples’ is forced, however, the distinction in judgment between (35a) and (35b) becomes more significant as shown. When the object is a mass noun, the judgment in the presence of an ‘in an hour’ adverbial is more clear: **katun mi ĵamum kat’ xəmets* ‘The cat drank milk in an hour’.

⁹I will leave the higher nodes represented by G_2 , G_3 and F_3 undefined since they do not enter the discussion in this paper.

¹⁰Another possibility is that *Instantiation* could be licensed for the internal argument when nominal D and verbal Agr establish a relation, but it is licensed for

the external argument at a higher node in the verbal structure such as T. This is only speculation at this point but it may explain why several verbal levels have been equated with nominal D in the literature.

¹¹For now, I assume following Travis (1992) and others that n_2 and v_2 will form a relation as well, but I do not have any evidence for such a relation in the data discussed here.

¹²Why overt morphology is manifested in some languages on the nominal (e.g., object case in Eastern Armenian and Finnish) rather than on the verb (e.g., agreement in Hindi or aspect in Slavic languages) remains an open question.

¹³Note that for subjects there is no animacy distinction; both animate and inanimate subjects receive the \varnothing/n morpheme.

¹⁴Whether the specific subject DP further moves to the T level is not discussed here and requires further investigation. One possible analysis would be that nominal D forms a relation with Agr_s rather than Agr_o .

¹⁵Interestingly, Kiparsky (1998) points out that partitive case in Finnish also appears on subjects. In these instances, however, partitive case does not correspond to the aspectual behavior of the verb phrase or clause but instead only marks the nominal properties of boundedness; hence bare plurals and mass nouns receive partitive case in subject position and cardinally marked (+SQA) subjects receive nominative case. He also notes that the partitive can only appear on subjects of *presentational* verbs (e.g., *kuolla* ‘die’, *ilmaantua* ‘appear’, *kasvaa* ‘grow’, *kukkia* ‘blossom’); all other

verb categories require a nominative case on the subject.

8 Bibliography

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