

Editorial

The editors are pleased to welcome you to second issue of the sixth volume of FULL, an open access international journal providing a platform for linguistic research on modern and older Finno-Ugric or other Uralic languages and dialects. FULL publishes comparative research as well as research on single languages, including comparison of just Uralic languages or comparison across family lines. We encourage both formal linguistic submissions and empirically oriented contributions.

The first article in this issue is by Pauli Brattico, who writes “I will attempt to present a systematic and comprehensive typology of control relations and controlled null subjects in Finnish. The descriptive theory explains how the two types of null subjects are licensed, what their control properties are, and what kinds of null subjects there are in this language. All control constructions in Finnish, both finite and non-finite, are discussed, categorized and explained by a few empirical generalizations.” One of the claims is that morphological agreement plays an even more crucial role in the system than what is widely assumed in current syntactic theory.

The second paper is by Judit Farkas, Veronika Szabó and Gábor Alberti. Their study explores the scope interpretation of noun phrase internal and noun phrase external universally quantified dependents of the noun head in Hungarian, including the notorious extracted possessors. While the scope of the major constituents of the sentence is a well-studied area of the Hungarian syntax–semantics interface, scope-taking by dependents of nouns has not been investigated in detail. In order to explain the observed range of noun phrase internal scope options, the authors propose a syntactic representation that integrates essentially morphology-based approaches to the Hungarian noun phrase with a cartographic split DP analysis. External-scope taking is accounted for by a Selkirk–Höhle-style mechanism of feature percolation and it is argued that certain discontinuous noun phrases are derived by remnant movement.

The third paper, by David Ogren, is on aspect and object case variation in Estonian *da*-infinitives. The reason for the focus on *da*-infinitives is that the notorious variation between the total and partial object case is less consistent there than in finite clauses. On the basis of corpus data, the variation between the object cases is depicted “as a case of competing motivations, where some elements of the sentence support the use of the total object and others the use of the partial object”. The notion that partitive is the default case is shown to play an important role.

In addition the issue includes a review by Tamás Halm of the book titled *Approaches to Hungarian* Vol. 15. *Papers from the 2015 Leiden Conference*, edited by Harry van der Hulst and Anikó Lipták and published by John Benjamins.

We take this opportunity to thank the anonymous reviewers who generously lent their time and expertise to FULL.

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The Editors

Control and Null Subjects Are Governed by Morphosyntax in Finnish*

Pauli Brattico

This article provides a typology of null subjects (e.g. *pro*, PRO) and their control in Finnish. It argues that there are two syntactic environments licensing controlled null pronouns in this language. One environment, licensing an element closely resembling or identical with *pro*, is characterized by morphosyntactic activity, while the other exhibits the exact opposite profile and licenses PRO. Control properties of the two types of null subjects differ from each other and are shown to depend on three notions: c-command, locality and discourse. An analysis is provided that explains why null subjects are generated in the presence (e.g. *pro*) and absence (e.g. PRO) of morphosyntax, and why these elements exhibit the control properties that they do. According to this analysis, both *pro* and PRO are real pronominal elements, bare phi-sets, which contain uninterpretable features that trigger control relations at LF. Morphosyntax (Agree) is seen as a mechanism that renders arguments visible at PF and LF, while discourse-interpreted elements are exempted from this restriction.

Keywords: *null subjects; control; finite control; Finnish; obligatory control; pro-drop; partial pro-drop*

1 Introduction

Third person null pronoun subjects must be supplied with an antecedent in the Finnish finite clause (Heinonen, 1995, Vainikka and Levy 1999) (1).¹

- (1) a. * *Sai ylennyksen.* / *Sain ylennyksen.*
got.3SG promotion got.1SG promotion
'He got a promotion.' 'I got a promotion.'
- b. *Pekka₁ väitti että* ₁ *sai ylennyksen.*
Pekka.NOM claimed that got.3SG promotion
'Pekka claimed that he (=Pekka) got promotion.'

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¹ Abbreviations and terminological conventions: 0 = no agreement or default phi-features; 3sg = phi-features such as third person singular (etc.); A = A-infinitival; ACC = accusative case (all forms that are connected with completed aspect); FOC = the focus particle *-han-* and/or focus interpretation; E = E-infinitival or E-adverbial ('by doing something'); EPP = Extended Projection Principle; ESSA = ESSA-adverbial (close English translation is 'while doing something'); GEN = genitive case; IMPASS = impersonal passive form, but both active and passive voice; KSE = KSE-adverbial ('in order to do something'); MA = MA-infinitival/adverbial, several forms; NOM = nominative case; PAR = partitive case, which is the default complement case in Finnish; phi-features = features such as number and person; *pro* = Type I null subject; PRO = the Type II null subject in obligatory control constructions; Q = yes/no question particle *-ko-*; TUA = TUA-adverbial ('after doing something'); VA = VA-infinitival. Some studies are referred to by their acronyms: H&B = the two-part study of Huhmarniemi & Brattico (2015) and Brattico & Huhmarniemi (2016); H&N = Holmberg & Nikanne (2002).

The relation between the null pronoun and its antecedent in (1b) is often called *finite control* (for finite control in other languages, see Landau 2004). Non-finite (obligatory) control, in turn, is exhibited by examples such as (2).

- (2) *Pekka*₁ *halusi* ___₁ *lähteä*.
 Pekka.NOM wanted to.leave
 ‘Pekka wanted to leave.’

In the example (2), the thematic subject of the non-finite verb *lähteä* ‘to leave’ must be the same as the matrix subject ‘Pekka’, hence here too the matrix subject serves as the antecedent for the embedded null subject.

Finnish control is poorly understood. Vainikka & Levy (1999) report that in the finite scenario (1) the antecedent must c-command the null pronoun. They also claim that the antecedent must “occur in the matrix clause” (p. 648). No locality requirements are reported in this article. Non-local control, for example the one shown in (3), which is my example, is possible.

- (3) *Pekka*₁ *käski Merjan*₂ *sanoa* *Jukalle*₃, *ettei* ____{1/2/3}
 Pekka asked Merja.ACC to.say to.Jukka that.not
tule *tapaamiseen*.
 come.3SG meeting
 ‘Pekka asked Merja to tell Jukka that s/he is not coming to the meeting.’

Any of the three possible arguments can serve as an antecedent for the embedded finite null subject (see also Holmberg 2005: note 4, p. 540, Heinonen 1995 for similar examples). The antecedent selection is subject to pragmatic factors. The default reading is the one in which the main clause subject serves as the antecedent. The embedded subject ‘Merja’ can serve as an antecedent if, for example, Pekka is asking Merja to inform/reveal to Jukka that she will not come. The most unlikely reading is one where ‘Jukka’ is the antecedent, but this too is possible if, for example, Pekka is trying to prevent Jukka to come to the meeting and is asking Merja to instruct Jukka. These pragmatic choices can be foregrounded by using different verbs. For example, use of the conditional verb *tulisi* ‘come.COND’ inside the embedded clause will strengthen the third reading, in which Jukka is the antecedent. Using the verb *tunnustaa* ‘confess’ or *myöntää* ‘acknowledge’ instead of *sanoa* ‘say’ will bring the second readings into focus, in which Merja is the antecedent. See Gutman (2004) for more examples of situations in which pragmatic factors enter to the selection of antecedent in Finnish finite control.

Rodrigues (2004) claims that only the closest possible antecedent can be selected. He cites one example (4) (ex. 43c in the original) in support of the locality claim:

- (4) *Jukka*₁ *sanoi että* *Pekka*₂ *ajattelee että* *e*_{*1/2} *oli* *voittanut* *arpajaisissa*.
 Jukka said that Pekka thinks that had won in.lottery
 ‘Jukka said that Pekka thinks that he (=Pekka) had won in a lottery.’

The nonlocal antecedent is hard to get in (4).² Unlike my example (3), this example has two embedded full finite clauses (CPs) between the null subject and the nonlocal main clause antecedent. Therefore, it is possible that a control relation over two CP-boundaries is not possible. I will return to this phenomenon in Section 3.1.1. But this is not the general picture. If the pragmatics of the situation require nonlocal antecedent to be selected, it can be selected over two CP-boundaries (5a). Similarly, if the nonlocal antecedent is the discourse topic, it can function as an antecedent (5b).

- (5) a. *Hän₁ pelkäsi että joku₂ tietää että e_{1/?2} on varastanut auton.*
 He feared that some knows that had stolen car.
 ‘He feared that somebody knows that he had stolen a car.’
- b. *Mitä tulee Jukka₁, . . .*
 what comes to.Jukka, . . .
hän₁ paljasti että joku₂ ajattelee että e_{1/?2} on voittanut lotossa.
 he revealed that some thinks that had won lottery.
 ‘When it comes to Jukka, he revealed that somebody thinks that he had won the lottery.’

The matter is even more complex than this: also non-c-commanding antecedents are possible (Holmberg 2005). The following example comes from Holmberg & Sheehan (2010).

- (6) *?[Jari₁ puhe] teki selväksi ettei —₁ ole syyllinen.*
 Jari’s speech made clear that.not be.3SG guilty
 ‘Jari’s speech made it clear that he is not guilty.’

By using native speaker data, Frascarelli (2015) presents more observations analogous to (6). Putting Frascarelli’s theory of these constructions aside for a while, data-wise Frascarelli’s study leaves little doubt that Finnish finite control is constrained neither by c-command nor by locality. Huhmarniemi and Brattico (2015) and Brattico and Huhmarniemi (2016) (henceforth this two-part study will be abbreviated as H&B) claim that similar facts are attested in a range of non-finite domains that exhibit non-finite possessive suffix agreement.

Modesto (2008) claims that in Finnish the embedded finite null subject cannot be controlled by a matrix object. He further claims that only the matrix subject (topic) can constitute an antecedent. I will comment on the former assertion here. To support it, Modesto cites the example provided in (7) (example 5a in the original source).

² This is not true if the second CP-boundary is absent. Thus, in (i) *Jukka₁ sanoi Pekka₂ ajattelevan että e_{1/2} on voittanut lotossa* ‘Jukka said [Pekka.GEN to.think [that *e* had won in.lottery]]’ there is no locality requirement. The identity of the case forms is not the crucial factor either, cf. (ii) *Jukka₁ täytyy tietää Pekka₂ ajattelevan että e_{1/2} on voittanut lotossa* ‘Jukka.GEN must know Pekka.GEN to.think that *e* had won in.lottery’. Finally, the double-CP structure (4) is unnatural, and it would be replaced by (i) in normal use. Holmberg (2005), citing Vainikka & Levy (1999), agrees that the antecedent must be found from the next clause up and gives the following example: *Se oli Tarjalle₁ pettymys [kun tuli selväksi [ettei hän/*e₁ saanut lukea latinaa kuolussa]]* ‘It was to.Tarja disappointment when became clear that.not she/*e* could learn Latin in.school’. To some native speakers, me included, there is no problem in selecting ‘Tarja’ as the antecedent for the null subject.

- (7) *Liisa₁ vakuutti Jussille₂ että e_{1/*2/*3} voi tulla valituksi.*
 Liisa.NOM assured to.Jussi that can come elected
 ‘Liisa assured Jussi that she[/*he] can be elected.’

Object control is possible in (7), however. This interpretation is natural in the context such as ‘Jussi doubted whether he might be able to get the new job. However, Liisa assured...’. The same interpretation becomes readily available if the embedded verb takes the conditional form. In fact, Modesto himself discusses several examples of embedded null subjects, taken from Holmberg (2005), that allow object antecedents and indeed even non-c-commanding antecedents (footnote 6). Two of the examples discussed in Modesto’s and Holmberg’s papers are provided in (8) (ex. 9 in Holmberg 2005).

- (8) a. *Anu₁ sanoi Jarille₂ että hän_{1/2/3}/e_{1/2/*3} ottaa kitaran mukaan.*
 Anu told Jari that he takes guitar along
 ‘Anu told Jari that s/he (=Anu or Jari) will take a guitar along.’
 b. *Se oli Tarjalle₁ pettymys ettei hän_{1/2}/e_{1/*2} saanut lukea latinaa.*
 it was to.Tarja disappointment that.not she
 could study Latin
 ‘It was as a disappointment to Tarja that she could not study Latin in school.’

Modesto further reports, correctly, that object antecedents feel more natural if the embedded clause is in the conditional form; if the object is moved to the operator position; or if the object is topicalized (see Modesto 2008, ex. 17–18, 36), thus further strengthening the observation that finite control is not limited to main clause subject antecedents. Hence, taken together the evidence strongly suggests that neither subject orientation, locality nor c-command is a requirement for Finnish finite control. What is? I think Holmberg’s assessment in his (2005) paper is still valid: the “conditions are rather poorly understood” (p. 539).

This statement becomes even more true once we recognize that no systematic study of obligatory control (example 2 and its kin) in Finnish exists.³ Here I will attempt to present a systematic and comprehensive typology of control relations and controlled null subjects in Finnish. The descriptive theory explains how the two types of null subjects are licensed, what their control properties are, and what kinds of null subjects there are in this language. All control constructions in Finnish, both finite and non-finite, are discussed, categorized and explained by a few empirical generalizations.

In addition to attempting to chart the empirical geography, I will argue for the following theoretical claims. First, I will argue, in the spirit of Aoun’s visibility hypothesis (Aoun 1981), that Agree renders nominal arguments visible at the PF and LF interfaces. I will also claim that this restriction does not concern features and elements that can be interpreted by discourse. A related claim is that both *pro* and PRO are independent pronominal elements of their own right, specifically, that they are bundles of phi-features, as was argued, for example, by Holmberg (2005). In some sense, this theoretical model marks a return to the older GB-theoretical theorizing, in which the distribution of null subjects was directly linked with morphosyntax, via Case Filter, for example.

³ Holmberg (2005) discusses the matter in passing, notes that there are both similarities and differences in the interpretation of finite null subjects and obligatory control structures, but leaves the issue for future research.

The article is organized as follows. Section 2 presents the main descriptive hypotheses argued for in this study and illustrates their empirical content with the help of a few selected examples. Section 3 then presents the evidence. The presentation is organized on a construction-by-construction basis: one type of null subject (Type I) will be discussed first (Section 3.1), followed by the second type (Type II) (Section 3.2). All Finnish control constructions are examined in these two sections, each construction in its own subsection. Section 4 presents the conclusions in a condensed form and offers a formalization analysis of the generalization.

2 A hypothesis

I would like to argue that there are two types of controlled null subjects in Finnish that I will call Type I and Type II. Type I resembles *pro* (finite control), while Type II resembles PRO (obligatory control). (I will use neutral labels “Type I” and “Type II” in order to avoid any possible confusion, although I will later argue that they map quite well to *pro* and PRO in other languages.) They are licensed by the following two rules:

- (9) *Licensing of Type I (“pro”) null pronouns (Finnish)*
 Type I null pronoun occurs optionally at the specifier of a head H such that (a) H exhibits full phi-agreement with the null pronoun and (b) H has a syntactic specifier position that can host an overt pronoun. If the null pronoun is in the third person, it requires an antecedent.
- (10) *Licensing of Type II (“PRO”) null pronouns (Finnish)*
 Type II null pronoun occurs obligatorily in connection with a head H such that (a) H never exhibits phi-agreement with the pronoun and (b) H does not have a syntactic specifier position that can host an overt pronoun. The null pronoun necessarily requires an antecedent.

I further state that there are no other controlled null subjects in Finnish. Every construction exhibits either Type I or Type II. Type I resembles the Romance *pro*-drop type (hence “*pro*”), which is similarly licensed by agreement (Rizzi 1982, 1986, Taraldsen 1980); it differs from the Romance profile, however, for the 3rd person in that it can be dropped only in the presence of both agreement and an antecedent.⁴ We will further see that the antecedent search for the Finnish Type I third person null pronouns involves interaction between narrow syntax and discourse, which in turn makes the Type I null pronoun quite “pronominal” in its antecedent properties. Type II resembles obligatory control constructions, hence it will be labelled as “PRO”. The condition that it occurs in contexts that have no room for overt pronouns or lexical arguments is also proposed by Williams (1980), who uses this criterion for distinguishing obligatory control (OC) from non-obligatory control (NOC), where the latter seems to fall under Type I in the present system. This test applies to Finnish virtually without exceptions: it neatly distinguishes Type II from Type I.

⁴ Thus, it is not correct to say that while agreement licenses first and second person finite null subjects, the presence of an antecedent would constitute a sufficient condition for third person null subjects. The correct generalization is that for third person finite null subjects the presence of a suitable antecedent presents an additional criterion.

A reader familiar with control in other languages but not Finnish will probably find the following remark useful. It is customary to think of *pro* (Type I here) as occurring mainly (or only) in finite clauses. This limitation does not apply to Finnish. Finnish, like Hungarian, exhibits non-finite constructions employing Type I *pro* null subjects due to systematic and productive non-finite agreement. In other words, nouns, adpositions, adverbs, non-finite verbs and even the negation agree in all phi-features with local arguments. The consequence is that the Type I-II distinction does not coincide in this language with the finite-non-finite distinction. Instead, the distinction coincides with morphosyntax, more specifically with the absence/presence of phi-agreement and the EPP.

Having introduced the two types of null subjects, Type I and Type II, we provide their antecedent properties next. These conditions are provided in (11). I will first list the generalizations and then illustrate their meaning with few examples; the rest of the article is dedicated to the discussion of data.

- (11) Control (in Finnish, descriptive empirical generalization)
- a. For Type I (“*pro*”), there are two strategies, A and B, operating in parallel:
 - i. (Strategy A) The antecedent must c-command the null subject (*c-command condition*) and it must be able to create a coherent (i.e. semantically possible) interpretation with the null subject (*semantic coherence*);
 - ii. (Strategy B) Null subjects that have extrasyntactic discourse features (e.g. ‘topic’) can look for matching antecedents (‘topic’) from the discourse.
 - iii. Strategy A and Strategy B interact with each other: If (A-B) can converge on the same constituent, that constituent must be the antecedent. If (A-B) target only different constituents, i.e. they cannot converge on the same constituent, the construction will be ambiguous. If neither (A) nor (B) converges into anything, the sentence is ungrammatical. If more than one candidate is selected by both A and B, then the local candidate must be selected;
 - b. For Type II (“PRO”): The antecedent must c-command the null subject (*c-command condition*) and be the most local possible (*locality condition*).
 - c. C-command relations are computed before A-bar movement but after A-movement. Conditions of Binding Theory and other independent constraints cannot be violated, and they may further narrow down the search space.

Few remarks concerning these rules will help to understand empirical content. Condition (11b) for Type II PRO null subjects resembles, or is identical with, Rosenbaum’s (1967) Minimal Distance Principle that he uses to account for similar facts from other languages. I will likewise show that Type II null subjects (when carefully separated from Type I) always select for the closest possible c-commanding antecedent. The antecedent search for Type I, in contrast, is a combination of several ideas that exist in previous literature. As showed above, the literature on Finnish finite null subject oscillates between assuming something akin to A (strict grammatical antecedent selection, Holmberg & Sheehan 2010, Rodrigues 2004) and B (topic- and discourse based selection, Frascarelli 2007, 2015, Modesto 2008). This oscillation reflects the fact that Finnish exhibits both behavioural profiles, as I will show in this article.

Strategy B, when looked at in isolation, is indicative of general pronoun interpretation. Pronoun interpretation requires access to discourse. The rule is also reminiscent of the situation in the radical pro-drop languages, such as Mandarin Chinese, in which arguments can be omitted rather freely, and their referents are inferred from the discourse

(Battistella 1985, Huang 1984, 1989). Thus, I believe the Strategy B appears in the Finnish data because it is part of a general pronoun interpretation mechanism. Strategy A, in turn, relies on nonlocal c-command and is most likely the same mechanism that is involved in interpreting quantifier-variable constructions.⁵ In short, the control rule for Type I “pro” null subjects appears to be a mixture of independent mechanisms involved in interpreting pronouns (B) and quantifier-variable constructions (A).

The requirement that the antecedent and null subject must generate a coherent semantic interpretation (“semantic coherence” in (11a.i)) will deal with situations in which the semantic properties of the referents, such as number or thematic roles, conflict with each other (e.g. Culicover & Jackendoff 2001, 2003). For example, if the antecedent is in the plural, the null subject must quite often also be in the plural. I will pay very little attention to this aspect in this study, however.

Next, let us look at how these rules work. Take again (1), repeated here as (12).

- (12) * *on* *aina* *paikalla* *ajoissa*.
 is.3SG always in.place in.time
 ‘He is always there in time.’

According to (11a), third person null subjects of the Type I require the presence of an antecedent. Strategy A tries to find a c-commanding antecedent but finds none. Strategy B tries to find a topic antecedent, but because the null subject itself is the topic, it finds none. Hence nothing is found, and the sentence is ungrammatical. We can try to fix either of these problems. We can provide a c-commanding antecedent for Strategy A. This generates (1b), repeated here as (13). Only Pekka can function as an antecedent.

- (13) *Pekka* *väittää* *että* *on* *aina* *paikalla* *ajoissa*.
 Pekka.NOM claims that is always in.place in.time
 ← Strategy A →
 ‘Pekka claims that he (himself) is always there in time.’

There are no locality requirements in (11a), so the antecedent must only c-command the null subject, and the antecedent and the null subject cannot conflict in their (semantically relevant) feature composition. But we can also try to provide a discourse antecedent:

- (14) *Pekkaa ei tarvitse muistuttaa tapaamisesta.* *on* *aina* *paikalla* *ajoissa*.
 ‘Don’t remind Pekka.’ be.3SG always in.place in.time

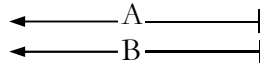
Notice that (14) is not ungrammatical despite containing a finite clause that lacks a third person pronoun subject. In (14), there is a ‘topic’ feature at the null pronoun that is

⁵ In other words, structures such as *nobody₁ claimed to Mary that he₁ would win the competition*. Holmberg (2005) makes the same assumption: Finnish third person null subjects are bound by their antecedents like variables are bound by quantifiers. I will assume this hypothesis here without proof, since whether this precise interpretation of Strategy A is correct or not is not relevant for present purposes. Showing that this hypothesis is true is, however, nontrivial: one has to show that the conditions for quantifier-variable binding are the same as the conditions for null subject antecedents as determined by Strategy A.

matched with a discourse topic. (The reader should be aware that Finnish is topic-prominent in the sense that the preverbal subject position is interpreted as the topic by default; Holmberg & Nikanne 2002).

If the c-commanding antecedent and the topic algorithm find the same constituent, then that constituent *must* be selected. This will explain the data in (15). Only Pekka's cousin can be selected as an antecedent because it both c-commands the null pronoun *and* it is also a topic. Selecting 'Pekka' is now impossible.

- (15) [*Pekan₂ serkku*]₁ *väittää että* *____{1/*2}* *on aina ajoissa paikalla.*
 Pekka's cousin claims that be.3SG always in.time there



'Pekka's cousin claims that he (=cousin) is always there in time.'

So, the subject topic 'Pekka's cousin' intervenes and blocks discourse search. A more detailed examination of these rules will be provided in the sections that follow. The general idea is worth repeating, however: an antecedent can be either a suitable c-commanding referential phrase, or it might be something salient in the discourse. The important point is that if one constituent, say the matrix subject, can attract both strategies, then there is no alternative but to accept that antecedent. Example (15) illustrates this. I believe some of the confusion surrounding the antecedent selection, and in particular whether it is based on grammar or discourse, stems from the failure to see that the two mechanisms interact. Strategy A will 'mask' Strategy B if they converge on the same constituent. Their interplay also explains 'subject orientation': subjects are both c-commanding antecedents and topics, so they will be prioritized.

When assessing whether various structural conditions (c-command, locality) are in operation, we have to take a snapshot from the derivation for measurement. C-command relations are computed after A-movement but before A-bar movement (11a.iii). It is well known that A-bar movement bleeds control (Huhmarniemi 2012). In the example (16), I will use the null subject associated with the Finnish possessive suffix as an example; this construction will be discussed in detail in Section 3.1.3.

- (16) a. [*___₁ Auto-nsa₁-ko*] *Pekka₁ rikkoi* *___*.
 car-ACC.3SG-Q Pekka.NOM broke
 'Was it his car that Pekka broke?'
 b. ??[*Pekka₁-a-ko*] [*___₁ rikkiäinen auto-nsa₁*] *häiritä* *___*.
 Pekka-PAR-Q broken car-3SG disturbed
 'Was it Pekka that his broken car disturbed.'

The following evidence suggests that control relations can be computed after A-movement.

- (17) *Pekka₁ näyttää* [*___₁ äiti-nsä mielestä*] *___ pärjäävän hyvin.*
 Pekka.NOM seems mother-3SG opinion doing well
 'Pekka seems to his mother to be doing well.'

It is more difficult to establish control before A-movement (18).

- (18) ??[_— äiti-nsä] näyttää [Pekasta] _— pärjäävän hyvin.
 mother-3SG seems Pekka doing well
 ‘His mother seems to Pekka to be doing well.’

Strategy A operates with the output of A-movement but before A-bar movement. At the very least this is the unmarked option that can be used without much risk in detecting c-command and locality.

The requirement for “semantic coherence” (11a.i) ensures that the antecedent and the null subject do not clash in their semantic features. I assume that this condition operates in the semantic component, perhaps partly in a manner argued for by Culicover & Jackendoff (2001, 2003). Culicover & Jackendoff argue that there are instances in which the thematic roles of the predicates and arguments involved determine possible control relations. Consider (19).⁶

- (19) a. *Pekka kertoi* [_— *lähtevänsä kotiin illalla*].
 Pekka.NOM told leave.VA.3SG home evening
 ‘Pekka told that he will leave home in the evening.’
 b. **Pekalle kerrottiin* [_— *lähtevänsä kotiin illalla*].
 to.Pekka told.IMPASS leave.VA.3SG home illalla
 Intended: ‘Pekka was told that he will leave home in the evening.’
 c. ?*Pekalle kerrottiin* [_— *joutuvansa pian armeijaan*].
 to.Pekka told.IMPASS have.be soon to.army
 ‘Pekka was told that he will soon be enlisted to the army.’
 d. **Pekkaa pelottaa* [_— *kävelevänsä yksin pimeässä*].
 Pekka.PAR frightens walk.VA.3SG alone in.dark
 e. *Minä pelkään* [_— *käveleväni päin liikennevaloa*].
 I fear walk.VA.1SG against traffic.light
 ‘I fear that I will bump into a traffic light.’
 f. **Pekkaa kannustettiin* [_— *voittaakseen kilpailun*].
 Pekka.PAR cheered.IMPASS win.KSE.3SG competition
 ‘Pekka was cheered for him to win the competition.’
 g. *Pekka harjoitteli* [_— *voittaakseen kilpailun*].
 Pekka trained win.KSE.3SG competition
 ‘Pekka trained in order to win the competition.’

I believe Culicover & Jackendoff (2003) are right when they say that in many instances of control “the controlled VP [must denote] an action and the controller is the character who has the onus for that action” (p. 1, abstract). The ungrammatical examples above violate this condition, while the grammatical ones obey it. This is possibly determined by means of thematic roles. Whichever way it is ultimately explained, I interpret this rule as ensuring that a coherent semantic interpretation, or a joint reference between the antecedent and the null subject, is possible. I believe, in agreement with Culicover & Jackendoff (2003), that the rule operates at LF or beyond, inside the semantic systems, and is not visible in

⁶ The veridicality of the semantic coherence condition has to be assessed with care. In order to examine whether it is true in any particular situation, one can use neither obligatory control constructions, because they exhibit c-command and locality instead of semantic coherence, nor finite control, because finite control makes use of the discourse search as an additional resource (Strategy B). The condition is relevant for *non-finite pro-constructions* (i.e. Type I non-finite control).

narrow syntax. Since the present paper aims to examine only the syntactic side of control, I will not comment on this aspect further.

3 Evidence

3.1 Type I (“pro”) null subject and its control

3.1.1 Finite clause

Standard finite clause exhibits subject-verb agreement in Finnish. There is a preverbal position filled in by EPP condition (Holmberg & Nikanne 2002, Vainikka 1989, Vainikka & Levy 1999). The finite clause should, therefore, generate Type I null subjects and fail to generate Type II null subjects. It will license Type I null subjects at Spec,T/FinP because there is both overt agreement and a place for an overt pronoun/DP. It will fail to generate Type II null subjects for the same reasons: Type II only occurs if agreement is necessarily lacking and there is no syntactic room for independent pronoun/DP. Both of these conditions are satisfied by the subject position of a canonical finite clause, however, hence a Type II null subject is not available.

We further have to show that the finite clause generates Type I null subjects only in the presence of agreement. This claim was established by H&B. For example, if the embedded finite clause contains a modal verb that does not agree with the subject, no control relation emerges.⁷ The embedded null subject sentence receives a generic interpretation. I will return to generic sentences in Section 3.3.2.

- (20) a. *He₁ väittävät että ___ täytyy herätä aikaisemmin.*
 they.NOM claim that must.0 wake.up earlier
 ‘They claim that one (incl. or excl. them) must wake up earlier.’
- b. *He₁ väittävät että heidän₁ täytyy herätä aikaisemmin.*
 they.NOM claim that they.GEN must.0 wake.up earlier
 ‘They claim that they must wake up earlier.’
- c. *He₁ väittävät että ___₁ saa-vat herätä aikaisemmin.*
 they.NOM claim that can-3PL wake.up later
 ‘They claim that they/*one can wake up later.’

If the finite control clause is headed by a Type I null subject, that null subject should, according to the present analysis, fill in the preverbal EPP position. This was shown by Vainikka & Levy (1999) for the first and second person pronouns, and later the claim has been extended for third person by others (Holmberg 2005). I will discuss Vainikka & Levy’s argument against the existence of preverbal third person null subjects in finite

⁷ Instead of requiring Type I null subjects to agree with verb, as I do here, one could claim that Type I null subjects can only occur in grammatical positions that are assigned the nominative Case. This interpretation is possible because only nominative arguments trigger agreement on the verb in Finnish. Thus, in the agreementless examples in (16), an overt argument would appear in genitive Case. Two facts make this assumption unlikely. One is, also direct objects in Finnish can be assigned the nominative Case, yet they cannot host controlled null subjects. Thus, the presence of nominative Case does not constitute a sufficient condition for licensing a Type I null subject. A more difficult problem, however, is the fact that, as I will argue in this article, the distribution of Type I null subjects is not limited to finite domains. They also occur in non-finite domains, where they occupy positions that are never assigned nominative Case.

clauses in Section 3.1.2. In addition, the Type I null subject should be optional. An overt pronoun can indeed replace the null subject pronoun.

Unlike in the case of Romance *pro*, the Finnish Type I null subject requires an antecedent if it is in third person. Let us next look at antecedent selection. My proposal differs from Holmberg & Sheehan (2010) in that (11) allows control by non-c-command antecedents (Strategy B), while Holmberg & Sheehan relies on Agree that is constrained by c-command and (relative or absolute) locality. They must handle the anomalous data (that they acknowledge) in some way, for example, by arranging the required c-command and locality relations by means of covert movement. No explanation is provided, however. This analysis, therefore, needs to be developed more before it can be examined in detail.

Modesto (2008) proposes that Finnish embedded finite null subjects are bound by matrix topics, thus arguments located at the dedicated topic position *Spec,Top* in the matrix clause. He then observes that there are many examples of non-subject and even non-c-commanding antecedents, and even in examples which he thinks demonstrates strict subject orientation I find that no such strict orientation is in operation. I will not repeat the data, but point the reader to Frascarelli (2015) who corroborates my own judgment by using more native speaker data.⁸ But notice that even if we ignore my own judgments and those reported by Frascarelli, Modesto himself correctly reports several examples which violate his subject condition. I believe the sum of the evidence suggests that there is no subject-topic requirement; rather, the subject-topic orientation emerges because subjects are often both c-commanding arguments and sentence topics, hence they are targeted by both Strategy A and Strategy B.

Frascarelli (2015) proposes that the null subject is controlled by an overt or covert topic constituent in the C-field.⁹ Apparent nonlocal and non-c-commanding antecedents are therefore not ruled out, as the true antecedent is always in the C-domain and c-commands the null subject. A difference with Frascarelli's and the present hypothesis is that the present hypothesis (rule 11) predicts c-commanding non-topic antecedents to be possible in the presence of topics, the latter which, according to Frascarelli, should always be selected. I find non-topic control relations possible in Finnish. The data in (21) provides several examples. As I have marked in the glossing, both the topic and the non-topic antecedents are possible, while the topic antecedent is slightly less acceptable to me. This of course just emphasizes the point that non-topic antecedents are possible in the presence of topics.

⁸ There are other problems in Modesto's analysis. He suggests that Finnish is not a null subject language in the sense of Rizzi (1982, 1986), but exhibits topic-drop similar to the East Asian languages. This claim is motivated by the (incorrect, in my view) claim that only matrix topics could serve as antecedents for third person finite null subjects, but it also ignores the fact, presumably not known at that time, that licensing of third person null subjects in Finnish requires verbal agreement. Another problem concerns the observation, reported also in Modesto (2008), that the subject position of a Finnish finite clause need not be occupied by the topic. There is much previous literature that recognizes the same problem. Modesto attempts to solve this problem by enriching the Finnish left periphery with a two-topic structure 'Spec Top Spec Fin', but this claim is hard to maintain for Finnish (see Vilkkuna 1989, Vainikka 1989, Brattico et al. 2013 and Brattico 2016).

⁹ The idea that the C-field contains covert features matched with referential arguments, including null arguments, is also argued for by Sigurðsson (2011) who applies such analysis to Finnish.

- (21) a. *Mitä tulee poliiseihin*₁ . . .
 what comes to.police . . .
*pankkirosvot*₂ *tietävät etteivät* ___₂ *pääse enää heitä*₁ *pakoon*.
 bandits.NOM know that.not.3PL get anymore them away
 ‘When it comes to the police, the bandits know that they cannot escape them anymore.’
- b. *?Mitä tulee poliiseihin*₁ . . .
 what comes to.police . . .
*pankkirosvot*₂ *tietävät etteivät* ___₁ *saa heitä*₂ *kiinni*.
 bandits.NOM know that.not get them catch
 ‘When it comes to the police, the bandits know that they cannot catch them.’
- c. *Mitä tulee nuoriin*₁ . . .
 what comes to.young . . .
*jotkut*₂ *väittävät että* ____{1/2} *rikkovat heidän*_{1/2} *ikkunoita(an)*
 some.NOM claim that break their windows(3SG)
 ‘When it comes to youngsters, some claim that they break their windows.’
- d. *Mitä tulee Pekkaan*₁ . . .
 what comes to.Pekka . . .
*joku*₂ *väitti että* ____{1/2} *varasti häneltä*_{1/2} *kellon*.
 some claimed that steal him watch
 ‘When it comes to Pekka, somebody claimed that he stole a watch from him.’

Non-topic c-commanding antecedents are found by Strategy A, while the non-c-commanding topics are picked up by Strategy B. Both strategies operate in parallel and can locate different constituents. In order to access the non-c-commanding discourse antecedent, the matrix clause subject cannot constitute the topic. If the main clause subject is also the topic, both strategies are forced to converge to the same constituent. In order to get a reading in which the topic is the antecedent in (21b), these sentences must be interpreted so that ‘police’ (etc.) constitutes the only topic of the clause. We can test this prediction further by demoting the ‘topicness’ of the preverbal subject by using an expletive construction (22a–b), focus constructions (c–d) or interrogatives (e). I find that the reading that makes use of the discourse antecedent becomes more natural under such manipulations, which supports the generalization (11).

- (22) a. *Mitä tulee nuoriin*₁ . . .
 what comes to.young . . .
*sitä väittivät jotkut*₂ *että* ___₁ *rikkovat heidän*₂ *ikkunoitaan*.
 EXPL claimed some.NOM that broke.3PL their windows
 ‘When it comes the youngsters₁, it was claimed by some that they₁ broke their windows.’
- b. *Mitä tulee Pekkaan*₁ . . .
 what comes to.Pekka . . .
*sitä väitti joku*₂ *että* ___₁ *varasti häneltä*₂ *kellon*.
 EXPL claimed some.NOM that stole.3SG from.him watch
 ‘When it comes to Pekka₁, it was claimed by somebody that he₁ stole a watch from him.’

- c. *Mitä tulee nuoriin*₁ . . .
 what comes to.young . . .
*jotkut-ban*₂ *väittivät että* ___₁ *rikkovat heidän ikkunoitaan.*
 some-FOC claimed that broke.3PL their windows
 ‘When it comes to the youngsters₁, some that they₁ broke their windows.’
- d. *Mitä tulee niihin nuoriin*₁ . . .
 what comes to.those to.young . . .
NAAPURIT väittivät että ___₁ *rikkovat heidän ikkunoitaan.*
 neighbours claimed that broke.3PL their windows
 ‘When it comes to those young, it was the neighbours (not for example our friends) who claimed that they broke their windows.’
- f. *Mitä tulee nuoriin*₁ . . .
 what comes to.young . . .
kuka väitti että ___₁ *rikkovat heidän ikkunoitaan?*
 who.NOM claimed that broke.3PL their windows
 ‘When it comes to the youngsters, who claimed that they broke their windows?’

The discourse antecedent reading still feels a bit marginal, suggesting again that there is a special difficulty in accessing the discourse for control purposes. But discourse access is not ungrammatical and as a fact accepted by many speakers (Frascarelli 2015).

H&B accept the fact that both grammar and discourse play a role, but they further claim that Strategy B is a last resort mechanism and therefore only used if the grammatical Strategy A fails. Strategy A would thus serve as a gatekeeper for Strategy B. The data above shows that the existence of a c-commanding local antecedent does not make the discourse antecedent invisible, which leads me to reject the hypothesis proposed by H&B. A better way to capture these data is to think of the two strategies as working in parallel – that is, both algorithms look for possible antecedents independently of each other – but also converging on the one and the same constituent were it available. The convergence will take place only after all candidate solutions have been pooled.

Rodrigues (2004) correctly observes that it is difficult to control the null subject over two CP-boundaries. The data is repeated in (23).

- (23) *Jukka*₁ *sanoi että Pekka*₂ *ajattelee että* *e*_{1/2} *oli voittanut arpajaisissa.*
 Jukka said that Pekka thinks that had won in.lottery
 (topic) ————— (topic) ————— |
 ‘Jukka said that Pekka thinks that he (=Pekka) had won in a lottery.’

Strategies A and B will provide two candidates ‘Jukka’ and ‘Pekka’, since they both c-command the null subject, and they are both located in the Finnish topic position Spec,Fin/TP. Condition (11a.iii) states that if more than one candidate satisfies both A and B, then the local antecedent will be selected. Hence, in (23), ‘Pekka’ is an acceptable antecedent while ‘Jukka’ is not. This is how Rodrigues’ observation will be captured under the present system. However, this hypothesis further predicts that the nonlocal antecedent should become accessible if the topicness of the intervening antecedent is lessened. This prediction is borne out, as shown in (24).

- (24) *Mitä tulee Pekkaan...*
 what comes to.Pekka...'
Hän₁ pelkäsi että joku₂ tietää että pro_{1/2} varasti auton.
 he feared that some knows that stole car
 (topic,A+B) ——— (non-topic,A) ———|
 'When it comes to Pekka, he feared that somebody knows that he stole the car.'

Here, 'Pekka/he' is the explicit topic, while the indefinite quantifier 'somebody' is not; hence A picks up 'Pekka' and 'somebody', while B picks up only 'Pekka', making the non-local antecedent possible.

3.1.2 *Vainikka & Levy's (1999) argument against preverbal third person null subjects*

Vainikka & Levy (1999) argue that while the first and second person null pronouns satisfy the Finnish EPP condition, third person null pronouns do not. Their argument to the conclusion that first and second person null subject pronouns can (or must) satisfy the Finnish EPP is based on the observation that Finnish has a strong tendency to avoid verb-initial constructions, while no ungrammaticality emerges if the sentence is headed by a null subject. This is generally taken to mean that the null subject sentences are *not* verb-initial: they have the null subject at a preverbal subject position. The argument is convincing. While there is a broad agreement on these facts by now, at least in the relevant literature discussing Finnish, Vainikka & Levy (1999) do not think that this reasoning applies to third person null subjects. Their argument is based on the evidence in (25) (the data and judgments from Vainikka & Levy 1999).

- (25) a. *Nopan löysi Maija lipaston alta.*
 dice.ACC found.3sg Maija.NOM chest under
 'Maija found the dice under the chest.'
 (Vainikka & Levy 1999, ex. 20)
- b. *?*Palkankorostusta pyysin heti.*
 raise.PAR ask.1SG immediately
 'I asked for a raise immediately.'
 (Vainikka & Levy 1999, ex. 18a)
- c. *Palkankorostusta pyysi heti Liisa.*
 raise.PAR ask.3SG immediately Liisa.NOM
 'It was a raise that Liisa asked for immediately.'
 (Vainikka & Levy 1999, ex.18b)

Vainikka & Levy (1999) argue that the preverbal subject position is empty when the verb agrees in third person, hence it can be occupied, and its EPP requirement is checked by some other phrase (25a,c). This is not so when the verb agrees in first or second person (25b). The data suggests that there is room for one extra phrase when the verb agrees in the third person.

The argument hinges on the judgment that 25(b) is ungrammatical. To me there is no contrast between (25a–c). Furthermore, sentence (26) provides a context in which this construction is also pragmatically natural.

- (26) *Otin vastaan työpaikan sillä ehdolla, että saisin palkankorotuksen ja lisää lomapäiviä . . .*
 ‘I took the job on the condition that I would get a raise and more vacation...’
Palkankorotuksen pyysin heti.
 Raise.ACC ask.1SG immediately.
 ‘I asked for the raise immediately.’

This topic reading, created by the context, further suggests that the phrase ‘raise’ occurs in the preverbal subject position that is associated with topics by default (Holmberg & Nikkanen 2002). The null subject would then remain at some postverbal position.

Another problem in Vainikka & Levy’s argument is their own observation that the third person pronoun can be null, and that a gap can occur in the preverbal subject position, once there is an antecedent (see example (1b) in the present paper). This is a problem because, as they themselves acknowledge, it looks as if the controlled null pronoun now has to occupy the subject position. No other phrase is required to fill in the subject position and thus to check the Finnish EPP requirement; hence the null subject has to do it. The implication is that the third person null subject *can* suffice to satisfy the EPP, and the original claim of Vainikka & Levy (1999) must be interpreted as claiming only that it is not forced to do so. Anne Vainikka (personal communication) has confirmed to me that this interpretation is correct. What come to the present work, then, we can conclude that there is no evidence suggesting that the third person null subject could not satisfy the finite clause EPP requirement in Finnish. Whether it is able to remain in some post-verbal position will not be addressed in this paper.

3.1.3 Noun phrase (NP/DP) and adposition phrase (PP)

Finnish noun phrases and certain adposition phrases exhibit full agreement between a local argument and the head. They are therefore predicted to generate Type I null subjects. The matter was argued for by H&B and their argument will be summarized here.

Both noun heads and adpositions exhibit optional phi-agreement in Finnish. When there is agreement, first and second person pronouns can be null without notable change in meaning (27a–b). When the pronoun is null and in the third person, it requires an antecedent (27c).

- (27) a. *(minun)* *auto-ni/* **(minun)* *auto*
 I.GEN car-1SG I.GEN car.0
 ‘my car’
- b. *(minun)* *läbellä-ni* **(minun)* *läbellä*
 I.GEN near-1SG I.GEN near.0
 ‘near me’
- c. **(hänen)* *auto-nsa/* *Pekka₁* *rikkoi* *(hänen)₁* *auto-nsa.*
 he.GEN car-3SG Pekka broke his car-3SG
 ‘his car’/‘Pekka broke his car.’

The prediction that third person null subjects in (27c) can seek c-commanding and non-c-commanding antecedents was verified in H&B, which in turn relied on much earlier literature reporting similar facts. The matter is not controversial. We still have to show that the control relation follows the control conditions stated in rule (11). The fact that c-command and semantic coherence play a role is not surprising, as is shown in (28).

- (28) a. [*Pekan₁ serkku*]₂ *rikkoi* *pro**_{1/2} *auto-nsa*. (c-command violation)
 Pekka's cousin broke car-3SG
 b. **Minä₁ korjasin* [*pro*₁ *virhee-nsä*]. (semantic feature violation)
 I fixed mistake-3SG
 'I fixed (his) mistake.'

Both H&B and the present hypothesis predict the existence of non-c-commanding antecedents. A long list of such constructions was reported in H&B, and I will not repeat the list here due to space constraints. The present hypothesis and the one proposed by H&B are not identical, however. H&B predicts discourse antecedents to be impossible in the presence of c-commanding antecedents, whereas according to the current hypothesis Strategy B should be able to pick up discourse antecedents independently of Strategy A. In the previous section, I documented a plethora of facts that disagree with H&B's last resort hypothesis. But H&B present data to support their own hypothesis. The data they cite shows that non-c-commanding antecedents are inaccessible if there is a c-commanding antecedent. Indeed, when it comes to noun phrases it is very difficult to get the null subject to refer to discourse antecedents in the presence of c-commanding antecedent inside both noun phrases (29) and adposition phrases (30).

- (29) Null subject + noun phrase + demoted matrix clause topic = discourse access still difficult
- a. ??*Mitä tulee Pekkaan*₁ . . .
 what comes to.Pekka . . .?
sitä ₁ *valitusta-an* *esiteltiin* *firman* *johtajille*₂ *eilen*
 that complaint-3SG presented firm's bosses yesterday
tuloksettomasti.
 without.resolution
 'When it comes to Pekka, that complaint of his was presented to the bosses yesterday, but without resolution.'
- b. ??*Aarhus₁ on hieno kaupunki. Me rakastuttiin* [₁ *hienoihin kävelykatuihin-nsa*].
 Aarhus is nice city. We fell.in.love nice streets-3SG
 'Aarhus is a nice city. We fell in love with its nice streets.'
- c. ??*Mitä tulee Aarhusiin*₁ . . .
 what comes to.Aarhus . . .?
Pekka piti erityisesti [₁ *vapautuneesta ilmapööristä-än*].
 Pekka likes especially (his/its) relaxed atmosphere.
- d. ??*Mitä tulee Aarhusiin*₁, . . .
 what comes to.Aarhus . . .?
₁ *vanhoja talojaan* *olivat suomalaiset turistit katselleet taukoamatta*.
 old house-3SG had Finnish tourists looked.at endlessly
 'When it comes to Aarhus, (its) old houses had the Finnish tourists looked at without pause.'
- (30) Adposition phrase + null subject + demoted matrix subject = discourse access still difficult
- a. ??*Mitä tulee Merjaan*₁, *joku näki linnun lentävän* [₁ *ylitseen*]
 what comes to.Merja, some saw bird flying over-3SG
 'When it comes to Merja, somebody saw a bird flying over him/??her.'

- b. **Mitä tulee heihin₁, tiedettiin Pekan asuvan* [₁ *lähellään*]
 what comes to.them know.IMPASS Pekka.GEN live.VA near.3P
 ‘When it comes to them, it was known that Pekka lives near them.’

Therefore, although both c-commanding (Strategy A) and non-c-commanding (Strategy B) antecedents are possible inside these constructions, the presence of a c-commanding antecedent blocks access to potential discourse antecedents. Strategy A functions as a gateway to Strategy B. Comparison between finite clauses, illustrated in the previous sections, and noun/adposition phrases suggests that this is a special property of noun/adposition phrases.

One explanation might stem from a mismatch between the thematic roles. Recall that the antecedent and the null subject must match in their semantically relevant features. Once the antecedent and the null subject share a thematic role, for example, such as the thematic role of ‘possessive’, the control relation becomes more acceptable (31).

- (31) *Pekalla₁ oli uusi auto. Merja₂ ihaili kovasti* [_{?1/2} *uutta autoaan*]
 Pekka had new car. Merja admired much new car-3SG
 <poss> <poss>
 ‘Pekka had a new car. Merja admired his new car very much.’

Thus, having the antecedent and the null subject to share their thematic role increases access to the discourse, as would be predicted by the present analysis. Another possible reason derives from the interaction between Strategy A and B. Recall that while Strategy A locates c-commanding antecedents, B searches for discourse topics. In many of the examples in (23–24), however, the clause-mate c-commanding antecedent is also a topic, or the sentence has an overt or covert topic, thus forcing the two strategies to converge into the more local antecedent. It is possible that in the configuration [S (topic)... [DP...pro]] the null subject cannot easily see outside of the containing clause, because the clause contains an overt or covert topic. Whatever the explanation, noun and adposition phrases behave differently than finite clauses and many other constructions examined later in this article, in that there is some resistance to discourse search.

3.1.4 TUA-adverbial

The Finnish TUA-adverbial, best glossed as ‘after doing something’ in English, is illustrated in (32).¹⁰

- (32) *Lapsi nukahhti* [_— *luet-tua-an* *iltasadun*].
 child fell.asleep after.reading-TUA-3SG bedtime.story
 ←—————|
 ‘The child fell asleep after reading a bed time story.’

The adverbial clause *luettuaan iltasadun* ‘after reading the bed time story’ is composed of a verbal root *lu(k)e-* ‘to read’ (for Finnish roots, see Brattico 2005), suffixed with the TUA material, which makes it an adverb, followed by agreement. There is no overt thematic

¹⁰ Finnish non-finite constructions have been analyzed in detail in Vainikka (1989) and Koskinen (1998). These works should be consulted for more detailed description of the various non-finite constructions examined in this article.

subject in (32), but there is a control relation to the matrix clause subject that is also reflected in the agreement (33).

- (33) *Minä nukahdin [___ lue-ttua-ni iltasadun].*
 I.NOM fell.asleep read-TUA-1SG bedtime.story
 ‘I fell asleep after reading the bed time story.’

The fact that there is agreement is compatible with the proposition that the null subject is Type I, which means that it ought to be possible to insert an overt subject/pronoun to the preverbal position of the TUA-adverbial. This turns out to be the case:

- (34) *Lapsi nukabti [isän luet-tua iltasadun].*
 child.nom fell.asleep father.GEN read-TUA.0 bed.time.story
 ‘The child fell asleep after the father read the bed time story.’

The null subject of the TUA-adverbial is therefore a Type I null subject, the same element that occurs in the subject position of a finite clause:

- (35) *Lapsi nukabti [pro luet-tua-an iltasadun].*
 child fell.asleep after.reading-TUA-3SG bedtime.story
 ‘The child fell asleep after reading a bed time story.’

This hypothesis further predicts that it should be impossible to merge the null subject at the specifier position of the adverbial without agreement. This prediction is borne out:

- (36) **Lapsi nukabti [___ luet-tua iltasadun].*
 child fell.asleep read-TUA.0 bed.time.story
 Intended: ‘The child fell asleep after reading the bed time story.’

Notice that once the TUA-adverbial is headed by an overt subject, agreement disappears (0 in the gloss). The reason is that only pronouns trigger possessive agreement in Finnish:

- (37) *Lapsi nukabti [sinun luet-tua(-si) iltasadun].*
 child fell.asleep you.GEN read-TUA-2SG bed.time.story
 ‘The child fell asleep after you read the bed time story.’

Is the Type II null subject possible in this context? The presence of overt pronoun subject, agreement and the fact that agreement is a necessary condition for the null subject suggest that Type II should not be possible. This is further supported by the observation that the control relation targets the matrix subject (38). Type II null subjects, in contrast, only target the closest possible c-commanding antecedent, a fact we will be able to demonstrate later.

- (38) a. *Pekka₁ tapasi Merjaa₂ [____{1/*2} lähdettyään kotoa].*
 Pekka.NOM met Merja.ACC left.TUA.3SG home
 ‘Pekka met Merja after he(*she) left home.’
 b. *Pekka₁ pyysi Merjaa₂ leikkimään [____{1/*2} tehtyään läksyt].*
 Pekka asked Merja.PAR to.play done.TUA.3SG home work
 ‘Pekka asked Merja to play after he did the home work.’

- c. *Pekka₁ antoi Merjan₂ lähteä [____{1/2} siivottuaan huoneensa.]*
 Pekka let Merja.GEN leave.A clean.TUA.3SG room.3SG
 ‘Pekka let Merja to leave after he/she cleaned his/her room.’
- d. *Pekalle₁ kerrottiin Merjan₂ lähteneen [____{*1/2} siivottuaan huoneensa.]*
 to.Pekka was.told Merja.GEN leave.VA clear.TUA.3SG room.3SG
 ‘Pekka was told that Merja had left after *he/she cleaned *his/her room.’

Are non-c-commanding discourse antecedents available? The discourse strategy B can be used if the null pronoun itself has some discourse property, such as ‘topic’. The matrix clause subject antecedent is itself typically the topic, which forces it to attract both strategies, as shown in (39).

- (39) *Pekka₁ tapasi Merjan₂ [____{1/*2} lähdettyään kotoa].*
 Pekka.NOM met Merja.ACC left.TUA.3SG home
- ← Strategy A —————|
 ← Strategy B —————|

In order to force the null subject to be controlled by a non-c-commanding discourse antecedent, we have to remove the topic subject and utilize some context to attach a discourse feature ‘topic’ to the subject of the adverbial clause. This will allow the null subject topic to match with the topic constituent. When we do this, we get examples such as (40).

- (40) *Mitä tulee Pekkaan₁ . . .*
 what comes to.Pekka . . .
ollaan oltu yhdessä paljon kalassa [___₁ jouduttuaan
 have.IMPASS been together much fishing become.TUA.3SG
työttömäksi].
 unemployed
 ‘As for Pekka, we have done much fishing together after he was fired.’

Insertion of an intervening topic makes the control relation much worse; ungrammatical to me. This is what we expect if the rule (11) were true: intervening c-commanding topic antecedents should block discourse access.

- (41) *?*Mitä tulee Pekkaan₁ . . .*
 what comes Pekka . . .
Merja on tapaillut häntä paljon [___₁ jouduttuaan työttömäksi].
 Merja had meet him much become.TUA.3SG unemployed
 ‘When it comes to Pekka, Merja had met him quite much after she/?*he was fired.’

The sum of the evidence therefore supports the claim that the TUA-adverbial is headed by a Type I null subject (“pro”) whose antecedent is determined by Strategy A and Strategy B in interaction. A Type II null subject is not possible.

3.1.5 ESSA-adverbial

The data below show that the ESSA adverbial (roughly ‘while doing something’) patterns with the TUA-adverbial: the adverbial agrees in phi-features (42a), and there is room for

an overt pronoun or DP (42b) while agreement is again a precondition for the occurrence of the null pronoun (42c). This construction will therefore be analyzed as in (42d).

- (42) a. *Pekka₁ nukabti* [₁ *luki-essa-an kirjaa*].
 Pekka.NOM fell.asleep read-ESSA-3SG book.PAR
 ‘Pekka fell asleep when/while reading a book.’
- b. *Pekka nukabti* [*isän luki-essa kirjaa*].
 Pekka.NOM fell.asleep father.GEN read-ESSA.0 book.PAR
 ‘Pekka fell asleep when/while his father was reading a/the book.’
- c. ??*Pekka₁ nukabti* [₁ *luki-essa kirjaa*].
 Pekka.NOM fell.asleep read.ESSA.0 book.PAR
 ‘Pekka fell asleep when/while reading a book.’
- d. *Pekka₁ nukabti* [_{PRO1} *luki-essa-an kirjaa*].
 Pekka.NOM fell.asleep read-ESSA-3SG book.PAR
 ‘Pekka fell asleep when/while reading a book.’

These data agree with the present hypothesis, apart from the fact that (42c) is agreementless and has a null subject controlled by the matrix subject. The construction is marginal, and the form bearing the agreement suffix, the form predicted by the present hypothesis, is the default option. To me, however, there is a clear contrast between the controlled agreementless TUA-adverbial and the controlled agreementless ESSA-adverbial that calls for an explanation:

- (43) a. **Pekka₁ nukabti* [₁ *luettua kirjaa*].
 Pekka.NOM fell.asleep read.TUA.0 book.PAR
 Intended: ‘Pekka fell asleep after reading a/the book.’
- b. ??*Pekka₁ nukabti* [₁ *lukiessa kirjaa*].
 Pekka.NOM fell.asleep read.ESSA.0 book.PAR
 Intended: ‘Pekka fell asleep while reading a book.’

Construction (43b) will be discussed in the next section (hence this section can be skipped unless the matter is of particular interest to the reader).

3.1.6 ESSA-adverbial without agreement; generic adverbials

In this section I will examine the controlled agreementless ESSA-adverbial in detail. We begin by observing that the non-agreeing form has more limited distribution than the agreeing form, which is the productive variant:

- (44) a. *Pekka₁ hymyili* [₁ *voittaessa*(an) kilpailun*].
 Pekka.NOM smiled win.ESSA.(3SG) competition.ACC
 ‘Pekka smiled while winning the competition.’
- b. *Pekka₁ tapasi Merjan* [₁ *pyöräillessä?*(än)*].
 Pekka.NOM met Merja.ACC bike.ESSA.(3SG)
 ‘Pekka met Merja while biking.’
- c. *Pekka₁ nukabti* [₁ *lukiessa?*(aan)*].
 Pekka.NOM fell.asleep read.ESSA.(3SG)
 ‘Pekka fell asleep while reading.’

The controlled agreementless ESSA-adverbial is *not* compatible with accomplishment or achievement aspect, as shown in (45).

- (45) a. *Lapsi kiukutteli usein* [₁ *syödessä *puuron/ puuroa*].
 child.NOM was.angry often eat.ESSA.0 porridge.ACC/ porridge.PAR
 ‘The child was often angry while eating the porridge/some porridge.’
 b. *Lapsi kiukutteli usein* [₁ *syödessään puuron/ puuroa*].
 child.NOM was.angry often eat.ESSA.3SG porridge.ACC/porridge.PAR
 ‘The child was often angry while eating the porridge/some porridge.’

In addition, the non-agreeing ESSA-adverbial can establish generic/arbitrary interpretation in which the thematic agent of the adverbial is ‘one’ (46). This is not possible with the TUA-adverbial (46b–d).

- (46) a. [*luki-essa (kirjaa)*] *saattaa nukahtaa*.
 read-ESSA.0 book.PAR can fall.asleep
 ‘When reading a book one can fall into sleep.’
 b. **?[luettua (kirjan)] tuntuu hyvältä*.
 read-TUA.0 book.ACC feels good
 ‘One feels good after reading a book.’
 c. *?*[kirjan luettua] voi olla tyytyväinen*.
 book.acc read.TUA.0 can be happy
 ‘After reading a book one can feel good.’
 d. [*Luettua?*(an) kirjan kokonaan*] *voi aina olla tyytyväinen*.
 read.TUA.(3SG) book.ACC completely can always be happy
 ‘After completing a book one can always be happy.’

If the ESSA-adverbial can generate generic reading, might it be possible to use it *without* creating a control relation to the matrix subject? I think such generic/non-controlled readings do indeed exist although, not surprisingly, they are marginal.

- (47) a. *?Koira haukkuu* [*myrskytessä/sataessa*].
 dog.NOM barks storm.ESSA.0/rain.ESSA.0
 ‘The dog barks when there is a storm/rain.’
 b. *?Meidän perheen kissa pelästyy aina* [*huutaessa*].
 us.GEN family.GEN cat fears always shout.ESSA.0
 ‘Our family’s cat becomes frightened always when one shouts/there is shouting.’

Adding agreement to these forms shifts the control relation back online, and the generic reading disappears. In order to completely break the control relation between the ESSA-adverbial and the matrix subject something (affix X below) has to be added between the root and the ESSA-suffix:

- (48) a. *Kaikkiä hakevat tavaransa varastosta* [₂ *pyyd-että-essä*].
 everybody brings things from.storage ask-X-ESSA.0
 ‘Everybody will bring their stuff from the storage when asked.’

- b. *Pekka*₁ *punastuu* [₂ *aina* *laul-etta-essa*].
 Pekka reddens always sing-X-ESSA.0
 ‘Pekka becomes red always when one (incl. or excl. Pekka) sings.’

The affix X is a special form, possibly a passive suffix that licenses a true adverbial generic pronoun.¹¹ This is shown by the fact that adding agreement (thereby forcing control) produces gibberish, and that by removing X true generic non-controlled reading becomes difficult:

- (49) a. **Pekka punaistuu* [*laul-etta-essa-an*].
 Pekka reddens sing-X-ESSA.3SG
 b. *Pekka punastuu* [*laula-essa*].
 Pekka reddens sing-ESSA.0
 ‘Pekka becomes red when he (one??) sings.’

The sum of the evidence is that the ESSA-adverbial has two clear forms: the controlled form that exhibits agreement and the generic form that does not exhibit agreement but requires a special affix. I would like to argue that the more limited agreementless ESSA-adverbial is a special construction that triggers a generic reading that targets the event structure of the main clause, thereby explaining why it cannot occur with accomplishment/achievement constructions, why it can establish a generic interpretation, and why it is has more limited use and feels marginal. Instead of the typical generic reading associated with some of the arguments of the predicate and generating a reading in which the argument refers to some generic ‘one’, this construction attributes the adverbial predicate to ‘some events in general’ (50).

- (50) *Pekka*₁ *punastuu* [_{1/??2} *laulaessa*].
 Pekka.nom reddens sing-ESSA.0
 ‘In general, Pekka becomes red while singing/??while one sings.’

This explains why there is a strong desire to use an agreeing form in connection with temporally unique situations (51), and why agreementless forms are acceptable in clauses such as (52) that refer to ideas or events in general:

- (51) a. *Yhdessä esityksessä Pekka punastui laulaessa?*(an)*.
 one show Pekka reddened sing.ESSA(3SG)
 ‘In one show Pekka reddened while he sang.’
 b. *Katso, Pekka kompastui juostessa?*(an)!*
 look Pekka.NOM stumbled run-ESSA(3SG)
 ‘Look, Pekka stumbled while running!’
 c. *Sen yhden kerran Pekka ei ollut ärtynyt herätessä*(än) aikaisin*
 that one time Pekka not be annoyed wake.up.ESSA(3SG)early
 ‘It was that one time that Pekka was not angry after waking up early.’

¹¹ The affix X looks like the causative, but it is not causative; the causative forms are *laula-tta-essa* ‘sing-CAU-ESSA.0’ and *pyydättäessä* ‘ask-CAU-ESSA.0’, and then the control relations emerge again. A reviewer suggests that X is a passive suffix, as in *laul-eta-an* ‘sing-PASS-??’.

- d. *Älä käytä kännykää ajaessa.*
 don't use mobile phone drive.ESSA.0
 'Don't use the mobile phone while driving.'

In short, the agreementless ESSA-adverbial seems to contain a generic event argument. It is tied to the matrix clause constituents by means of adverbial predication and has neither *pro* nor PRO at its Spec. By the same token, grammaticality judgments are difficult to estimate, perhaps requiring more natural data and/or informant consultation.

3.1.7 Adjective phrase (MA-participle)

Finnish has two prehead participle adjective constructions, of which we first look at the MA-participle. This construction is illustrated in (52).

- (52) *Pekka₁ palautti* [[₁ *löytä-mä-nsä*] *kirjan*].
 Pekka.NOM returned found-MA-3SG book.ACC
 'Pekka returned a book that he had found.'

The adverb *löytä-mä-nsä* is composed out of a verbal root *löytä-* 'find' together with the MA-suffix and agreement. Agreement (3sg) is here with the matrix subject. The thematic subject of the adjective phrase is the matrix subject, as shown in the translation. Overt agreement suggests that there is a Type I null subject that is controlled by the matrix subject. This predicts, correctly, that the null pronoun can be substituted by an overt pronoun (53a) and that the null subject occurs only if there is agreement (53b). This construction will be analyzed as in (53c).

- (53) a. *Pekka palautti* [*minun löytämän kirjan*].
 Pekka.NOM returned I.GEN found.MA book.ACC
 'Pekka returned a/the book found by me.'
- b. **Pekka palautti* [*löytämän kirjan*].
 Pekka.NOM returned found.MA.ACC book.ACC
- c. *Pekka₁ palautti* [*pro₁ löytä-mä-ni kirjan*].
 Pekka.NOM returned found-MA-1sg book.ACC
 'Pekka returned a/the book found by me.'

Let us consider control. There is strong subject orientation, and locality is not a requirement:

- (54) a. *Pekka₁ palautti Merjalle₂* [_{1/2} *löytä-mä-nsä kirjat*].
 Pekka.NOM returned to.Merja found-MA-3SG books.ACC.PL
 'Pekka returned to Merja the books that he/??she has found.'
- b. *Pekka₁ pyysi Jukka₂ palauttamaan Merjalle₃* [_{1/2/??3} *löytä-mä-nsä kirjat*].
 Pekka.NOM asked Jukka to.return to.Merja find-MA.PX/3SG
 books.ACC.PL
 'Pekka asked Jukka to return to Merja the books that he (=Pekka/Jukka) had found.'

Discourse strategy (Strategy B) is possible, provided that no subject/topic antecedent intervenes:

- (55) ?*Pekka*₁ *sai* *pankista* *useita* *kirjeitä* . . .
 Pekka got from.bank several letters . . .
Tiedettiin *että* *—*₁ *saamansa* *kirjeet* *menivät* *kaikki* *roskiin*.
 Know.IMPASS that got.MA.3SG letters went all to.garbage
 ‘Pekka got several letters from the bank. It was known that the letter he got he threw out to the garbage.’

Properties of the MA-participle therefore fall into place in accordance with (11). It contains a little-pro null subject that carries the thematic role of the agent, assigned by the MA-participle head, and is controlled by the matrix subject if a suitable matrix subject antecedent becomes available and by a discourse topic antecedent if such is available and can be accessed.

3.1.8 The VA-infinitival

The VA-construction, illustrated in (56), resembles finite clause in the sense that there is an overt verbal tense alteration (past/present) and the construction exhibits full phi-agreement. Most finite clauses can be transformed into a VA-infinitival, and vice versa. The VA-infinitival is not a finite clause, however. It only occurs in complement positions of other verbs and does not exhibit the typical left edge syntax of finite clauses (operators, topics). It cannot host finite elements, such as the modals, negation or auxiliaries. It has a preverbal specifier position that can be filled in by an overt pronoun. The thematic subject is in the genitive case.

- (56) *Pekka* *uskoi* *Merjan/minun* *lähtevän*.
 Pekka.NOM believed Merja.GEN/I.GEN leave.VA.0
 ‘Pekka believed that Merja will leave.’

There is no agreement between the thematic subject and the VA-infinitival in (56). The agreeing form is marginal:

- (57) ?**Pekka* *uskoi* *minun* *lähtevä-ni*.
 Pekka.NOM believed I.GEN leave.VA-1SG
 ‘Pekka believed that Merja will leave.’

Presence of the null subject makes agreement obligatory, as predicted by the present hypothesis:

- (58) a. **Pekka* *uskoi* *—* *lähtevän*.
 Pekka.NOM believed leave.VA.0
 b. *Pekka*₁ *uskoi* *—*₁ *lähtevä-nsä*.
 Pekka.NOM believed leave.VA-3sg
 ‘Pekka believed that he (=Pekka) will leave.’

The null subject of the VA-infinitival is controlled by the matrix clause subject, as predicted by (11): both Strategy A and Strategy B are attracted to the same constituent. To test if discourse antecedents are possible we eliminate or suppress the subject/topic entirely (prevent convergence between A and B) and further create a context that makes the null subject

of the VA-infinitival the topic, so that it can try to match another topic from discourse. One example is provided in (59).

- (59) ?*Mitä tulee Pekkaan₁ ...*
 what comes to.Pekka ...
tiedettiin [₁ *aikovansa perua kaikki lupauksensa*].
 believes.IMPASS attempt.VA.3SG cancel all promises
 ‘When it comes Pekka, it was known that (he) will try to not to honour any of his promises.’

As it is with other non-finite null subjects, the discourse reading is somewhat marginal because the null subject itself does not occupy a topic position. But the sentence is grammatical. As a final note, overt arguments do not trigger agreement at the VA-infinitival:

- (60) a. **Pekka uskoi hänen lähte-vä-nsä.*
 Pekka.NOM believed he.GEN leave-VA-3SG
 ‘Pekka believed that he will leave.’
 b. *Pekka uskoi hänen lähte-vän.*
 Pekka.NOM believed he.GEN leave-VA.0

I do not know the reason for the fact that VA-infinitival cannot agree with overt pronouns, but the present hypothesis does not require verbs to agree with overt subjects; it only requires agreement with Type I null pronouns.

3.2 Type II null subjects

3.2.1 Obligatory control (OB) in Finnish: preliminary observation

Before examining Type II null subjects and their control, something has to be said about obligatory control constructions (OB) in Finnish in general. A very basic observation is that for Finnish verbal complement clauses, of which there are several kinds (Koskinen 1998), both the nature of the verbal complement itself and the verb that selects it are relevant for null subject and control behaviour. To see this, we consider two selecting verbs, *want* and *order*, and two complement verbs, the A-infinitival and the VA-infinitival. We show that it is the combination of the selecting verb and the selected verb which determine whether and what kind of null subjects can occur. The data below is self-explanatory.

- (61) *want* + A-infinitival \longrightarrow null subject obligatory
 a. *Pekka₁ halusi ___₁ lähteä*
 Pekka.NOM wanted leave.A
 ‘Pekka wanted to leave.’
 b. **Pekka halusi Merjan lähteä.*
 Pekka.NOM wanted Merja.GEN leave.A
 Intended: ‘Pekka wanted Merja to leave.’
- (62) *order* + A-infinitival \longrightarrow overt subject obligatory
 a. **Pekka₁ käski ___₁ lähteä.*
 Pekka.NOM order leave.A

- b. *Pekka käski Merjan lähteä.*
 Pekka.NOM ordered Merja.GEN leave.A
 ‘Pekka ordered Merja to leave.’

(63) *want* + VA-infinitival \longrightarrow overt argument obligatory

- a. **Pekka halusi — lähtevän.*
 Pekka.NOM wanted leave.VA
 b. *Pekka halusi Merjan lähtevän.*
 Pekka.NOM wanted Merja.GEN leave.VA
 ‘Pekka wanted Merja to leave.’

I will, therefore, often examine pairs of elements, for example, a combination of *want* + Infinitival instead of single constructions in isolation.

3.2.2 *want* + A-infinitival

The *want* + A-infinitival projects an obligatory null subject (64a–b). It never exhibits agreement (64c). Thus, as predicted by the current theory, an agreementless and specifierless verb generates a Type II obligatory null subject (labelled as PRO, (64d)).

- (64) a. *Pekka₁ halusi —₁ lähteä.*
 Pekka.NOM wanted leave.A
 ‘Pekka wanted to leave.’
 b. **Pekka halusi Merjan lähteä.*
 Pekka.NOM wanted Merja.GEN leave.A
 Intended: ‘Pekka wanted Merja to leave.’
 c. **Pekka haluasi (Merjan) lähteä-nsä.*
 Pekka.NOM wanted (Merja.GEN) leave.A-3SG
 d. *Pekka₁ halusi PRO₁ lähteä.*
 Pekka.NOM wanted leave.A
 ‘Pekka wanted to leave.’

The *want* + A-infinitival pair therefore generates a predicate that is morphosyntactically inactive: it cannot project a specifier (64b) or exhibit agreement (64c). Morphosyntactic idleness creates obligatory null subjects in Finnish. The antecedent properties of the null subject are those of (11). The c-command condition is trivial and will not be examined here. Closest antecedent can and must be selected (65).

- (65) a. *Merja₂ ymmärsi Pekka₁ haluavan PRO_{1/*2} lähteä.*
 Merja.NOM understood Pekka.GEN want.VA leave.A
 ‘Merja understood that Pekka wanted to leave.’
 b. *Pekka₂ antoi Merjalle₁ [käskyn [PRO_{1/*2} lähteä]]*
 Pekka.NOM gave to.Merja order leave.A
 ‘Pekka gave Merja the order to leave.’
 c. *Pekka₁ näyttää — haluavan PRO₁ lähteä.*
 Pekka.NOM seems want.VA leave.A
 ‘Pekka seems to be wanting to leave.’
 d. *Meitä₁ pelottaa PRO₁ lähteä.*
 we.PAR fear leave.A
 ‘We are frightened to leave.’

According to (11b), discourse search should not be available. I think such constructions are extremely marginal, if possible at all:

- (66) a. ?**Mitä tulee Pekkaan₁, me käskettiin PRO₁ lähteä.*
 what comes to.Pekka, we.NOM asked leave.A
- b. **Mitä tulee Pekkaan₁, pelottaa PRO₁ lähteä.*
 what comes to.Pekka fears leave.A
 ‘When it comes to Pekka, he is frightened to leave.’
- c. **Pekka₁ tuli eilen kylään. Haluttiin PRO₁ tulla huomenna uudestaan.*
 Pekka visited us yesterday. Wanted.IMPASS come tomorrow again.

Strategy A for Type I null subject *pro* requires semantic coherence, whereas *PRO* requires locality. This explains the differences in the behavior between VA-infinitival and A-infinitival:

- (67) a. *Pekkaa pelottaa PRO nukkuu yksin.*
 Pekka.PAR fear sleep.A alone.
 ‘Pekka is frightened to sleep alone.’
- b. **Pekkaa pelottaa pro nukku-vansa yksin.*
 Pekka.PAR fear sleep-VA.3SG alone
 ‘Pekka is frightened to sleep alone.’
- c. *Pekka pelkää pro nukku-vansa yksin.*
 Pekka.NOM fear sleep-VA.3SG alone
 ‘Pekka is frightened to sleep alone.’

Examples of the type (68) (much studied in other languages) constitute a possible problem for the locality requirement.

- (68) a. *Pekka₁ sai Merjalta₂ [luvan [PRO_{1/*2} lähteä]]*
 Pekka.NOM got from.Merja permission.ACC leave.A
 ‘Pekka got a permission to leave from Merja.’ (Nonlocal antecedent)
- b. *Pekka₁ sai Merjalta₂ [lupauksen [PRO_{*1/2} lähteä]]*
 Pekka.NOM got from.Merja promise.ACC leave.A
 ‘Pekka got a promise from Merja to leave.’ (Local antecedent)
- c. *Pekka₁ antoi Merjalle₂ [luvan [PRO_{*1/2} lähteä]]*
 Pekka.NOM gave to.Merja permission.ACC leave.A
 ‘Pekka gave Merja the permission to leave.’ (Local antecedent)
- d. *Pekka₁ antoi Merjalle₂ [lupauksen [PRO_{1/*2} lähteä]]*
 Pekka.NOM gave to.Merja promise leave.A
 ‘Pekka gave Merja a promise to leave.’ (Nonlocal antecedent)

Removing the indirect subject ‘Merja’ has no impact on (68a,d) but makes (68b,c) ungrammatical or, at the very least, does not allow the null subject to refer to the only antecedent possible, ‘Pekka’. This suggests that ‘Merja’ is an adjunct in (68a,d) and an argument in (68b,c), which explains the emerging control relations while preserving locality. Thus, in (68a,d), ‘Pekka’ is the local argument antecedent while ‘Merja’ is an adjunct; in (68b,c) ‘Merja’ is an argument and c-commands the DP containing the null subject. The hypothesis is illustrated in (69).

- (69) a. *Pekka₁ sai [luvan [PRO₁ lähteä]] Merjalta.*
 Pekka₁ got permission leave.A from.Merja
 ‘Pekka got a permission to leave from Merja’
 b. *Pekka antoi [Merjalle₁ [luvan [PRO₁ lähteä]]]*
 Pekka gave to.Merja permission leave.A
 ‘Pekka gave Merja the permission to leave.’

The argument structures must further depend on the lexical properties of the main verb (*give, get*) and the head of the noun phrase (*permission, promise*) in such a way that in (69a) there is a direct semantic relation between ‘Pekka’ and the permission, while no such relation exists in (69b). I think this agrees with the semantic intuitions, but there is also independent syntactic evidence for the hypothesis. The data in (70) uses the c-command condition of *pro* to examine c-command relations and shows that the PP adjunct ‘from Merja’ cannot control the *pro*, while the argument ‘to Merja’ can.

- (70) a. *Pekka₁ sai Merjalta₂ [luvan PRO rikkoa [pro_{1/*2} auto-nsa]]*
 Pekka got from.Merja permission.ACC break.A car-3SG
 ‘Pekka got a permission from Merja to break his/*her car.’
 b. *Pekka₁ antoi Merjalle₂ [luvan PRO rikkoa [pro_{1/2} autonsa]]*
 Pekka gave to.Merja permission break car-3SG
 ‘Pekka gave Merja a permission to break his/her car.’

I conclude that the Type II null subject is always controlled by the local c-commanding antecedent. Notice that to show the presence of such non-local antecedents, it must also be shown that the null subject in question indeed is Type II, not Type I, and that the structural analysis of the clause is motivated by independent facts. Nevertheless, discourse access is completely blocked for PRO, establishing a clear contrast in the behavior between *pro* and PRO.

3.2.3 MA-infinitival

The MA-infinitival construction is illustrated in (71). First glance makes one believe that it has a specifier/subject position for a thematic subject and no agreement, predicting both types of null subjects to be impossible. The prediction is borne out.

- (71) a. *Pekka näki Merjan lähtemässä.*
 Pekka.NOM saw Merja.ACC leave.MA.0
 ‘Pekka saw Merja leaving.’
 b. *Pekka näki minut lähtemässä(*-ni).*
 Pekka.NOM saw I.ACC leave-(1SG)
 c. **Pekka näki — lähtemässä.*
 Pekka.NOM saw leave.MA
 Intended: ‘Pekka saw himself leaving.’

Although this analysis is in agreement with the present hypothesis, and possible in theory, it is questionable. The thematic subject of the MA-infinitival is not part of the infinitival;

it is in the matrix clause and hence takes the accusative (not genitive) case.¹² The correct analysis is (72)

- (72) *Pekka näki Merjan₁ [PRO₁ lähtemässä].*
 Pekka.NOM saw Merja.ACC leave.MA
 ‘Pekka saw Merja leaving.’

The null subject must be Type II, because the MA-infinitival never agrees, and there is no space for a phrase at its Spec:

- (73) **Pekka näki Merjan [tytön lähtemässä].*
 Pekka.NOM saw Merja.ACC girl.GEN leave.MA

Notice that because the null subject is Type II, hence PRO, its only possible antecedent is the most local argument. It cannot refer to the matrix subject if there is a more local argument. See also the data in (74).

- (74) a. **Pekka₂ näki [Merjan₁ sisikon] [PRO_{*1/*2} lähtemässä].*
 Pekka.NOM saw Marja’s sister leave
 b. *Pekka₁ oli [PRO₁ lähtemässä].*
 Pekka.NOM was leave.MA
 ‘Pekka was leaving.’

3.2.4 E-adverbial

The data from E-adverbial is provided in (75). The E-adverbial does not exhibit agreement, does not host an overt phrase at its Spec, and therefore generates a Type II null subject (75d).

- (75) a. *Pekka nukahhti yleensä [— lukien kirjoja].*
 Pekka.NOM fell.sleep often read.E books
 ‘Pekka fell asleep often by reading books.’
 b. **Pekka nukahhti yleensä [isän lukien kirjoja].*
 Pekka.NOM fell.asleep often father.GEN read.E books
 c. **Pekka nukahhti yleensä [— lukie-nsa kirjoja].*
 Pekka.NOM fell.asleep often read-3SG books
 d. *Pekka₁ nukahhti yleensä [PRO₁ lukien kirjoja].*
 Pekka.NOM fell.asleep often read.E books
 ‘Pekka fell often asleep by reading books.’

A possible objection to this analysis is the observation that the null subject is not controlled necessarily by the most local antecedent, as would be predicted by the current theory:

¹² The evidence for this proposition is the following: the thematic agent of the MA-infinitival is assigned the accusative case, not the genitive; it is raised to the subject position in a raising construction; it is partitivized in the presence of matrix negation, a condition that applies only to direct objects in Finnish.

- (76) *Pekka*₁ *voitti Merjan* [PRO₁ *käyttäen vilppiä*].
 Pekka.NOM won Merja.ACC use.E cheating
 ← Antecedent →
 ‘Pekka won Merja by cheating.’

This conclusion would be wrong, however, because the adverbial phrase containing the null subject is not merged lower in the structure than the direct object (the direct object occupying the lowest syntactic position in the clause). Hence, the direct object does not c-command the null subject. That the most local antecedent must be selected is shown by (77), in which ‘Merja’ is the only antecedent if the E-adverbial is merged inside the VA-infinitival.

- (77) *Pekka*₁ *näki Merjan*₂ *voittavan* [PRO_{??1/2} *käyttäen vilppiä*].
 Pekka.NOM saw Merja.GEN win.VA use.E cheating
 ‘Pekka saw Merja winning by cheating.’
 *‘Pekka saw Merja winning with the help of Pekka’s cheating.’

3.2.5 VA-participle adjective phrase

In addition to the MA-participle, discussed earlier, Finnish has another prenominal participle adjective phrase, the VA-participle illustrated in (78).

- (78) *Pekka* *näki [luuta — syövän] koiran*.
 Pekka.NOM saw bone.PAR eat-VA dog.ACC
 ‘Pekka saw a dog that was eating a bone.’

The VA-participle never agrees with an argument in phi-features (there is phi-concord, however), and there is no grammatical space for an overt subject argument:

- (79) **Pekka* *näki [luuta **Fidon** syövän] koiran*.
 Pekka.NOM saw bone.PAR Fido.GEN eat.VA dog.ACC

The VA-participle therefore contains a Type II null subject:

- (80) *Pekka* *näki [[luuta PRO₁ syövän] koiran]₁*.
 Pekka.NOM saw bone.PAR eat.VA dog.ACC
 ‘Pekka saw a dog that was eating a bone.’

The Type II PRO is controlled by the hosting noun phrase, not the matrix subject. Example (80) refers to a dog₁ that has the property that it₁ eats a bone. Contrast this with the MA-participle hosting a Type I null subject that exhibits subject-oriented control:

- (81) *Pekka*₁ *korjasi [[pro₁ rikko-ma-nsa] pyörän]*.
 Pekka.NOM fixed broken-MA-3SG bike.ACC
 ‘Pekka fixed a bike that he broke.’

3.3 Type I and Type II impossible

3.3.1 *ask + A-infinitival*

The present analysis predicts the existence of constructions in which controlled null subjects of any type are impossible. One such construction exhibits no agreement but does have room for overt constituent at its Spec. Under these circumstances neither Type I nor Type II null subject is possible. An overt argument will be obligatory. This situation is exhibited by a combination of *ask* + A-infinitival:

- (82) a. *Pekka k_{aski} Merjan lähteä.*
 Pekka.NOM asked Merja.GEN leave.A.0
 ‘Pekka asked Merja to leave.’
 b. **Pekka k_{aski} — lähteä.*
 Pekka.NOM asked — leave.A.0

Type I null subject is impossible, because there is no agreement to license Type I, and Type II null subjects are unavailable due to the presence of the Spec position (that can and must be) filled by an overt phrase. The same reasoning applies to many non-subject positions, such as to direct objects (no agreement, no Type I; overt argument possible, no Type II) or indirect objects. The present system also predicts that in a language that manifests object agreement, Type I controlled null objects ought to be available.

3.3.2 *Finite clause without agreement (=generic sentences)*

There are finite clause verbs that do not exhibit agreement with the subject. The same verbs nevertheless have room for the preverbal thematic subject argument. The current hypothesis says that such constructions should not be able to license controlled null subjects. This prediction is borne out: they can occur without thematic subjects, but such subjects are not controlled; instead, they obtain a *generic interpretation*. The data is repeated in (83).

- (83) a. *Pekka₁ luulee että — täytyy herätä aikaisemmin.*
 Pekka thinks that — must.0 wake.up earlier
 ‘Pekka thinks that one (not just Pekka) must wake up earlier tomorrow.’
 b. *Pekka luulee että — saa herätä myöhemmin.*
 Pekka thinks that — can.3SG wake.up earlier
 ‘Pekka thinks that he (=Pekka) can wake up earlier.’

Neither Type I nor Type II null subject is present (due to lack of control). I will not attempt to discuss the generic null subjects in this article, since the rules (9-11) do not predict their properties.¹³ The fact that generic null subjects cannot be controlled suggests that they have intrinsic referential properties, much like the English ‘one’.

¹³ Another form of general interpretation in Finnish arises if the verb agrees in third person, but the subject position is filled in by the object and the subject is lacking, e.g.: *ongelman ratkaisee helposti* ‘problem solve.3sg easily; one can solve the problem easily’. Hakulinen (1976:93) shows that these clauses cannot be controlled (see also V&L, ex. 33), thus they contain the generic pronoun.

3.3.3 Problem: KSE-adverbial

Of all the control constructions examined for this article I find the Finnish KSE-adverbial the most interesting. The salient properties of the KSE-adverbial are illustrated in (84). It exhibits full phi-agreement and a null subject, but there is no room for an overt subject argument. This situation is explicitly ruled out by the present theory.

- (84) a. *Pekka luki [___ nukahtaa-kse-en].*
 Pekka.NOM read sleep-KSE-3SG
 ‘Pekka read in order to fall asleep.’
 b. **Pekka luki [hänen nukahtaa-kse-en].*
 Pekka.NOM read he.GEN sleep-KSE-3SG

Presence of agreement suggests that it is Type I, but there does not seem to be space for an overt constituent. Lack of Spec/EPP suggests Type II, which is ruled out by the presence of agreement. The present theory predicts that the KSE-adverbial should be impossible.

The KSE-adverbial has an exceptional property not shared by other non-finite constructions in Finnish: it cannot occur *without* agreement. All agreementless forms are ungrammatical (e.g. *nukahtaa-kse-* ‘sleep.KSE.0’). This property is not irrelevant, because it alone will prevent an overt full DP from occurring at its Spec. Recall that only pronouns can trigger non-finite agreement in Finnish. If agreement is obligatory, pronouns are obligatory too. Now consider one property of the VA-infinitival examined earlier: only the null subject triggers agreement. Neither overt full phrases nor pronouns did so. If this is the case with the KSE-adverbial, then the facts can be explained. If agreement is obligatory, and only null subjects trigger agreement, then the null subject, too, must be obligatory. In summary, the KSE-adverbial is headed by a Type I null subject pro, and independent factors conspire to rule out overt pronouns/full DPs.

3.4 Summary

There are two licensing environments for Finnish (controlled) null subjects: one associated with phi-agreement and EPP, and the other its mirror image (no agreement, no EPP). The former generates optional *pro*-like null subjects (Type I), while the latter generates obligatory control structures (Type II, PRO). Type I and Type II null subjects have distinct antecedent selection properties: Type I exhibits more free, pronominal properties than Type II, whereas Type II exhibits strict locality and is always bound by narrow syntactic conditions.

Many important questions that arise from these considerations were put aside. It is worth mentioning some of them. The main goal was to provide an empirical typology of Finnish null subjects that would cover the relevant constructions in this language. Thus, in the absence of significant unintended omissions (which are certainly possible), this paper should provide a relatively comprehensive picture of Finnish. One unaddressed question was how the empirical categories exhibited by Finnish map into similar constructions and properties in other languages. It is evident that Type I null subjects are closely related to the Romance finite null subject, perhaps the only striking difference being the behaviour of third person null subjects which require an antecedent in Finnish but not so in Italian. The Italian third person null subject is even more pronominal, and does not exhibit binding behaviour (Strategy A). This suggests that a broader theory needs to parametrize the use of the two strategies A and B. Type II null subjects, in turn, map closely to obligatory

control constructions in other languages. It does not, however, seem possible to apply the Type I/Type II distinction as stated here to a language such as English, where Type I is quite likely absent. This would leave Type II, making all obligatory control strictly local. This might be not true. If so, Type II could dissolve into several distinct categories. In sum, the distinction between Type I and Type II does apply to other languages without at least some parametrization.

4 Analysis

In this final section, I will provide a formalization of the empirical generalizations argued for in this paper by using the generative grammar as a framework.

The fact that Type II null subjects occur in a grammatical environment in which no overt argument can survive suggests that morphosyntax has a licensing effect on overt arguments. I propose a reinterpretation of the original Case Filter (Chomsky 1981), which stated that abstract Case is required for nominal spell out. Let us assume that overt spell out of nominal arguments requires that they establish Agree (in the sense of Chomsky 2000, 2001) in narrow syntax. Once a Type II environment emerges that is unable to sustain Agree, whatever is merged there has to be covert. I assume that this process generates Type II null subjects.

Because Type II null subjects trigger neither agreement nor restrict the phi-features of their antecedents, I will assume, developing the ideas presented in Holmberg (2005), that they consist of bare unvalued phi-features ($u\phi = \text{PRO}$). Because they are semantically uninterpretable, Type II control relation is established at LF to provide semantic interpretation. Control is, therefore, a “repair” strategy.¹⁴

What happens if an ordinary lexical noun phrase, such as *my brother*, or a full pronoun, such as *he*, is merged to the same position? This would theoretically result in a null subject argument with a specific meaning and no control (e.g. *John wanted to leave* would mean *‘John wanted my brother/he/... to leave’). Without Agree the lexical argument would remain covert. However, such constructions appear to be almost completely hypothetical.¹⁵ To solve this issue, I will assume, building on Aoun (1981), that Agree controls interpretability for *both* PF and LF (85). In other words, unless the argument is registered by Agree, it cannot be interpreted semantically or phonologically.

(85) *Visibility condition*

If H is a head and E nominal element/feature (that cannot be interpreted by discourse), then E is interpretable at (PF, LF) if and only if Agree (H, E).

¹⁴ This assumption contradicts the hypothesis that uninterpretable features could not occur at LF. Perhaps they *can* occur, provided that a repair strategy, such as control or discourse interpretation, is triggered as a last resort.

¹⁵ In the earlier literature, the fact that null subjects were phonologically unpronounced was seen as requiring ‘identification’ or ‘recoverability’. Although it is hard to imagine a functioning language without some ‘recoverability’ principle imposing a correspondence between phonological forms and their interpretation, any such correspondence is violated, for example, by argument drop in radical pro-drop languages, arbitrary PRO and generic null subject constructions in Finnish, ellipsis in question-answer pairs, or definiteness in languages without articles, and indeed by many other similar examples.

Suppose that a full noun phrase, such as [*my brother*], is merged into a position in which we normally find unvalued phi-features (=PRO). Under current assumptions that lexical argument will not be tagged by Agree, and thus it will be invisible both at PF and LF according to (85).

An exception is a situation in which the element can be inferred from the context by the discourse (e.g. *John ate a tomato. Also Mary did ____*). I will assume that features interpretable by the discourse systems are exempted from (85).¹⁶ Formal features, however, can appear in that position if they are interpretable neither at PF nor at LF. Principle (85) imposes no restrictions on their use. I have assumed, in particular, that $u\phi = \text{PRO}$ can remain in the derivation. Once $u\phi$ enters LF, Type II control relation is established to provide semantic interpretation. Another option is to insert a pure discourse element, if possible; I will assume that this generates the arbitrary/generic reading.

Condition (85) assumes some formulation of Agree. As far as the Finnish data examined in this paper goes, we have to assume a relation between a head H and a phrase it c-commands such that no other head intervenes. This will allow H to see inside its own complement, but not inside the complement of its complement. Strict locality is required in order to prevent higher heads to establish Agree with Type II null subjects and thus render them visible. We do not, in other words, need non-standard assumptions when it comes to Agree (see Chomsky 2000, 2001, 2005, 2008).

Finnish Type I null subject “pro” occurs under agreement. Since it furthermore occurs in a regular Case position, there is no independent evidence suggesting that its silencing would be based on the lack of Case. In fact, exactly the opposite is the case. Following Roberts (2010), I assume that the Type I null pronominal is silenced because its features are copied to the local head, making the original features redundant. Since there is agreement, and the antecedent is thus constrained by its phi-features, I will assume (following again Holmberg 2005) that Type I null subjects are constituted by *valued* phi-features ΦP .

Hornstein (1999, 2000, 2001) argues that obligatory control is a form of movement. Under this analysis, the controller would be a moved copy of the controllee. Hence, Type II PRO would be a trace of movement, not an independent pronominal element. Rodrigues (2004) applies this theory to Type I finite control in Finnish and Brazilian-Portuguese. If we allow A-movement into theta positions and some type of A-movement out of islands (e.g. sideward movement), Hornstein’s system could be applied to Type II null subjects in Finnish. I reject it, because there is currently independent evidence in Finnish neither for A-movement into theta-positions nor for sideward movement out of islands. On the contrary, welcoming such operations could create problems elsewhere. But if we ignore these difficulties, the data presented here, in particular the fact that Type II control is strictly local, does not seem to violate the movement theory in any fundamental way. I will leave this question for future. Rodrigues’ analysis is perhaps even more interesting, because it makes a number of strong empirical predictions. I do not adopt this system, however, as these predictions do not seem to be borne out. For example, Type I control does not obey locality or c-command. I will assume, as detailed above, that both pro and PRO are independent pronominal units, packages of phi-features.

Rejection of the movement theory leaves us with no explanation, however, for the question of why $u\phi$ (PRO) can’t be merged into any position. Merging it into the direct

¹⁶ I am thus assuming that semantic interpretation consists of at least two independent systems, (i) an interpretation performed against the larger discourse and (ii) a literal or local interpretation that ignores the former and is possibly interested only in interpreting predicate-argument structures.

object position would result, according to current rules, in a reflexive sentence **John saw* ‘John saw PRO = himself’. I assume that the presence of Agree (possibly Case assignment alone, “government” in earlier systems) requires something to be overt at the direct object position. We must then say that, in the case of *John saw* __, the transitivity of the verb *saw* consists in the fact that Agree must ‘check’ the presence of an overt object, while (85) forces the corresponding features to be present at LF.

I have assumed that pronouns are deleted from spell out once they are copied to the verbal head by Agree. The null subject is then much like a trace of movement, a redundant copy that is marked as invisible at PF. On the other hand, the third person feature is not sufficient in Finnish to trigger the normal third person interpretation typical of third person pronouns. This is indicative of the fact that some uninterpretable feature escapes to LF. If we think of normal pronouns as composed out of (at least) definiteness (D) and phi (ϕ), the problem would then be located in the definiteness feature. For example, if the verbal third person phi-features do not carry definiteness in Finnish, and if the D feature cannot be spelled out alone (Finnish lacks overt articles), condition (85) forces the feature to be absent in a derivation if it involves a null subject. LF will thus see either an unvalued formal D-feature (uD) or see no D-features at all. This would make Finnish third person null subject “weak pronoun” in the sense of Cardinaletti & Starke (1999) and Holmberg (2005). If this is correct, then first and second person null subjects would appear as (D, ϕ) at LF, while third person subjects would consist of (uD, ϕ). Once (uD, ϕ) enters LF, the two antecedent algorithms, A and B, are activated to repair the broken feature.

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Information-Structurally (Un)Ambiguous Nominal Constructions in Hungarian*

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We discuss Hungarian sentences in which a (possessor or non-possessor) dependent of a noun head takes either noun-phrase-internal or external scope. We also investigate cases in which (i) the dependent in question is extracted from its matrix nominal expression (at least virtually) and (ii) several scope taking dependents can be found within a nominal expression. Particular attention is paid to scope taking dependents of (complex-event denoting) deverbal nominal constructions. In order to capture the phenomenon of internal-scope taking within nominal expressions, we propose a general syntactic representation in which the essentially morphology-based accounts are integrated with cartographic Split-DP / clausal-DP approaches (e.g. Giusti 1996, Grohmann 2003) via inserting operator layers in the new noun phrase structure. Certain language-specific intricacies are attributed to a post-Transfer process in PF in Sigurdsson's (2009) spirit, and certain extraction phenomena are accounted for by means of remnant movement.

Keywords: *extraction, Hungarian, information structure, nominal constructions, scope*

1 Introduction

Based on the DP-hypothesis advocated by Szabolcsi (Szabolcsi & Laczkó 1992), generative literature on the structure of noun phrases claims the existence of parallelisms between the verbal and the nominal domain. Several approaches (Giusti 1996, Rizzi 1997, Aboh 1998, Grohmann 2003, Laenzlinger 2005, among others) also argue for splitting up the DP into several functional projections, corresponding with the fact that these functional categories may encode discourse-related features. The verb-like properties of nouns have been described in connection with deverbal nouns, especially with complex-event denoting ones, which are considered to inherit the argument structure, that is, thematic arguments and other dependents from the input verb in many languages (e.g. Grimshaw 1990, 2011 for English, Kleemann-Krämer 2009 for German, Broekhuis *et al.* 2012 for Dutch). A number of proposals assume a VP node within the structure of deverbal nominals (Alexiadou *et al.* 2007), responsible for the verbal properties of these nominals.

We will claim that complex-event denoting deverbal nouns may also inherit the information structure from the input verb, that is, the fine-grained left periphery of Hungarian clauses, consisting of a layer of discourse-related functional projections (see also Farkas & Alberti 2016, Szabó *et al.* 2016). Besides foci, the distributive quantifiers *is* 'also' and *mind* 'each' may also appear within a complex-event denoting deverbal nominal expression, taking a noun-phrase-internal scope. However, operators may be scopally ambiguous, since they can also be interpreted externally (in the sense that they take scope over the matrix verb of the clause), like in the case of operators of ordinary nouns.

The paper concentrates on Hungarian sentences in which a dependent (XP_{dep}) of the noun head (N_{mat}) of a matrix noun phrase (DP_{mat}) is a scope taker.¹

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Section 2 investigates what can be regarded as the basic case: the case in which the scope in question can be interpreted relative to the (typically verbal) predicate (VP_{mat}) which takes DP_{mat} as its argument. Ambiguous sentences presented in section 3 demonstrate that the scope in question can also be interpreted “internally”, that is, within DP_{mat} , if, and only if, DP_{mat} is a sufficiently verbal (typically deverbal) nominal construction. In such cases, in which XP_{dep} takes noun-phrase-internal scope, DP_{mat} itself can serve as an independent scope taker relative to VP_{mat} , as discussed in section 4.

Sections 2–4 systematically investigate how the following two factors affect the readiness of XP_{dep} to take external and/or internal scope: (i) whether XP_{dep} is a possessor or a non-possessor (see subsections 2.1, 3.1, 4.1 and subsections 2.2, 3.2, 4.2, respectively), and (ii) whether XP_{dep} appears noun-phrase-internally or is extracted (see 2.1.1, 2.2.1, 3.1.1, 3.2.1, 4.1.1, 4.2.1 *versus* 2.1.2, 2.2.2, 3.1.2, 3.2.2, 4.1.2, 4.2.2). Such further factors are also considered, though not systematically, as (iii) the type of N_{mat} , (iv) the argument *vs.* adjunct status of XP_{dep} , and (v) the noun-phrase-internal position of XP_{dep} . As for the type of operator that XP_{dep} serves as, this paper almost always uses (positive) distributive quantifiers (*mind* ‘each/every/all’-expressions). The reason for this is the high readiness of this type of operator to accept different positions (NB: Alberti & Farkas (to appear b) and Farkas & Alberti (to appear) provide a fairly systematic overview of the behavior of other five operator types).

Section 5 deals with cases in which two dependents serve as scope takers within one and the same noun phrase; we point out that even hybrid interpretations can emerge, with one dependent taking internal scope while the other takes external scope.

Section 6 is devoted to the presentation of our detailed syntactic analyses. As for syntactic structures of noun phrases with internal-scope taking dependents, our point of departure is the general representation proposed in Alberti & Farkas (2015) and in Alberti *et al.* (2017). In this approach the essentially morphology-based Hungarian traditions² are integrated with the cartographic Split-DP Hypothesis (Giusti 1996), essentially yielding a tripartite nominal structure consisting of a thematic domain ($\Theta_{v\Delta}$), two agreement domains ($\Phi_{v\Delta}$, $\Phi_{N\Delta}$) and discourse domains ($\Omega_{v\Delta}$, $\Omega_{N\Delta}$) according to Grohmann’s (2003:211 (37b)) theory of Prolific Domains. As for representing noun

¹ The following abbreviations are used in the glosses (on the basis of the conventions applied in the series *Approaches to Hungarian* (e.g., Alberti *et al.* 2015)): (i) case suffixes: ACC(USATIVE), DAT(IVE), DEL(ATIVE), ELA(TIVE), ILL(ATIVE), INE(SSIVE), SUB(LATIVE), SUP(ERESSIVE); (ii) other suffixes on nouns: PL(URAL), POSS (possessedness suffix), POSS.1SG/.../POSS.3PL (possessive agreement suffixes); (iii) affixes on verbs: 1SG/.../3PL (agreement suffixes), PERF (a perfectivizing verbal prefix (preverb)); (iv) further glosses: ADJ(ECTIVALIZER), ATTR(IBUTIVIZER), NMLZ (NOMINALIZER), PTC (PARTICIPLE); (v) scope-hierarchical symbol: ‘X>Y’ (‘X takes scope over Y’).

Throughout the whole paper, the following six-degree scale of grammaticality judgments, given in Broekhuis *et al.* (2012, viii), is used: *: unacceptable, *?: relatively acceptable compared to *; ??: intermediate or unclear status; ??: marked: not completely unacceptable or disfavored form; ©: slightly marked, but probably acceptable. We also follow Broekhuis *et al.* (2012, xiv) in using introspective judgements by the group of the three authors (all native speakers of Hungarian) as the criterion of what word orders are part of the language associated with what readings (cf. Featherstone 2007, section 5.4), while we are aware of the fact that there might be speaker variation in this respect (see 3.2.1). Systematically testing our (highly complex) data would require another paper, given that testing even the simplest clause-level Hungarian focus constructions raises several methodological problems in addition to the inferencing influence of different scarcely calculable pragmatic factors (cf. Gerőcs *et al.* 2014).

² This tradition is hallmarked by such seminal works as Szabolcsi and Laczkó (1992), the Mirror-Principle-based (Baker 1985) paper by Bartos (2000), and É. Kiss’s (2002) book.

phrases with external-scope taking dependents, we take into account that the relevant XP_{dep} ceases to constitute an *each*-operator (similar cases of operator-feature percolation are described in Horvath (1997:549–550) and in Kenesei (1998, 2002)).

The paper concludes with a short summary (section 7) and an appendix, which gives the Grohmann-style analyses (Grohmann 2003) of our crucial examples.

2 N_{mat} is not a deverbal nominal

If DP_{mat} is the phrase of an ordinary noun with a scope taking dependent XP_{dep} , then the scope in question can be interpreted only relative to the predicative construction (VP_{mat}) that DP_{mat} belongs to as an argument. The reason for this is that a noun phrase, in contrast to verbal constructions, *ab ovo* does not refer to an event in which certain participants might take scope.

2.1 XP_{dep} is a possessor

2.1.1 XP_{dep} is inside DP_{mat}

Let us start with the case in which XP_{dep} , in particular, the universally quantified expression *mindkét fiú(nak)* ‘both boy(DAT)’, is a possessor inside the nominal expression (DP_{mat}) whose noun head (N_{mat}) it belongs to.³

As can be seen, the fully acceptable sentence variants presented in (1a–a’) have only one meaning, according to which the *each*-quantifier must be interpreted relative to the verbal construction *elromlott* ‘broke down’, and not relative to the noun head *kocsija* ‘one’s car’. This is in spite of the fact that it would emerge as a logical possibility to express a “noun-phrase-internal” meaning (concerning the possessive relation between cars and their owners) according to which there is only one car with two owners. Because of analogous cases that will be presented later, in which the explicit presence or absence of the definite article will play a crucial role in triggering the noun-phrase-internal reading (cf. (9c), (10a,b) in 3.2.1), we also separately present this unavailable interpretation here in (1b).

- (1) a. [Mindkét fiú(-nak a) *kocsija*] *elromlott*.
 both boy(-DAT the) car.POSS.3SG broke_down
 ‘It holds for each of the two boys that the car owned by him broke down.’
 a’. *Elromlott* [mindkét fiú(-nak a) *kocsija*].
 broke_down both boy(-DAT the) car.POSS.3SG
 ‘It holds for each of the two boys that the car owned by him broke down.’

³ In Hungarian, there are two kinds of possessors according to case marking: unmarked and explicitly case-marked ones (Szabolcsi and Laczkó 1992, 189–195), of which the latter will be referred to as NAK-possessors on the basis of its case suffix. The two kinds of possessors, as illustrated in (1a,b), are *ab ovo* freely interchangeable. An exception is that only NAK-possessors can be extracted, see (2) in 2.1.2 (cf. 6.3).

- b. *[(A) mindkét fiú(-nak a) kocsjja] elromlott.
 the both boy(-DAT the) car.POSS.3SG broke_down
 Intended meaning: ‘The car owned by the two boys broke down. [Situation: there are boys A and B, and there are three cars a, b and c, of which a is owned by A, b by B, and c by A and B as a shared possession. Hence, there is a unique car which can be referred to as the one owned by both boys.]’
- c. *Csak [(a) mindkét fiú(-nak a) kocsjja] romlott el.
 only the both boy(-DAT the) car.POSS.3SG broke_down away

The external (i.e., non-noun-phrase-internal) interpretation of the *each*-quantifier XP_{dep} in (1a-a’) can be construed as follows. The operator immediately belongs to XP_{dep} : something (‘his car broke down’) is predicated of two boys. That is the meaning given in (1a-a’) above. Nevertheless, this meaning is model-theoretically the same as saying that something (‘it broke down’) holds for two cars, which happen to be referred to as the possession of a boy and the possession of another boy. According to this latter formulation, the operator function is interpreted (still externally, i.e., relative to VP_{mat}) as one belonging to DP_{mat} . In other words, DP_{mat} takes over its dependent’s operator function;⁴ for which it also serves as evidence that the variant in (1c), in which we attempt to give DP_{mat} an independent (focus) operator function, is unacceptable, since it is impossible for DP_{mat} to have both a focus function and a quantifier function simultaneously.⁵

Note that in Hungarian an *each*-quantifier that belongs to a verbal construction can appear both preverbally, indicating its operator function, as in (1a), and postverbally, masking its operator function, as in (1a’) (see É. Kiss 1992, subsection 6.4.6.2). That is why variants (1a) and (1a’) are interchangeable, so DP_{mat} can be construed as an (indirectly) quantified expression in both cases.

All in all, an operator function immediately belonging to XP_{dep} within an ordinary nominal expression DP_{mat} (i) cannot be interpreted “internally” (i.e., relative to N_{mat}), but (i’) it must necessarily be interpreted “externally” (i.e., relative to VP_{mat}). This implies that (ii) DP_{mat} cannot have an independent operator function in the information structure of VP_{mat} but (ii’) must be interpreted by taking over its dependent’s operator function.

Note that the possibility of external operation interpretation mentioned in the previous paragraph can be regarded as a manifestation of a universal rule concerning the percolation of (arbitrary) operator features. It is this rule on which Horvath (1997, 548) bases her theory of *wh*-feature percolation in certain Hungarian interrogative subordinate constructions (Horvath 1997, 547–557). Kenesei applies the same rule to certain focus

⁴ By this we do not mean that the determiner *mindkét* ‘both’ would syntactically belong to N_{mat} in any sense. A piece of evidence for this claim is that a quantifier like *mindkét* does not combine with a plural N (e.g., **mindkét kocsik/kocsijai* ‘both car.PL./car.PL.POSS’ are unacceptable constructions). In contrast to this, such pluralized version of the examples in (1) as *mindkét fiú kocsjjai* ‘both boy car.PL.POSS’ is an acceptable noun phrase, which refers to two sets of cars. Therefore, DP_{mat} takes over its dependent’s operator function in a semantic sense; and if N_{mat} is in plural and the “inherited” operator function is an *each*-quantifier, then it quantifies over sets. All in all, a noun head is either immediately quantified by a quantifier-determiner that syntactically belongs to it (e.g., *mindkét kocsi* ‘both car’) or is quantified indirectly through a quantified argument of its (see (1a–a’) in 2.1.1, and (6a–b) and (7a–b’) in 3.1.1).

⁵ Investigating such potential variants as those presented in (1b–c) in this subsection (and then in (2b) and (3b) throughout section 2) will turn to be relevant in the light of the data presented in sections 3–4.

constructions in Hungarian (Kenesei 1998, 223–225, 2002, 303).⁶ We thus apply the rule to (some kind of) universal quantifier feature, an *each*-feature. Key components of the rule include that (i) the original position of the percolating feature should be an argument, and not an adjunct (Horvath 1997, 540–546; Kenesei 1998, 228), and (ii) it ceases to constitute an operator (of the given kind) (Horvath 1997, 549–550). As for formal details, while the quantifier determiner prefix *mind-* ‘each’ is morphologically attached to an element of XP_{dep} , the pragmasemantic contribution of the *each*-feature counts as if it were attached to the noun head of DP_{mat} .

2.1.2 XP_{dep} is extracted from DP_{mat}

We now apply our systematic testing protocol to the case in which the quantifier possessor XP_{dep} *mindkét fiúnak* ‘both boy.DAT’ is extracted (at least virtually) from the nominal expression (DP_{mat}) whose noun head (N_{mat}) it belongs to. In the case of extraction, only NAK-possessors can be used (see footnote 3); unmarked possessors cannot be extracted, as illustrated in (2a–a’).

Our observations are the same as in 2.1.1, so extraction does not cause any model-theoretically detectable differences, as shown by the essentially identical translations in (1a–a’) and (2a–a’).⁷ That is, an operator function that immediately belongs to XP_{dep} (here extracted from DP_{mat}) (i) must necessarily be interpreted “externally” (i.e., relative to VP_{mat}), implying that (ii) DP_{mat} must be interpreted by taking over its dependent’s operator function (cf. (2b)). This holds for both the case when the NAK-possessor appears preverbally (2a) and the case when it appears postverbally (2a’).

- (2) a. *Mindkét fiú*(-nak) elromlott [a kocsjá].*
 both boy-DAT broke_down the car.POSS.3SG
 ‘It holds for each of the two boys that his car broke down.’
- a’. *Elromlott [a kocsjá] tudtommal mindkét fiú*(-nak).*
 broke_down the car.POSS.3SG with_my_knowledge both boy-DAT
 ‘As far as I know, it holds for each of the two boys that his car broke down.’
- b. **Csak mindkét fiúnak romlott el [a kocsjá].*
 only both boy.DAT broke_down away the car.POSS.3SG

In other words, the extraction of XP_{dep} exerts no influence upon the Selkirk–Höhle-style *each*-feature percolation (2.1.1), as a result of which the quantifier function is taken over from the possessive argument to DP_{mat} in (2a–a’), and (2b) is ill formed, since it is impossible for DP_{mat} to have both a focus function and a (percolated) quantifier function simultaneously.

2.2 XP_{dep} is a non-possessor

Let us continue with the case in which the scope taker XP_{dep} is a non-possessor dependent of N_{mat} , which is still chosen to be an ordinary noun (in particular, *lány* ‘girl’).

⁶ Kenesei (1998) provides the rule in question (formulated according to the 1995 version of Chomsky’s Minimalist Program) as a minimalist reformulation of a rule by Höhle (1982) and Selkirk (1984). Note also that both authors’ relevant ideas immediately rest upon Ortiz de Urbina’s theory on operator feature percolation in the Basque language (e.g. Ortiz de Urbina 1990, 1993), who follows Webelhuth (1992, ch. 4).

⁷ It is left to future research to reveal the pragmatic and/or stylistic differences that the kind of extraction discussed implies.

We also keep on considering *each*-quantifiers. As it can reasonably be assumed that ordinary nouns have no non-possessor (thematic) arguments (cf. (17) in 4.2.1),⁸ XP_{dep} is chosen here to be an adjunct, in particular the superessive case-marked expression *mindkét fényképen* ‘in both photos’. Note at this point that adjuncts in the role of XP_{dep} will prove to behave differently from arguments in the same role (compare, for instance, (9a) to (3a–a’) and (12b) to (5a)).

2.2.1 XP_{dep} is inside DP_{mat}

Just like in 2.1.1, the given non-deverbal N_{mat} is not suitable for supplying XP_{dep} with noun-phrase-internal scope, see (3a–a’) with Meaning 2 and (3b).⁹ Nor can XP_{dep} take external scope, as also presented in (3a–a’). The Selkirk–Höhle-style rule on *each*-feature percolation (2.1.1) accounts for this latter fact: its property (i) declares that only arguments, and not adjuncts, can serve as the starting point of feature percolation.

⁸ In Szabolcsi & Laczkó’s (1992) standard noun-phrase model, for instance, there are no postnominal positions for either arguments or adjuncts (there are only two prenominal positions for the two types of possessor). There are, however, arguments for the potential right-branching character of the Hungarian noun phrase (see Alberti *et al.* 2015), and that its right periphery can host arguments as well as adjuncts.

⁹ The appearance of *lévő* in (3b) requires the discussion of a formal difference between possessor and non-possessor dependents. Non-possessors can appear only in an attributivized form in the zone between D and N (3b) while in the post-N zone (3a) and the pre-D zone (see (20b) in section 5) there is no attributivization. Adjuncts and arguments are attributivized by means of two markers *lévő* and *való*, which look like as if they were the present participial forms of *van* ‘be’ derived by means of *-Ó* (see Alberti and Farkas to appear b, 793–797). Note that *le-* is a suppletive stem of *van* appearing in the form *lesz* ‘will be’, for instance): in the case of adjuncts, *lévő* is used (3b), while arguments are attributivized by means of the alternative form *való* (see (9b) in 3.2.1). Possessors never undergo attributivization.

It is worth comparing the fully acceptable *lévő*-construction presented in (i) to the unacceptable *lévő*-construction presented in (3b). The radical difference in acceptability can be attributed to the following facts. The *lévő*-construction in (i) is a participial construction derived from a verbal construction with the *ott van* ‘there exist’ [verbal modifier + verb] unit in its center (and participial constructions have their own internal scope relations). The *lévő*-constructions and *való*-constructions discussed in this paper are not construed as participial constructions, but, rather, *lévő* and *való* should be regarded as attributivizing markers (‘ATTR’) of two different satellite types within noun phrases, namely, adjunct-like and argument-like ones, respectively. This double role in grammar resembles the double role that Kenesei (2014, ex. (35a)) attributes to the derivational suffix *-i*. It is claimed to be not only a word-level adjectivalizer but also an attributivizer of phrases marking, for instance, certain arguments of the deverbal nominal head in such expressions as *Egyiptom líbiai támadása* ‘Egypt’s attack of Libya / Libya’s attack of Egypt’ (NB: there is a third reading available: ‘Egypt’s attack in Libya’).

- (i) *Csak [a [mindkét fényképen ott lévő] lány] csinos.*
 only the both photo.SUP there be.PIC girl pretty
 ‘[Situation: There are two photos with girls in them but there is only one girl who appears in both photos.] Only the girl who appears in both photos is pretty.’

Note that one of the anonymous reviewers finds the version of (3b) with a definite article immediately preceding *mindkét* ‘both’ fully acceptable with the interpretation with XP_{dep} taking internal scope. We attribute this radical difference in grammaticality judgments to the identification of the (3b) type (with the definite article) with the (i) type (i.e., the participial construction).

- (3) a. **Felkeres majd [a lány mindkét fényképen].*
 visit then the girl both photo.SUP
 Intended meaning 1: ‘There are two photos each with a girl in it, and both girls will come and see you.’
 Intended meaning 2: ‘There are two photos with a girl who can be found in both, and she will come a see you.’
- a’. **[A lány mindkét fényképen] felkeres majd.*
 the girl both photo.SUP visit then
 Intended meanings: the same as in (3a)
- b. **Csak [(a) mindkét fényképen lévő lány] keres fel.*
 only the both photo.SUP ATTR girl seeks up
 Intended meaning: ‘[Situation: There are two photos with girls in them but there is only one girl who appears in both photos.] Only the girl who appears in both photos is pretty.’

The sentence in (4a), however, which is similar to the one in (3a) in containing the sequence [*a lány mindkét fényképen*], can be associated with a meaning or, at least for some speakers, with two meanings.

- (4) a. *Csinos a lány mindkét fényképen.*
 pretty the girl both photo.SUP
 Meaning 1: ‘The girl looks pretty in both photos.
 [One and the same girl can be seen in both photos.]’
 Meaning 2 available to certain speakers: ‘It holds for each of the two photos that the girl in the photo is pretty. [Thus, both girls are pretty.]’
- b. *Csinos [a lány] mindkét fényképen.*
 pretty the girl both photo.SUP
 Meaning 1 is based on the following scope hierarchy:
 [A DEFINITE GIRL] > [BOTH PHOTOS]
 Meaning 2 is based on the inverse scope hierarchy:
 [BOTH PHOTOS] > [A GIRL (PER PHOTO)]

A plausible explanation is demonstrated in (4b). Now the superessive case-marked expression *mindkét fényképen* ‘in both photos’ is not the kind of XP_{dep} we are studying in this subsection but an immediate (free) dependent of the finite predicate. Nevertheless, the question whether our Selkirk–Höhle-style rule of *each*-feature percolation always correctly predicts the argument–adjunct asymmetry still requires much future research. It would go beyond the scope of this paper to systematically investigate how different types of adjuncts behave in the role of the non-possessor XP_{dep} paired with different types of N_{mat} in all contexts studied in subsection 3.2.

2.2.2 XP_{dep} is extracted

As the comparison between the analogous examples in 2.2.1 and in this subsection shows, it is irrelevant whether an adjunct non-possessor XP_{dep} is inside DP_{mat} (see (3a–a’)) or is extracted (see (5a–b)). The given XP_{dep} can be associated with neither internal nor external scope.

- (5) a. *Mindkét fényképen *felkeres majd a lány*.
 both photo.SUP visit then the girl
 Intended meaning 1: ‘There are two photos each with a girl in it, and both girls will come a see you.’
 Intended meaning 2 [the same as Intended meaning 2 in (3a–a’)]: ‘There are two photos with a girl who can be found in both, and she will come and see you.’
- b. **A lány felkeres majd mindkét fényképen*.
 the girl visit then both photo.SUP
 Intended meanings: the same as in (5a)

Thus, the concluding note in 2.1 can be repeated here: the extraction of XP_{dep} exerts no influence upon the Selkirk–Höhle-style rule on *each*-feature percolation (2.1.1). The quantifier function under discussion cannot be taken over from the adjunct to DP_{mat} , independent of its position, given that XP_{dep} is linked to N_{mat} as an adjunct and not as an argument.

3 N_{mat} is a deverbal nominal (a source of ambiguity)

This section points out that if the nominal expression DP_{mat} shows some degree of verbalness, this opens up the possibility for the scope taking XP_{dep} to take scope not only externally (as was the case in section 2) but also noun-phrase-internally. This option is presumably due to an embedded verb in the depth of DP_{mat} which can be regarded as the source of its verbalness.

3.1 XP_{dep} is a possessor

3.1.1 XP_{dep} is inside DP_{mat}

The straightforward source of the ‘verbalness’ of DP_{mat} is that it is a deverbal nominal construction (Alexiadou *et al.* 2007, 477–613).

As shown in (6a), the scope taking *each*-quantifier that serves as a possessor can still be interpreted externally, that is, relative to VP_{mat} (see Meaning 1). With a slightly modified (less smooth) stress pattern, however, it can also be interpreted noun-phrase-internally (see Meaning 2), that is, relative to N_{mat} , or more precisely, relative to the verb *elbocsát* ‘dismiss’, embedded in N_{mat} (termed as V_{emb} from now on). The two translations, and especially their supplements, show that the two meanings can clearly be differentiated even model-theoretically.

- (6) a. *Ellenzem* [mindkét fiú(-nak az) *elbocsát-ás-á-t*].
 oppose.1SG both boy(-DAT the) dismiss-NMLZ-POSS.3SG-ACC
 Meaning 1: ‘It holds for each of the two boys that I am against his dismissal.
 [Both should be kept.]’
 Meaning 2: ‘I am against the simultaneous dismissal of the two boys.
 [One of them can be sent away, I do not mind.]’
- b. [Mindkét fiú(-nak az) *elbocsát-ás-á-t* *ellenzem*.
 both boy(-DAT the) dismiss-NMLZ-POSS.3SG-ACC oppose.1SG
 Meaning: the same as Meaning 1 in (6a)

Example (6b), in which DP_{mat} is placed preverbally, is unambiguous, at least if DP_{mat} is not a contrastive topic, evoking in this way Meaning 2 (but see subsection 4.1.1, which is devoted to the investigation of such cases in which DP_{mat} has an independent operator function besides the noun-phrase-internal *each*-quantifier function of XP_{dep}). The only available meaning is the one in which XP_{dep} takes external scope. The “disappearance” in (6b) of Meaning 2 in (6a) corroborates our argumentation concerning the analogous pair of examples in (1a–a’) for the following reasons. (i) It was claimed that if XP_{dep} takes external scope while remaining within DP_{mat} , then DP_{mat} takes over its dependent’s operator function. On this interpretation, therefore, DP_{mat} counts as a quantifier, so it can appear postverbally (6a) as well as preverbally (6b). (ii) If XP_{dep} , however, takes internal scope, DP_{mat} cannot take over that scope from it. There are two cases. (ii.a) The case in which DP_{mat} is given some operator function in the information structure of VP_{mat} (independently) will be scrutinized in section 4. (ii.b) If DP_{mat} remains without any operator function, then its preverbal placement is not legitimate (6b), so it must appear postverbally (6a).¹⁰

The two minimal pairs presented in (7a–a’) and (7b–b’) illustrate that there is a radical difference in readiness to take internal scope between complex-event denoting deverbal nominals (7a,b) and simple-event denoting ones (7a’,b’).¹¹ The latter type patterns with ordinary nouns (in the role of N_{mat}) in permitting only taking external scope for its possessor XP_{dep} . The reason for this is that simple-event denoting deverbal nominals, which denote “only” event types, are less verbal than deverbal nominal constructions patterning with verbal constructions in denoting complex events (Alberti & Farkas to appear a, subsection 1.3.1.2.4). The crucial factor of this difference in verbalness has to do with the choice of possessor (Laczkó 2000, 307–311). A complex-event denoting deverbal nominal has a designated type of possessor in the sense that it is obligatorily identical to a designated thematic argument of V_{emb} (with the Theme, if any, and with the Agent, otherwise, according to the basic rule). In the case of a simple-event denoting deverbal nominal, however, (i) the possessor can be identical to the Agent or another thematic argument of V_{emb} , or (ii) it can happen to be identical to the Theme, or (iii) it can be identical to a participant that is in a loose (non-thematic) semantic relation to the given deverbal nominal. The actual interpretation of the possessor in an on-going discourse in the case of simple-event denoting deverbal nominals depends on world knowledge. In the case of the surgeon in (7b’), for instance, it is uneasy to retrieve an interpretation according to which the possessor is a Theme, that is, the surgeon is operated on. However, in a variant of the complex-event denoting sentence (7b) in which the possessor *beteg* ‘patient’ is replaced with the expression *sebész* ‘surgeon’, the only

¹⁰ It is highly dispreferred, but undoubtedly not totally excluded, in Hungarian that accusative case-marked Themes (and not nominative case-marked Agents) appear preverbally without any special stress pattern as (non-contrastive) topics. In the particular case, however, DP_{mat} cannot be construed as a (non-contrastive) topic. This is presumably exactly due to the fact that this kind of topic can put no extra stress pattern on the internal quantifier stress pattern, so hearers have simply no reason to evoke this (*ab ovo* highly dispreferred) reading.

¹¹ A characteristic difference between complex-event denoting and simple-event denoting deverbal nominals is the presence or absence of purely perfectivizing preverbs (e.g. *meg*). While the former constructions obligatorily retain such preverbs (7a,b), in the latter constructions such preverbs must be omitted (7a’), sometimes with blocking forms substituting for the regularly derived nominal forms (7b’). On the systematic differentiation of these two types of deverbal nominal, see Laczkó (2000, 304–333; NB: (6) presents a complex-event denoting deverbal nominal).

interpretation is still the one according to which the possessor is a Theme (that is, two surgeons happen to be operated on).

- (7) a. *Ellenzem* [mindkét nagy(-nak a)
oppose.1SG both grandma(-DAT the)
ma reggel való meg-látogat-ás-á-t.
today morning ATTR PERF-visit-NMLZ-POSS.3SG-ACC
Meaning 1: ‘It holds for each of the two grandmas that I am against visiting her this morning. [We should go nowhere. Let us stay at home.]’
Meaning 2: ‘I am against visiting both grandmas this morning. [We have time to visit at most one of them.]’
- a’. *Sokáig tartott* [(*)a mindkét nagy(-nak a)
for_a_long_time lasted the both grandma(-DAT the)
látogat-ás-a.
visit-NMLZ-POSS.3SG
Meaning 1: ‘It holds for each of the two grandmas that her visit took a long time. [Situation: Grandma A’s visit took 6 hours, and grandma B’s visit took 7 hours.]’
~~Meaning 2~~ (not available): ‘The two grandmas common visit took a long time. [Situation: Grandma A’s visit took 30 minutes, grandma B’s visit took 40 minutes, and when they came together, that visit took 7 hours.]’
- b. *Ellenzem* [mindkét beteg(-nek a)
oppose.1SG both patient(-DAT the)
ma reggel való meg-operál-ás-á-t.
today morning ATTR PERF-operate-NMLZ-POSS.3SG-ACC
Meaning 1: ‘It holds for each of the two patients that I am against operating on him this morning. [Neither of them is prepared for operation.]’
Meaning 2: ‘I am against operating on both patients this morning. [We have time to operate on at most one of them.]’
- b’. *Sokáig tartott* [(*)a mindkét sebész(-nek a)
for_a_long_time lasted the both surgeon(-DAT the)
mai operáció-já.
today.ADJ operation-POSS.3SG
Meaning 1: ‘It holds for each of the two surgeons that his operation today took a long time. [Situation: Surgeon A’s operation took 6 hours, and surgeon B’s operation took 7 hours.]’
~~Meaning 2~~ (not available): ‘The two surgeon’s common operation took a long time. [Situation: Surgeon A’s operation took an hour, surgeon B’s operation took 80 minutes, and when they operated on that special patient together, that operation took 7 hours.]’

Note in passing that there is no difference in (not) having internal information structure between the two types of simple-event denoting deverbal nominals presented in (7a’) and (7b’). That is, there is no difference between those nouns that are derived regularly by means of the deverbal nominalizer *-ás* and those whose regular derivation is blocked by lexical forms which already exist in the language (Laczkó 2000: 335).

3.1.2 XP_{dep} is extracted

In order to investigate the case in which the scope taking possessor (XP_{dep}) of a deverbal noun (N_{mat}) is extracted from the phrase (DP_{mat}) of the noun, let us consider the variants (8a–b) below of the ambiguous sentence presented in (6a) in the previous subsection.

The variants in (8) are not ambiguous in the way in which (6a) is: they must highly preferably (8a) or exclusively (8b) be associated with the interpretation according to which XP_{dep} takes external scope, simultaneously its operator character to passing DP_{mat} (Meaning 1). This is presumably due to the fact that there is not enough grammatical clue for speakers to realize the information structurally neutral character of DP_{mat} according to the potential reading with XP_{dep} taking noun-phrase-internal scope (cf. footnote 13 and the relevant comments on (6b)). Thus the suppressed status ('??') of Meaning 2 in (8a) is accounted for. As for the full unacceptability of Meaning 2 in (8b), however, its explanation requires some observations given in section 4 and a remnant-movement-based analysis provided in section 6 (see Figure 3). The point is that an internal-scope taker XP_{dep} extracted to a preverbal position should indicate not only its own internal operator function. Surprisingly, it should also indicate (instead of the remnant of DP_{mat}) the operator function of the whole DP_{mat} . This operator function, however, can be evoked only in the case of such phonetically characteristic operator functions as a focus or a contrastive topic (see 4.1.2).

- (8) a. *Ellenzem az elbocsátás-át-t továbbra is mindkét fiúnak.*
 oppose.1SG the dismiss-NMLZ-POSS.3SG-ACC still also both boy.DAT
 Meaning 1 [the same as Meaning 1 in (6a)]: 'It holds for each of the two boys that I am against his dismissal. [Both should be kept.]'
 ??Meaning 2 [the same as Meaning 2 in (6a)]: 'I am against the simultaneous dismissal of the two boys. [One of them can be sent away, I do not mind.]'
- b. *Mindkét fiúnak ellenzem az elbocsátás-át-t.*
 both boy.DAT oppose.1SG the dismiss-NMLZ-POSS.3SG-ACC
 'It holds for each of the two boys that I am against his dismissal. [Both should be kept.]'
 [the same as Meaning 1 in (6a), but see subsection 4.1.2]

Finally, if a possessor XP_{dep} is extracted from a simple-event denoting deverbal nominal construction, only the reading in which XP_{dep} takes external scope is available, just like in the case of their counterparts with a non-extracted XP_{dep} , see (7a',b') in 3.1.1. Simple-event denoting deverbal nominals therefore pattern with ordinary nouns in permitting for XP_{dep} to only take external scope whether it is extracted (cf. 2.1.2) or not (cf. 2.1.1).

3.2 XP_{dep} is a non-possessor

3.2.1 XP_{dep} is inside DP_{mat}

As a comparison between (9a–b) below and (6a) in 3.1.1 shows, a non-possessor XP_{dep} relative to N_{mat} behaves in the same way as a possessor XP_{dep} does if DP_{mat} is a highly verbal construction (a complex-event denoting deverbal nominal expression, for instance).

In particular, if an XP_{dep} *each*-quantifier is placed either postnominally (9a) or prenominally¹² (9b) relative to N_{mat} , it can be interpreted both externally (i.e., relative to VP_{mat} , see Meaning 1) and noun-phrase-internally (see Meaning 2) (that is, relative to N_{mat} , or more precisely, relative to the verb *felbérrel* ‘hire’ V_{emb} embedded in N_{mat}). The noun-phrase-internal reading tends to come with a slightly modified (less smooth) stress pattern. The two translations, and especially their supplements, show that the two meanings can clearly be differentiated even model-theoretically.

- (9) a. *Ellenzem [Péter felbérrel-és-é-t mindkét munkára].*
 oppose.1SG Péter up.hire-NMLZ-POSS.3SG-ACC both job.SUB
 Meaning 1: ‘It holds for each of the two jobs that I am against hiring Péter to do it. [Péter is not allowed to work for us at all.]’
 Meaning 2: ‘I am against hiring Péter to do both jobs. [Péter can do one of them, I do not mind.]’
- b. *Ellenzem [Péter mindkét munkára való felbérrel-és-é-t].*
 oppose.1SG Péter both job.SUB ATTR up.hire-NMLZ-POSS.3SG-ACC
 Meaning 1: the same as Meaning 1 in (9a)
 Meaning 2: the same as Meaning 2 in (9a)
- c. *Ellenzem [?(a) mindkét munkára való felbérrel-és-ed-et].*
 oppose.1SG the both job.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC
 ??Meaning 1 (without the definite article): ‘It holds for each of the two jobs that I am against hiring you to do it. [You are not allowed to work for us at all.]’ (cf. Meaning 1 in (9a))
 Meaning 2 (with the definite article): ‘I am against hiring you to do both jobs. [You can do one of them, I do not mind.]’ (cf. Meaning 2 in (9a))

The version in (9c), in which the possessor of N_{mat} (is *pro*-dropped, and therefore it) does not appear as an unmarked possessor (masking the definite article of N_{mat} , see Bartos 2000: 749–752), presents the following interesting facts. (i) The definite article of N_{mat} is optional, though (i’) its presence is highly preferred (at least in the authors’ dialect). (ii) The fully acceptable variant with the definite article (explicitly) present can be associated only with the meaning on which XP_{dep} takes internal scope (Meaning 2). (iii) In the other version without the definite article, XP_{dep} obligatorily takes external scope (Meaning 1). (iii’) This reading, however, is scarcely available (‘??’) even for speakers (of a microvariation) who sufficiently readily accept the kind of nominal expressions determined by the determiner of their non-possessor dependents (instead of own determiners).

If DP_{mat} is placed preverbally, the difference in acceptability judgments between the variants with the definite article (10b) and without it (10a) is less pronounced. The (slight) difference between (10a) and the articleless variant of (9c) may have to do with the strict referentiality requirements concerning the postverbal zone, in contrast to the preverbal zone (Alberti 1997) (also see subsection 6.2).

If, however, DP_{mat} is placed preverbally but an unmarked possessor determines DP_{mat} (masking the potential definite article), the resulting (single) sequence of words (10c) patterns with (9b) in the following respect. They are ambiguous between the (fully

¹² The prenominal placement of a dependent of N_{mat} can be made possible by means of an attributivized form (Laczkó 1995: 101–110), which must be a *való*-construction in the case of arguments.

acceptable) reading on which XP_{dep} takes external scope (Meaning 1) and the (also fully acceptable) one on which it takes internal scope (Meaning 2).

- (10) a. [?][Mindkét munkára *való felbérlet-és-ed-et* ellenzém.
 both job.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC oppose.1SG
 Meaning [the same as Meaning 1 in (9c)]: ‘It holds for each of the two jobs that I am against hiring you to do it. [You are not allowed to work for us at all.]’
- b. [A mindkét munkára *való felbérlet-és-ed-et* ellenzém.
 the both job.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC oppose.1SG
 Meaning [the same as Meaning 2 in (9c)]: ‘I am against hiring you to do both jobs. [You can do one of them, I do not mind.]’
- c. [Péter mindkét munkára *való felbérlet-és-é-t* ellenzém.
 Péter both job.SUB ATTR up.hire-NMLZ-POSS.3SG-ACC oppose.1SG
 Meaning 1 [the same as Meaning 1 in (9a)]: ‘It holds for each of the two jobs that I am against hiring Péter to do it. [Péter is not allowed to work for us at all.]’
 Meaning 2 [the same as Meaning 2 in (9a)]: ‘I am against hiring Péter to do both jobs. [Péter can do one of them, I do not mind.]’

As the comparison between the examples presented in (11) below and those in (7a’,b’) shows, non-possessor dependents pattern with possessor dependents in the following respect. XP_{dep} can take only external scope if DP_{mat} is not a complex-event denoting deverbal nominal construction, as in (9–10) above, but “only” a simple-event denoting one (with no characteristic independent operator function, see 4.2.1¹³).

- (11) a. *Sokáig tartott [a tegnapi reggeli beszélgetés*
 for_a_long_time lasted the yesterday morning.ADJ talk-NMLZ
 mindkét témáról].
 both topic.DEL
 Meaning 1: ‘It holds for each of the two topics that yesterday morning’s talk about it took a long time.’
~~Meaning 2 (not available): ‘The talk about both topics took a long time.’~~
- b. *Sokáig tartott [a tegnapi reggeli záróvizsga*
 for_a_long_time lasted the yesterday morning.ADJ final_exam
 mindkét tantárgyból].
 both subject.ELA
 Meaning 1: ‘In the case of both subjects, yesterday morning’s final exam from each of them lasted for a long time.’
~~Meaning 2 (not available): ‘The final exam from both subjects lasted for a long time.’~~

All in all, in the case of such highly verbal nominal expressions as complex-event denoting deverbal nominal constructions, a non-possessor dependent can *ab ovo* take scope ambiguously, yielding ambiguous sentences in certain cases while opening up a

¹³ In the light of what is discussed in 4.2.1, Meaning2 in (11a–b) is rather to be called ‘suppressed’ than ‘ill formed’. One of the anonymous reviewers of the paper claims that there are speakers for whom the nominal constructions in question are not significantly less acceptable in the case of a non-operator DP_{mat} than in the cases discussed in 4.2.1.

special difference in other cases (with respect to the definite article of DP_{mat}). Interestingly, in the former case, both readings are fully acceptable, while in the latter case, the version without the definite article is highly marked and its acceptance is highly speaker-dependent. We will return to this topic in subsection 6.2. It can be asserted, nevertheless, that if a speaker can accept both variants, the formal difference unequivocally implies the differentiation of the reading on which XP_{dep} takes external scope from the one on which XP_{dep} takes internal scope. This is in harmony with what can be observed in other areas of grammar in which formal alternatives enable one to express semantic distinctions.

3.2.2 XP_{dep} is extracted

If a scope taking non-possessor of a deverbal noun is extracted from the phrase of the noun, the pattern of acceptability is essentially the same as we got in the case of scope taking extracted possessors (see subsection 3.1.2).

Let us now consider the variants presented in (12), based on the ambiguous sentence in (9a) in the previous subsection. They must preferably, or exclusively be associated with the interpretation according to which XP_{dep} takes external scope (see (12a) and (12b), respectively), by simultaneously passing DP_{mat} its operator character (Meaning 1). The reason for this is again that there is no grammatical clue for speakers to realize (the information structurally neutral character of DP_{mat} leading to) the potential reading on which XP_{dep} takes noun-phrase-internal scope (cf. footnotes 10 and 13, the relevant comments on (6b), and in particular, the comments on (8a–b)). As for the lower acceptability of extracted external-scope taking non-possessors relative to extracted external-scope taking possessors, the difference has to do with extraction itself: a possessor can more readily be extracted than a non-possessor. The difference may be attributed to the agreement relationship between possessors and possesseees (compare (12a)/Meaning 1 and (12b) to (8a)/Meaning 1 and (8b), respectively).

- (12) a. [?]*Ellenzem Péter felbérel-és-é-t*
 oppose.1SG Péter up.hire-NMLZ-POSS.3SG-ACC
továbbra is mindkét munkára.
 still also both job.SUB

[?]Meaning 1 [practically the same as Meaning 1 in (9a)]: ‘It holds for each of the two jobs that I am against hiring Péter to do it. [Péter is not allowed to work for us at all.]’

^{??}Meaning 2 [practically the same as Meaning 2 in (9a)]: ‘I am against hiring Péter to do both jobs. [Péter can do one of them, I do not mind.]’

- b. ^(?)*Mindkét munkára ellenzem Péter felbérel-és-é-t.*
 both job.SUB oppose.1SG Péter up.hire-NMLZ-POSS.3SG-ACC
 Meaning: the same as Meaning 1 in (12a) (but see subsection 4.2.2)

Finally, if a non-possessor XP_{dep} is extracted from a simple-event denoting deverbal nominal construction (unless DP_{mat} is given a characteristic independent operator function such as focus or contrastive topic), only the reading in which XP_{dep} takes external scope is available (cf. 4.2.2).

In the next section we consider a subset of the data in more detail, before providing a (tabular) summary of the facts we have covered.

4 DP_{mat} as an independent scope taker

As observed several times in the previous subsections, if XP_{dep} with an operator function ω_{emb} takes internal scope (in the information structure of V_{emb}), DP_{mat} will not take over the given operator function of XP_{dep},¹⁴ but DP_{mat} can take an independent operator function ω_{mat} in the information structure of V_{mat}. A necessary requirement for readily realizing this condition is that ω_{mat} should be a phonetically remarkably indicated operator function, in order to enable hearers to notice that not only operator function ω_{emb} is present.

4.1 XP_{dep} is a possessor

4.1.1 XP_{dep} is inside DP_{mat}

The examples below illustrate that ω_{mat} can readily be assigned a focus function (13a) or a contrastive-topic function (13b), with ω_{emb} still chosen to be an *each*-quantifier.

- (13) a. *Csak* [mindkét fiú(-nak a_z) elbocsát-ás-á-*l*] *ellenzem.*
 only both boy(-DAT the) dismiss-NMLZ-POSS.3SG-ACC oppose.1SG
 ‘I am against only the option according to which both boys would be sent away. [As for me, one of them can be sent away].’
- b. [Mindkét fiú(-nak a_z) elbocsát-ás-á-*l*]_{CTop}
 both boy(-DAT the) dismiss-NMLZ-POSS.3SG-ACC
határozottan ellenzem.
 definitely oppose.1SG
 ‘As for the option according to which both boys would be sent away, I am definitely against that. [As for me, one of them, for instance, can be sent away].’

4.1.2 XP_{dep} is extracted

The series of examples in (14) shows a surprising fact concerning sentences like those in (13). It is possible to extract XP_{dep} without “losing” the semantic contributions thanks to ω_{emb} and ω_{mat} , in spite of the fact that in the resulting constructions the extracted XP_{dep} should indicate both operator functions.

In (14a), there are two words explicitly indicating the two operator functions: *csak* ‘only’ indicates that ω_{mat} is a focus function, while *mindkét* ‘both’ makes it clear that ω_{emb} is an *each*-quantifier. In (14b), if it is carefully performed with a brief fall and a long rise (see É. Kiss 2002: 22–25, Gyuris 2009, Alberti & Medve 2000), the “embedded” *each*-quantifier is furnished with an unmistakably indicated contrastive-topic function.

- (14) a. *Csak* mindkét fiúnak *ellenzem* a_z elbocsát-ás-á-*t.*
 only both boy.DAT oppose.1SG the dismiss-NMLZ-POSS.3SG-ACC
 Meaning [the same as in (13a)]: ‘I am against only the option according to which both boys would be sent away. [As for me, one of them can be sent away].’

¹⁴ This comes from component (ii) of the rule on operator feature percolation (2.1.1): once the process of percolation has taken place, the constituent referred to as XP_{dep} in this paper ceases to constitute an operator (Horvath 1997: 549–550).

- b. [Mindkét fiúnak]_{CTop} *határozottan ellenzem* *az elbocsátás-át-t.*
 both boy.DAT definitely oppose.1SG the dismiss-NMLZ-POSS.3SG-ACC
 Meaning [the same as in (13b)]: ‘As for the option according to which both boys would be sent away, I am definitely against that. [As for me, one of them, for instance, can be sent away].’

Section 6 will discuss how this is possible to derive (by means of assuming remnant movement, see Figure 3).

4.2 XP_{dep} is a non-possessor

4.2.1 XP_{dep} is inside DP_{mat}

As the comparison between the examples in (13) and the (almost) fully acceptable examples in (15) shows, choosing XP_{dep} to be a non-possessor dependent makes it even easier to assign independent operator functions ω_{emb} and ω_{mat} to XP_{dep} and DP_{mat}. The reason for this is presumably the fact that the explicit presence of the definite article that belongs to N_{mat} unambiguously “selects” the meaning on which XP_{dep} takes internal scope (see 3.2.1).

- (15) a. Csak [a mindkét munkára *való felbérlet-és-ed-et*]
 only the both conference.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC
ellenzem.
 oppose.1SG
 ‘I am against only the option according to which you would be hired to do both jobs. [You can do one of them, I do not mind.]’ (cf. Meaning 2 in (9c))
- b. [A mindkét munkára *való felbérlet-és-ed-et*]_{CTop}
 the both job.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC
határozottan ellenzem.
 definitely oppose.1SG
 ‘As for hiring you to do both jobs, I am definitely against that. [As for me, however, you can do one of them.]’ (cf. Meaning 2 in (9c))

A similar phenomenon can be observed in (16). The “matrix” contrastive topic (ω_{mat}) unambiguously “selects” the meaning on which XP_{dep} takes internal scope (ω_{emb} is chosen to be the usual *each*-quantifier). This makes it possible for us to recognize internal information structures even in the case of such less verbal nominal expressions as simple-event denoting deverbal nominal constructions (cf. (11) in 3.2.1), at least to a certain extent (‘??’) and with high speaker-dependent variation.

- (16) a. ^{??}*Na például* [a *tegnap reggeli beszélget-és*
 well for_instance the yesterday morning.ADJ talk-NMLZ
 mindkét témáról], az *sokáig tartott.*
 both topic.DEL that for_a_long_time lasted
 ‘Well for instance, yesterday morning’s talk about both topics, that took a long time.’

- b. ^{??}*Na példánul* [a *tegnapi záróvizsga*
well for_instance the yesterday.ADJ final_exam
mindkét tantárgyból], *az sokáig tartott.*
both subject.ELA that for_a_long_time lasted
'Well for instance, yesterday's final exam from both subjects, that took a
long time.'

As presented in (17a–b), it also holds for certain groups of non-derived nouns that their non-possessor dependent XP_{dep} with an operator function ω_{emb} can more or less readily take internal scope if, and only if, DP_{mat} saliently carries an (independent) operator function ω_{mat} .¹⁵ Example (17a) illustrates the group of non-derived nouns which are termed *story/picture* nouns. Such nouns are assumed to be exceptional in Broekhuis *et al.* (2012, subsection 2.2.5) in that they have thematic arguments (namely, Theme, Agent and Beneficiary, as if they belonged to an underlying verb such as *write* or *paint*). It is this obviously verbal property that presumably makes DP_{mat} sufficiently verbal for having an information structure (at least if DP_{mat} has a salient independent operator function) in which XP_{dep} can take internal scope, surprisingly readily (?).

- (17) a. [?]*Na példánul* [*az a remek cikk*
well for_instance that the great paper
[*mindkét döntősről*]_{Theme}], *az nagyon tetszik.*
both finalist.DEL that very_much like
'Well for instance, that great paper about both finalists, I like that very
much.'

¹⁵ This holds only for non-possessor dependents. If XP_{dep} is a possessor, then it can (sufficiently readily) take internal scope only in the case of such highly verbal DP_{mat} constructions as complex-event denoting deverbal nominal expressions. Otherwise, if DP_{mat} is “only” a simple-event denoting expression, as illustrated in example (i), or, as can be seen in (ii–iii), the phrase of such special non-derived nouns as those presented in (17a–b), a possessor cannot take internal scope under any circumstances, however salient an operator function DP_{mat} carries.

- (i) **Na példánul* [(a) *mindkét sebész(-nek a)*
well for_instance the both surgeon(-DAT the)
mai operáció-ja], *az sokáig tartott.*
today.ADJ operation-POSS.3SG that for_a_long_time lasted
Intended meaning: ‘Well for instance, the two surgeon’s common operation, that took a
long time. [Situation: Surgeon A’s operation took an hour, surgeon B’s operation took 80
minutes, and when they operated on that special patient together, that operation took 7
hours.]’ (cf. (7b’) in 3.1.1)
- (ii) **Na példánul* [(a) *mindkét fiú(-nak a gyönyörű képe)*,
well for_instance the both boy(-DAT the) beautiful picture.POSS.3SG
az nagyon értékes.
that very valuable
Intended meaning: ‘Well for instance, the beautiful picture [by both boys] / [of both
boys] / [owned by both boys], that is very valuable.’
- (iii) **Na példánul* [(a) *mindkét kedvenc irányítóm(-nak a)*
well for_instance the both favorite quarterback.POSS.1SG(-DAT the)
meccse], *az nagyon érdekes volt.*
match.POSS.3SG that very interesting was
Intended meaning: ‘Well for instance, the match in which both of my favorite
quarterbacks took part, that was very interesting.’

- b. [?]*Na példánl [az a tegnapi meccs
well for_instance that the yesterday.ADJ match
[mindkét fiam ellen]_{Co-Agent}, az jó volt.
both son.POSS.1SG against that good was
'Well for instance, yesterday's match in which I played against both of my
sons, that was good.'*

As for (17b), Farkas & Alberti (to appear, subsection 2.1.1.2.2) argue that there is another special group of non-derived nouns patterning with the group of *story/picture* nouns exactly in the characteristic respect that they have thematic roles (namely, Agent, Co-Agent and Goal, as if they belonged to an underlying verb such as *fight* or *play* (*a game*)). It can be observed in (17b) that these *fight/game* nouns also pattern with *story/picture* nouns in implying that DP_{mat} can take internal information structure, at least if it has a salient “matrix” operator function (making it possible for XP_{dep} to take internal scope).

The source of the exceptional property of constructions of *story/picture* nouns and *fight/game* nouns that they have internal information structure may be hypothesized to be what was referred to above as (abstract) “underlying verbs”. In this sense these groups of nouns are similar to deverbal nominals, for which their underlying verbs are explicitly designated as their derivational basis (also see footnote 24 in subsection 6.2).

4.2.2 XP_{dep} is extracted

Let us now consider the series of examples in (18), which are word-order variants of the examples presented in (15) in 4.2.1. They illustrate that it holds not only for possessors but also for non-possessor arguments that they can — almost as readily — be extracted without “losing” the semantic contributions thanks to ω_{emb} and ω_{mat} . This is in spite of the fact that in the resulting constructions the extracted XP_{dep} should indicate both operator functions. The same combinations of the operator function ω_{emb} of XP_{dep} and the operator function ω_{mat} of DP_{mat} are investigated here as in the case of the extracted possessors in (14) in 4.1.2: in both examples, an “embedded” *each*-quantifier is combined with a “matrix” focus/contrastive-topic function (18a–b).

- (18) a. [?]*Csak mindkét munkára ellenzem a felbérlet-és-ed-et.*
only both job.SUB oppose.1SG the up.hire-NMLZ-POSS.2SG-ACC
Meaning [the same as in (15a)]: ‘I am against only the option according to which you would be hired to do both jobs. [You can do one of them, I do not mind.]’
- b. [?]*[Mindkét munkára]_{CTOP} határozottan ellenzem*
both job.SUB definitely oppose.1SG
a felbérlet-és-ed-et.
the up.hire-NMLZ-POSS.2SG-ACC
Meaning [the same as in (15b)]: ‘As for hiring you to do both jobs, I am definitely against that. [As for me, however, you can do one of them.]’

A slight but significant deterioration in acceptability judgments can be observed in (18) relative to (14) as well as to (15). This has to do with extraction in both cases. In the absence of the agreement relationship typical of the possessor–possessee connection in Hungarian, the syntactic affiliation of an extracted non-possessor is obviously less easy to

recognize than either that of a non-extracted non-possessor or that of an extracted possessor (cf. the comments on (12) in 3.2.2).

The variants of the less verbal nominal expressions presented in (16–17) in the previous subsection with XP_{dep} extracted (which we do not illustrate here) also show a one-degree deterioration in acceptability, yielding highly marked, very artificial constructions, which are practically unacceptable.

We conclude this section with an interim summary in tabular format of the variants systematically taken into account in the subsections of sections 2–4. What is relevant to our discussion in each variant is whether XP_{dep} can take internal and/or external scope.

N_{mat}		XP_{dep}	XP_{dep} RELATIVE TO DP_{mat}	SCOPE	
				INT	EXT
NON- DEVERBAL	ordinary noun (section 2)	Poss (2.1)	inside (2.1.1)	*	✓
			extracted (2.1.2)	*	✓
		non-Poss (2.2)	inside (2.2.1)	*	*
			extracted (2.2.2)	*	*
	<i>story/picture</i>	Poss	inside (4.2.1)	*	✓
		non-Poss	inside (4.2.1)	?	✓
DEVERBAL (section 3)	complex- event denoting	Poss (3.1)	inside (3.1.1, 4.1.1)	✓	✓
			extracted (3.1.2, 4.1.2)	✓	✓
		non-Poss (3.2)	inside (3.2.1, 4.2.1)	✓	✓
			extracted (3.2.2, 4.2.2)	(?)	✓
	simple-event denoting	Poss (3.1)	inside (3.1.1, 4.2.1)	*	✓
			extracted (3.1.2)	*	✓
		non-Poss (3.2)	inside (3.2.1, 4.2.1)	??	✓
			extracted (3.2.2, 4.2.2)	*?	✓

Table 1: *Scope taking possibilities of XP_{dep} depending on its grammatical function (+/–possessor), its relative position to DP_{mat} and the type of the noun head N_{mat}*

5 Multiple scope taking, hybrid scope taking

The triply ambiguous deverbal nominal construction in (19a) below demonstrates that even hybrid scope taking is permitted in the following sense. Within one and the same deverbal nominal construction (DP_{mat}), one dependent (XP_{dep}) of V_{emb} takes internal scope while another one (YP_{dep}) takes external scope (19d). That is, not only double external-scope taking (19b) and double internal-scope taking are permitted (19c).

By triple ambiguity we mean that all three readings can readily be evoked on the basis of the single word order given in (19a), but only by carefully performing three different stress patterns (on the “smooth” and “less smooth” stress patterns, see 3.1.1 and 4.1.2). The source of the three readings is the following three possible distributions of the two *each*-quantifiers between the finite verbal construction *elleneż* ‘oppose’ (VP_{mat}) and the embedded verb (*be)von* ‘involve’ (V_{emb}) in the depth of the deverbal nominal construction (DP_{mat}). First, as formulated in (19b), both quantifiers belong to the information structure of VP_{mat} . Second (19c), both quantifiers belong to the information structure of V_{emb} . Third (19d), the possessor as an *each*-quantifier (YP_{dep}) belongs to VP_{mat} (something is *opposed* in the case of both colleagues), while the non-possessor as a

quantifier (XP_{dep}) belongs to V_{emb} (the option of *involving* someone in both projects is referred to).

- (19) a. [Mindkét kolléga mindkét projektbe való
 both colleague both project.ILL ATTR
be-von-ás-á-t] *határozottan ellenzem.*
 into-pull-NMLZ-POSS.3SG-ACC definitely oppose.1SG
- b. Meaning 1: ‘It holds for each of the two colleagues that in the case of him it holds for each of the two projects that I am definitely against the option according to which he would be involved in it. [Neither colleague should be involved in either project.]’
- c. Meaning 2: ‘As for the option according to which both colleagues would be involved in both projects, I am definitely against that. [As for me, both colleagues can be involved, but only in one of the projects.]’
- d. Meaning 3: ‘It holds for each of the two colleagues that I am definitely against the option according to which he would be involved in both projects. [Neither colleague should be involved in both projects at the same time.]’
- e. ~~Meaning 4~~ (not available): A potential meaning ‘It holds for each of the two projects that I am definitely against the option according to which both colleagues would be involved in it. [In both projects, at most one colleague can be involved.]’

As for the fourth potential reading, according to which the possessor as an *each*-quantifier belongs to the information structure of V_{emb} while the non-possessor to that of VP_{mat} (19e), such a reading cannot be associated with the word order presented in (19a) (with any stress pattern). This suggests the following generalization. If, within a deverbal nominal construction (DP_{mat}), operator ω' commands operator ω'' (in the structure reflecting word order), it is excluded that the higher operator belongs to V_{emb} while the lower operator to VP_{mat} . That is, the scopal domain of the finite verb “from outside” cannot spread lower than the upper boundary of the scopal domain of the embedded verb. In other words, the Spell-out position of an operator with a percolating operator feature must be higher than that of an operator whose operator feature does not undergo percolation (cf. the Selkirk–Höhle-style rule on *each*-feature percolation demonstrated in 2.1.1). As shown in (19b–d), however, neither is it prohibited that the finite verb acquire several arguments of the embedded verb as its own operator (19b), nor is it prohibited that the embedded verb retain all of its arguments in its own information structure (19c), nor is some hybrid distribution prohibited (19d).

Given that DP_{mat} was claimed in 2.1.1 to take over the operator function of its external-scope taking dependent, the possibility for multiple external-scope taking raises the question what happens if different types of operator function belong to the external-scope taking dependents in question. Our hypothesis is that in such cases (i) it is the lowest operator function that DP_{mat} takes over, but (ii) there are various constraints on potential combinations (according to which particular scope takers must be extracted, for instance). Both observations are illustrated by the fairly acceptable and fully unacceptable variants presented in (20a), in which the “lowest” operator function is the focus function (which is taken over by DP_{mat} , as witnessed by the *mondok nemet* ‘say.1SG no.ACC’ word order that is used instead of the neutral *nemet mondok* word order). Nevertheless, given that this paper is restricted to the systematic investigation of *each*-quantifiers, a thorough

investigation of (both homogeneous and hybrid) multiple scope taking would go far beyond its scope.

- (20) a. Mindkét kutató*(^ℓ-nak) csak az Amarilla-projektbe *való*
 both researcher(-DAT) only the Amarilla-project.ILL ATTR
be-von-ás-á-ra *mondok* *nemet.*
 into-pull-NMLZ-POSS.3SG-SUB say.1SG no.ACC
 ‘It holds for both reserchers that I am against only the option according to
 which he is involved in the Amarilla-project.’
- b. *Na például* mindkét projektbe ugyanannak a kollégának
 well for_instance both project.ILL same.DAT the colleague.DAT
a be-von-ás-a, *az nem volt jó ötlet.*
 the into-pull-NMLZ-POSS.3SG that not was good idea
 ‘Well for instance, involving one and the same colleague in both projects,
 that was not a good idea.’

The construction presented in (20b) illustrates multiple internal-scope taking: a non-possessor *each*-quantifier (XP_{dep}) and a possessor focus (YP_{dep}) take internal scope (both to be interpreted relative to V_{emb}) within a DP_{mat} (to be interpreted as a contrastive topic in the information structure that belongs to VP_{mat}). It also demonstrates that Hungarian (presumably due to its very rich morphology) makes it possible to express explicitly, by word order, all potential scope orders (see É. Kiss 1992, subsection 6.1), even within noun phrases. It is a relevant factor, however, that attributive positions, capable of hosting non-possessors (e.g., through *való*-constructions), are preceded by both prenominal possessor positions. Therefore, the language can express all potential scope orders explicitly, by word order, only at the cost of licensing a zone on the left periphery of the noun phrase preceding the DP layer (and the NAK-possessor) that is capable of hosting non-possessor operators (see Alberti & Farkas, to appear b, 2.2.1.3).

6 Syntactic structures

This section provides the syntactic structures of the types of nominal construction discussed in sections 2–5. The four subsections 6.1–6.4 tend to correspond to the four sections in question, respectively. Each discusses a syntactic structure associated with a distinguished example coming from the corresponding section (or a plausibly modified variant). Certain topics will be discussed only in connection with one figure, but the table in the Appendix presents the relevant syntactic positions of all scope takers sections 2–5 discuss. The issue of extraction, for instance, which appears two times in all four sections, will be discussed in 6.3. The question of the connection between the type of scope taking and the presence or absence of the definite article *a(z)* ‘the’ is dealt with in 6.2.

In earlier papers (e.g. Farkas & Alberti 2016), our point of departure was Giusti’s (1996: 126) argumentation that different operator positions are to be assumed in Noun Phrases, at least for some languages. Albanian, Bulgarian, Serbian, and Italian served as the first examples. Then further Romance languages such as Romanian (Giusti 2005) and Latin itself (Giusti and Iovino 2014), and Slavic ones like Polish (Cetnarowska 2014), Slovenian (Mišmaš 2014) and Croatian (Caruso 2016) have been claimed to belong to the group of such languages (see also Roehrs 2013). Sections 25 have pointed out that

Hungarian belongs to such languages, too. In Giusti's (1996: 126) words, "[...] functional projections [situated either immediately below [the DP-layer] or immediately above it] represent the "fine" structure of the DP, in the sense that Rizzi (1997) proposes for CPs." In Hungarian, not only one of these functional zones, but both can be found: (20b) is an excellent illustration of a zone of quantifiers above the layer DP of the definite article, while (15a–b) show quantifiers immediately following the definite article.

In these Giustian studies, however, mainly determiners, adjectives, and different further attributive and determiner-like expressions are assumed to perform operator functions, and not the types of arguments and adjuncts presented in sections 2–6. Therefore, we should extend Giusti's syntactic proposals by incorporating the assumptions of Grohmann's (2003) general cyclical partitioning to syntactic domains. That is, we should apply Grohmann's (2003, 211 (37b)), potentially cyclically repeatable, tripartite nominal structure consisting of a thematic domain ($\Theta\Delta$), an agreement domain ($\Phi\Delta$) and a discourse domain ($\Omega\Delta$), primarily to the rich word-order variations (see Figures 1–4 below). The key to handling the extremely complex morphology of the Hungarian noun phrase is to attribute certain (language-specific) intricacies to a post-Transfer process in PF in Sigurðsson's (2009) spirit.

The following observations on case form Sigurðsson's (2009:42) point of departure, among analogous other observations concerning gender, animacy and number features. (i) Even within one and the same language, there may be extensive variation in case-marking, depending on either linguistic or social variables (constructions, dialects, idiolects, etc). (ii) Where one language uses case to mark a relation, another language may opt for suprasegmental marking or marking of non-argument members of the relevant syntactic relation (prepositions, particles, verbs, complementizers, adverbs, etc). Sigurðsson is led to the conclusion that we should look for an understanding of these facts in PF, the medium that 'broadcasts' Narrow Syntax (NS). Narrow Syntax itself is a much more abstract, or 'semantic', system, which does not operate with PF visible units like inflectional features, nor does it have features that stand in simple one-to-one mapping relations to elements in the perceptible form of language. Uninterpretable features are thus claimed not to be present in syntax; instead, they are a product of the interfaces (Sigurðsson 2009:21). Formal feature values belong to PF only, i.e., they are not syntactic objects but PF 'translations' of more abstract syntactic structures and correlations. Case is nonexistent in syntax. Agreement is a PF copying process, differing radically from abstract, syntactic Agree. Accordingly, much of the 'labor' of traditional syntax happens in PF and is thus invisible to the semantic interface, SF, that is, the computation proceeds on the PF side after Transfer.

This is the point where Grohmann's (2003) tripartite prolific (clausal) domains can be associated with the current view of Transfer (Grohmann 2009:3), which is more intricate than the traditional generative view. Transfer is the 'super-operation' feeding the modular interfaces, made up of Transfer to LF (*Interpret*) and Transfer to PF (*Spell-Out*). Within Phase Theory, Transfer is assumed to apply more than once, throughout the derivation, which leads to a *dynamic* evaluation of Narrow Syntax. Basing himself of Phase Theory, Grohmann (2009:4) accepts that the relevant unit of the derivation subject to Transfer is the phase: simply put, each phase undergoes Transfer. The phase acts as a Spell-Out domain, which means that it undergoes Transfer (to both LF and PF) and then becomes impenetrable for further computation, freezing the material contained within it.

Sigurðsson's (2009) endeavor can be interpreted in this context as follows (Grohmann 2009:10). Chomsky (e.g. 2008) develops an approach according to which

uninterpretable features are deleted prior to (or as part of) Transfer. Sigurðsson pursues the ‘obvious’ alternative, namely, that such features are not present in syntax, but are instead a product of the interfaces. Gender, number, and case are not operative in syntax, but they rather are morphological PF interpretations of syntactic correlations. It is thus assumed and argued for that there is a sharp distinction between discrete *features* in morphology and abstract *relations* in syntax.

Before entering into the intricate details of the syntactic analyses of different Hungarian noun phrase types, let us consider the crucial part of our global picture, and its background motivation. In Hungarian, presumably as a Finno-Ugric heritage, there is a tension between (i) the (still only) partial differentiation of determination/specification from possession (Fokos 1960:232, 1963:7), seen in (10c) in 3.2.1, and (ii) the extremely high level of striving for showing scope order by word order in the discourse domain (e.g. É. Kiss 1992:139–142, 161–171, 2002:113–126). The expression ‘partial differentiation’ refers to the following factors. (i) The possessor either masks the definite article (10c), or, (ii) if it is a personal pronoun, it can immediately precede a demonstrative element (e.g. *a te azon/ama feltételezéseiteddel* ‘with that assumptions of yours’; lit. ‘the you that assumption.POSS.PL.2SG.INS’). (iii) A third option is that if it is a NAK-possessor, it can immediately precede another kind of demonstrative element, which agrees with N_{mat} in number and case (e.g. *Ilinek azokkal a feltételezéseivel* ‘with that assumptions of Ili’s’; lit. ‘Ili.DAT that.PL.INS the assumption.POSS.PL.3SG.INS’, see Ihsane & Puskás 2001). The triple of these three determining elements can be construed as a unit $\langle \text{Dem, D, Dem} \rangle$ of neighboring heads, at least on the assumption that the possessors presented are hosted in their specifiers. The freedom on the left periphery of the Hungarian noun phrase in showing an $\omega_1 > \omega_2 > \dots > \omega_N$ scope order is then restricted by a single requirement: the corresponding sequence $XP_1 > XP_2 > \dots > XP_N$ of argument and adjunct phrases should be mapped onto the left periphery so that the possessor in the sequence, if any, should be pinned on the $\langle \text{Dem, D, Dem} \rangle$ unit appropriately. This practically results in a left periphery with a DP-layer sandwiched by two operator zones (cf. Giusti 1996:126), with this center itself serving as an operator layer performing an ordinary (i.e., non-contrastive, hence logically idle) topic function. The precise place of “pinning” depends on the kind of “push-pin”, that is, the possessor type. A technical consequence of the proposal is that the given ω_P operator-layer should be identified with the DP-layer (see Figures 1 and 4 in 6.1–6.4) or one of the DemP-layers (see Figures 2 and 3) of the Hungarian noun phrase. In other words, a D or Dem position is assumed to host a Top, Q or Foc operator if its specifier hosts a phrase performing such an information-structural function.¹⁶

What is then transferred to LF is trivially the $\omega_1 > \omega_2 > \dots > \omega_N$ scope order. The Sigurðssonian conceptualization of the Grohmannian discourse domain is useful in the course of transferring the sequence of phrases to PF, which gives a fairly eclectic impression if viewed otherwise. Besides the numerous phonetic realizations of possessors, it is the attributivized appearance of scope takers between the two main

¹⁶ If one’s theoretical framework cannot be reconciled with the idea of such multifunctional determining heads, one should assume the — structurally more complex — approach that the string of layers of the operators $\omega_1 > \omega_2 > \dots > \omega_N$ freely combines with the layers of the aforementioned $\langle \text{Dem, D, Dem} \rangle$ unit. This approach should then account for the close link between the possessor role and this determining center by means of additional rules. It is also worth noting at this point that even in the structurally less complex approach of the main text it is admitted that a DP- or DemP-layer can occur with no operator function (i.e., with an empty specifier).

pillars D and N, demonstrated in footnote 9, that presents the major complication. A syntactic approach in which accounting for such intricacies provides the point of departure (e.g., how an argument base-generated on the right periphery gets an attributivized form between D and N, and how it then gets rid of this form in the pre-D zone) is likely to lose sight of the key tendencies. The aforementioned problem, for instance, can be solved in the Sigurðssonian approach by simply saying that Transfer is sensitive to the syntactic relation that a given non-possessor scope taker happens to be between D and N and “broadcasts” that non-possessor in an appropriately attributivized form (cf. (21a–a’) in 6.1). A richer system of “broadcasting” some components of the Hungarian DP structure (for whose precise phonological realization uninterpretable features are responsible in pre-Sigurðssonian minimalist models) will be given in 6.2.

6.1 The structure of expressions of ordinary nouns with an (external-) scope taking XP_{dep}

This subsection presents the syntactic structure of the variant of (1a) in 2.1.1 with an unmarked possessor, repeated here as (21b). The importance of this structure as a first detailed illustration lies with the fact that it is this simpler structure that the thematic arguments and certain adjunct types appearing due to the verbal basis in the case of deverbal nominals (21c) nestle themselves into (see 6.2–6.4). The simplest hypothesis is that (i) ordinary nouns have no thematic roles, so they lack a Grohmannian thematic domain ($\Theta\Delta$), but (ii) their dependents are base-generated in an agreement domain ($\Phi\Delta$) preceded by the N head (21a), and (iii) their prenominal appearance is regarded as performing some information-structural function in the corresponding discourse domain ($\Omega\Delta$) (21a’). As this function is no more than some kind of foregrounding, it is to be regarded as a non-contrastive topic, a function whose performing, relative to a non-operator position, implies no change in model-based truth evaluation. Nevertheless, it is to be regarded as an operator function, not only in order to retain the optimally simple view of the noun phrase structure with a head dividing it into a discourse domain and an agreement domain, but also on account of the relation of topic status to discourse salience. Examples (21a’,a’’,b) present all the three Ω -positions of possessors discussed in the introduction to section 6.¹⁷ The Ω -position of non-operators, whose attributivization problem was mentioned there, is also illustrated here, in (21a’).

- (21) a. [*a két szép régi kocsi*_N $\langle \Phi$ [*a nagyinak*] [*a ház mögött*] \rangle]
 the two nice old car.POSS.3SG the grandma.DAT the house behind
 ‘the two nice old cars of the grandma behind the house’
 a’. $\langle \Omega$ [*a nagyinak*] [*a ház mögött lévő*] \rangle *két szép régi kocsi*_N
 the grandma.DAT the house behind ATTR two nice old car.POSS.3SG
 ‘the grandma’s two nice old cars behind the house’
 a’’. $\langle \Omega$ *a* [*te*] *két szép régi kocsi*_N $\langle \Phi$ [*a ház mögött*] \rangle]
 the you_{sg} two nice old car.POSS.2SG the house behind
 ‘your_{sg} two nice old cars behind the house’

¹⁷ The counterpart of (21a’’) in which the personal pronoun is not foregrounded by occupying an Ω -position is a version constructed simply by omitting the pronoun in question. That is, we should have recourse to *pro*-drop. The *pro* itself can be regarded as occupying a position in $\Phi\Delta$.

- b. [Mindkét fiú *kocsija*] *elromlott*.
 both boy car.POSS.3SG broke_down
 ‘It holds for each of the two boys that the car owned by him broke down.’
- c. Na például [mindkét évben mindkét konferenciára mindkét kutatónak
 well_for_instance both year.INE both conference.SUB both researcher.DAT
 az ugyanabból a projektpénzből való *elküldése*],
 the same.ELA the project_money.ELA ATTR send-NMLZ-POSS.3SG
az egyszerűen képtelenség.
 that simply impossibility
 ‘Well for instance, it is simply impossible that in both years we send both
 researchers to both conferences from one and the same project money.’

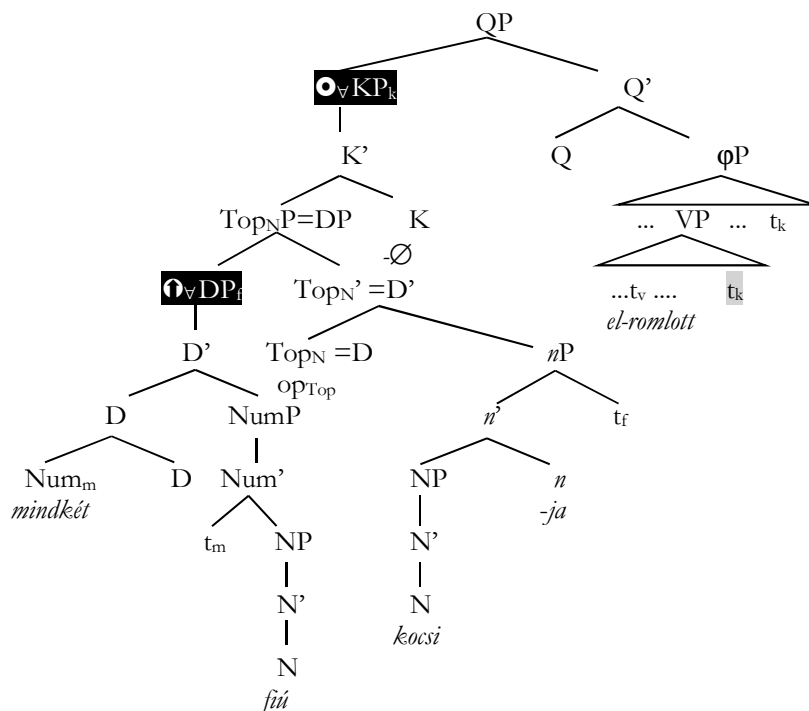


Figure 1: Syntactic structure of (21b)¹⁸

We have constructed the layer hierarchy of the structure of the nominal expression in Figure 1 on the basis of the proposals by Bartos (2000) and É. Kiss (2002:151–180). However, it has required notational and derivational modifications to adapt it to Grohmann’s (2003:227–228) two basic generalizations over derivational dependencies within tripartite clause-like cycles: (i) cycle-internal movement always targets the next higher domain (according to this order: $\Omega\Delta \leftarrow \Phi\Delta \leftarrow \Theta\Delta$), and (ii) movement across cycles targets a position within the same type of domain in the next higher cycle (i.e., $\Omega\Delta \leftarrow \Omega\Delta$, $\Phi\Delta \leftarrow \Phi\Delta$, $\Theta\Delta \leftarrow \Theta\Delta$).

Bartos (2000:678–683), by reference to Baker’s (1985) Mirror Principle, proposes layers between D and N essentially on the basis of the assumption that morphology is frozen syntax, that is, “today’s morphology is yesterday’s syntax” (Givón 1971:413). The

¹⁸ The internal structure of the complement of Q, i.e., the clausal structure, is not elaborated, because in this paper we do not commit ourselves to a definite model of Hungarian clausal syntax. The following new symbols appear in Figures 1–4. \odot_{\forall} : quantifier, percolating *each*-feature: \odot_{\forall} .

morphology of the noun head in (22b) suggests that (i) a PossP-layer builds upon the NP-layer, reflecting the change resulting in a “possessed noun”, and (ii) then comes a NumP-layer for numeral information, and (iii) then an Agr_NP-layer, given the agreement between possessor and possessee in number and person. In Figure 1, (i) PossP is referred to as *n*P on the analogy between the (non-thematic) argument generating function of Poss/*n* and the Agent-licensing function of *v*,¹⁹ (ii) there is no NumP-layer as the singular number does not require its projection, (iii) there is no agreement layer because this kind of agreement is asymmetrical, or defective, in the sense that in possessive structures with non-pronominal possessors there is no agreement (22b’) (Bartos 2000:678–683).

- (22) a. *Na például ... , azok elvesztek.*
 well for_instance those lost.3PL
 ‘Well for instance, ..., that have lost.’
- b. [az_D én] / * [én / nekem Ø_D] / * [nekem a_D] gyönyörű gomb-ja-i-m_N
 the I I / I.DAT I.DAT the beautiful button-POSS-PL-1SG
 Intended meaning: ‘my beautiful buttons’
- b’. a lányok(nak a) gyönyörű [gomb-ja-i / *gomb-ja-i-k]_N
 the girl.PL.DAT the beautiful button-POSS-PL-1SG / button-POSS-PL-3PL
 Intended meaning: ‘the girls’ beautiful buttons’
- c. * [a_D Peru] / ✓ [Peru Ø_D] / * [Perunak Ø_D] / ✓ [Perunak az_D] egykori kincs-e-i
 the Peru / Peru / Peru.DAT / Peru.DAT the one-time treasure-POSS-PL
 Intended meaning: ‘Peru’s one-time treasures’

Our tree building method observes a principle of D-visibility.²⁰ This principle declares that either the specifier or the head of the DP must be spelled out. In Figure 1, for instance, the unmarked possessor should be raised into the DP-layer (also see Figure 4), the default filler of which is the definite article *a(z)* ‘the’ (see Figures 2 and 3; see also footnote 17). Figure 1 also presents another application of the principle: within

¹⁹ The use of *n*P in Hungarian was also proposed by Giuliana Giusti (p.c., 25 May 2016).

²⁰ Its application to Hungarian on the basis of a proposal by Alexiadou (2004:47) is convincingly argued for by Egedi (2015:6), among others. Something similar, namely that economy forces in some languages to have a zero D when Spec,DP is occupied by an overt element and to have a filled D when Spec,DP is non-overt or not filled at all, is proposed in different works by Giusti on Romanian (e.g., Giusti 2005:37) as an Economy Principle. We also argue (without illustration, due to space limitations) that if one accepts the tentative hypothesis, sketched in the introduction to section 6, according to which Spec, Dem_{ez/az}P, Spec,DP and Spec, Dem_{e(z)}P host the three types of possessor, the principle of head-visibility also holds for the Dem_{e(z)}P-layer (i). The other two DemP-layers shown in (i) in their order on the left periphery of the Hungarian noun phrase can be characterized by the following weaker variant of head-visibility: of Spec, DemP and the corresponding Dem head, at least one should be realized phonetically. That is, the Dem head can be null, or alternatively, both the Dem head and Spec, DemP can be phonologically overt. Note that here the stricter head-visibility principle would yield systematic ambiguity due to the homophony of the function word *az*. For instance, *Ilinek az őze* ‘Ili.DAT az deer.POSS.3SG’ would be ambiguous between the readings Ili’s deer / that deer of Ili’s, so the latter should be expressed as follows: *Ilinek az az őze*. At the same time, however, it also holds for the entire determiner system that at most one Dem (of the three potential demonstrative heads belonging to the same N) can be realized phonetically, namely the rightmost one, with alternative variants being ill-formed or having a pejorative connotation.

(i) [... Dem_{ez/az} **D_{a(z)}** Dem_{e(z)} ... Dem_{ezen/azon/eme/ama} ... N ...]
 this/that the this this/that/this/that

the structure of the unmarked possessor *mindkét fiú* ‘both boys’, the quantifier-determiner *mindkét* ‘each’ is raised into the internal DP-layer.²¹

Let us return to the (22a+b/b’/c) possessor variants. The distribution of grammaticality judgments indicates that the position of the unmarked non-pronominal possessor, which masks the definite article, precedes that of the personal-pronominal possessor to the right of the definite article, and is preceded by the position of the NAK-possessor to the left of the definite article. It is a tempting tentative hypothesis to identify the latter two possessor positions with specifiers of demonstratives (see footnote 21), since in this way we obtain the following highly coherent and uniform theory. There are a few determiner heads, including the D head itself, scattered on the left periphery of the noun phrase, and they host the distinguished dependent of N, the possessor, in order to supply it, minimally, with a (logically idle, non-contrastive) topic function. We hypothesize that this accommodation occurs on varied, diachronically accidental, conditions concerning the form of the possessor. Hence, the Sigurðssonian approach that they should be handled as Hungarian-specific PF phenomena, rather than something to be explained in Narrow Syntax, is the most promising choice.

Our last remark on Figure 1 concerns the operator type of the unmarked possessor in Spec,DP. It is not referred to as a quantifier, in spite of the fact that the determiner *mindkét* ‘both’ (‘each.two’) belongs to it. This analysis is nothing else but the technical realization of the Selkirk–Höhle-style *each*-feature percolation (2.1.1), as a result of which the *each*-quantifier function of the possessive argument XP_{dep} is taken over by DP_{mat} , through which DP_{mat} can serve as a quantifier in the information structure that belongs to (the finite verb of) the clause. One might think that this deprivation of the operator feature from XP_{dep} yields a situation in which XP_{dep} is not a legitimate inhabitant of the Grohmannian $\Omega\Delta$ any longer. That is not the case, however. Exactly due to its pronominal position, DP_{mat} still functions as a foregrounded element, practically a non-contrastive topic (in a pragmatic topic-predicate tier, which is partly independent of the logico-semantic relevant-set based operator functions, see Szeteli & Alberti 2017). If the multifunctional D head hosts a topic operator op_{Top} , the specifier of its phrase will be perfectly suitable for hosting XP_{dep} .

²¹ The minimal pair in (i–ii) provides evidence for the raising of *mindkét* ‘both’ (or at least the prefix *mind-*) into the DP-layer. The finite verb indicates that the object is a definite expression, which is explicitly indicated in (ii) by the presence of the definite article *a(z)* ‘the’, too. In (i), either the definite article or *mindkét* must be present, but not together, at least they cannot appear adjacent to each other (cf. (ii)). Therefore, in the corresponding variant, *mindkét* takes over the function of the definite article, in the way that it is raised into the DP-layer. As shown in (ii), however, this requires adjacency; if an attributive, for instance, is inserted between the position of the definite article and that of the original position of *mindkét*, the raising in question is barred. Note in passing that attributives are *ab ovo* not capable of taking over the function of the definite article, given that they need not include elements containing determiners.

- (i) *Továbbküldöm* [**(a / mind-)két tegnap kapott email*].
 forward.1SG the / each-two yesterday received email.ACC
 ‘I am going to forward the two emails I received yesterday.’
 ‘I am going to forward both emails I received yesterday.’
- (ii) *Továbbküldöm* [**(a) tegnap kapott mindkét / két email*].
 forward.1SG the yesterday received each.two / two email.ACC
 ‘I am going to forward both / the two emails I received yesterday.’

6.2 The structure of complex-event denoting deverbal nominal constructions with a scope taking XP_{dep}

The subsection concentrates on the characteristic property of complex-event denoting deverbal nominal constructions that they can have internal information structure. As discussed, in order to capture this special capability, we need an extended DP structure that integrates the morphological (Mirror-Principle-based, Baker 1985) Hungarian traditions (Szabolcsi & Laczkó 1992, Bartos 2000, É. Kiss 2002) with the cartographic Split-DP Hypothesis (Giusti 1996, Ihsane & Puskás 2001) by assuming noun-phrase-internal operator layers (see Grohmann 2003:211 (37b), Alberti & Farkas 2015, and Alberti *et al.* 2017).

Figure 2 presents a syntactic structure constructed in this spirit with its noun-phrase-internal quantifier layer, referred to as Q_{NP} . It represents the structure of a variant of (9b) in 2.1.1, repeated here as (23).

- (23) *Ellenzem [Ilinek a mindkét munkára való felbétel-és-é-ŋ].*
 oppose.1SG Ili.DAT the both job.SUB ATTR up.hire-NMLZ-POSS.3SG-ACC
 ‘I am against hiring Ili to do both jobs. [She can do one of them, I do not mind.]’

Let us consider the relevant details of the syntactic structure in Figure 2. As the given DP_{mat} is a highly verbal nominal expression, namely a complex-event denoting deverbal nominal construction, an appropriately extended VP-structure based upon V_{emb} as its head is assumed to be taken by the nominalizer *-As* in the head N_{mat} .²² We consider this embedded verbal construction located inside DP_{mat} to be the “scope-semantic” source of the internal scope (noting that it is in the absence of such a semantic source that the nominal expressions headed by ordinary nouns discussed in section 2 are not capable of functioning as internal quantifiers). What makes it possible for an internal

²² The thematic domain ($\Theta\Delta$) of this clause-like “verbal hemisphere” is essentially analyzed in Surányi’s (2009:234, 237, 238) sophisticated hierarchical model as follows. Besides the customary VP layer (“containing oblique, goal and theme arguments, as well as internal stative locatives”) and νP layer (“hosting the external argument subjects, and probably also dominating source and orientation of trajectory adverbials”), we need a position for preverbs and other verbal modifiers “below the base position of those elements that cannot “incorporate” [into the verb] and above the base position of those that can.” The given layer is termed PredP by Surányi, because the (phrasal) verbal modifier and the verb form a complex predicate, but we term this thematic layer $\Theta_{\text{Obl}}\text{P}$, given the following typical relation between the preverb and an oblique argument: if a preverb has a compositional meaning contribution, it characterizes the relation between the kind of movement described by the VP and a Goal, Source or Location described by the given oblique argument. In Figure 2, *f* and *m* are the indices marking the entire phrase of the preverb and, within this phrase, the Goal, respectively.

As for $\Phi\Delta$, the embedded V projects (at least) up to $\text{Asp}(\text{ectual})\text{P}$, but it has no projection containing $\text{T}(\text{ense})\text{P}$ (see Alberti 2004, É. Kiss 2006, 2008), because deverbal nominal constructions obligatorily contain even exclusively-perfectivizing preverbs (see Laczkó 2000:314–316) but they express no tense. In our Sigurðssonian approach, the arguments should assign Φ -functions in a very simple way. An argument in $\text{Spec},\Phi_{\text{Cen}}\text{P}$ is marked in Narrow Syntax as a “central” or “distinguished” participant. Then such Hungarian-specific intricacies as its unmarked or default-case marked status (the latter status characterizes the NAK possessor) and the somewhat defective agreement discussed in 6.1 should be accounted for in PF. Other arguments are marked as “non-central” in Narrow Syntax, and hypothesized to obtain, in PF, a case marker given for them as a default stored in the mental lexical network feeding $\Theta\Delta$ in NS (Lohndal 2012).

information structure to be hosted is that the Hungarian noun-phrase structure is (even) more flexible than hypothesized earlier.

In the particular nominal expression in Figure 2, V_{emb} has two arguments (besides the preverb), which are raised into, and can be hosted in, the nominal hemisphere (cf. Dékány 2014). As discussed in 6.1, the nominal hemisphere functions as a reduced Grohmann-cycle with domains $\Phi\Delta$ and $\Omega\Delta$. Here one of the arguments can appear as a possessor. Namely, the Theme or the Agent argument is designated for this role depending on the particular derivation,²³ which is a grammatical function typical of dependents of noun phrases. The possessor is first raised into Spec,*n*P, whose layer is responsible for checking (the mere fact of) possessedness, and then, being a NAK-possessor, it raises further to a pre-D layer reserved for possessors, termed here as DemP (see 6.1).²⁴ The other argument is an oblique-case-marked noun phrase, which is also hosted in the prenominal zone, witnessed by its attributivized form (in a *való*-construction). We follow Ihsane & Puskás (2001:45), whose approach is based on Aboh's (1998) ideas, in assuming that (potentially iterable) functional projections can be inserted between the DP-layer and the NP/*n*P-layer in the Hungarian DP-structure. In this way we get an optimally simple Grohmannian formula with the two domains $\Phi\Delta$ and $\Omega\Delta$ divided by the N head itself, which expands Ihsane & Puskás's original functional zone to the leftmost, pre-D, periphery. This expansion is at the cost of ignoring the difference that in the zone between D and N, but not in the pre-D zone, a non-possessor is spelt out in an attributivized form. This phenomenon might be accounted for by assuming that the two zones belong to $\Omega\Delta$ s of two Grohmann-cycles, and the higher $\Omega\Delta$ is fed by phrases coming from the lower $\Omega\Delta$ ($\Omega\Delta \leftarrow \Omega\Delta$). The Sigurðssonian approach, however,

²³ It is this rule (see Laczkó 2000:307–308, 379, Alberti & Farkas to appear a, 1.3.1.7) that explains the observation that a possessor XP_{dep} can never have internal scope if (i) DP_{mat} is a (non-complex-event denoting) deverbal nominal construction and the semantic role of the given possessor is (chosen to be) different from the role designated in the given derivation (see ex. (i) in fn. 16 in 4.2.1), or (ii) N_{mat} (in the center of DP_{mat}) is a non-derived noun (see (ii–iii) in fn. 16 and (1b–c) in 2.1.1). Thus we claim that XP_{dep} can have noun-phrase-internal scope on condition that a syntactic operation associates it with an argument within VP_{emb} . This raises the question whether VP_{emb} “develops” in the complement of N_{mat} if N_{mat} is less verbal than a complex-event denoting noun (see (9–10)) but more verbal than an ordinary noun. Such groups of nouns are identified here as simple-event denoting deverbal nominals (in the case of which the head V_{emb} is unequivocally determined in the given derivation) and *story/picture* nouns and *fight/game* nouns (in the case of which the abstract “underlying verb” referred to in 4.2.1) can serve as V_{emb} . As the comparison between the series of examples presented in (11), in which XP_{dep} cannot be interpreted as an internal-scope taker, and those presented in (16–17), in which XP_{dep} does not totally reject (“/?/??”) internal scope, demonstrates, these groups of nouns are Janus-faced. Under special circumstances (see the disambiguated constructions in (16–17)), such syntactic constructions seem to be available to speakers as a VP_{emb} construction in the complement of N_{mat} (essentially in the same way as shown in Figure 2); the data in (16–17) can be accounted for in this way. Otherwise (see (11)), however, the fact that N_{mat} hosts a lexical noun implies that VP_{emb} does not develop at all in syntax, or it develops but the layer of N_{mat} forms a barrier which the aforementioned potential syntactic operation to associate VP_{emb} -internal positions with positions in the nominal “hemisphere” of DP_{mat} is not capable of penetrating.

²⁴ In earlier models (Szabolcsi & Laczkó 1992, Bartos 2000), NAK-possessors raise to Spec,DP, but the data in (22) in 6.1 suggest that we need a finer-grained layer structure if we also intend to satisfy the principle of D-visibility. As discussed, the “cheapest” solution is to identify Spec, Dem_{Az}P with the operator position of the NAK-possessor, by inserting the operator in the Dem head. As for its pragmasemantic content, the possessor is simply foregrounded in order to obtain discourse-salience; it undergoes no change with any consequence for model-based truth evaluation.

enables us to opt for a much simpler and more elegant solution with one $\Omega\Delta$ in the nominal hemisphere: on the basis of the abstract narrow syntactic relations ‘dominates DP’ and ‘dominated by DP’, it is calculated in the PF component whether a non-possessor should appear in an attributivized form or not. The “broadcasting” of a possessor is an analogous story: it is also its relative narrow syntactic position with respect to DP that decides how its morphological form is calculated in PF.

Table 2 presents a broader picture of how the abstract NS-relations ‘dominates DP’, ‘dominated by DP’, ‘dominates N’ and ‘dominated by N’ determine the post-Transfer realization of the language-specific details of the Hungarian DP structure for whose phonological realization NS-internal uninterpretable features must be responsible in pre-Sigurðssonian minimalist models (see fn. 22 on the variation of demonstratives). A Sigurðssonian description of the (non-trivial) agreement system is postponed to future research (see (22) in 6.1).

	pre-DP zone	zone between DP and N	post-N zone
case marking of possessor XP_{dep}	marked by NAK	unmarked	marked by NAK
marking of non-possessor XP_{dep}	unmarked	attributivized	unmarked
form of approximative Dem	$e\check{z}$ (agreeing in case and number)	$e(\check{z}) / eme / e\check{z}en$ (non-agreeing)	—
form of distal Dem	$a\check{z}$ (also agreeing)	$ama / a\check{z}on$ (non-agreeing)	—

Table 2: *Post-Transfer realization in PF of some language-specific uninterpretable details of the Hungarian DP structure*

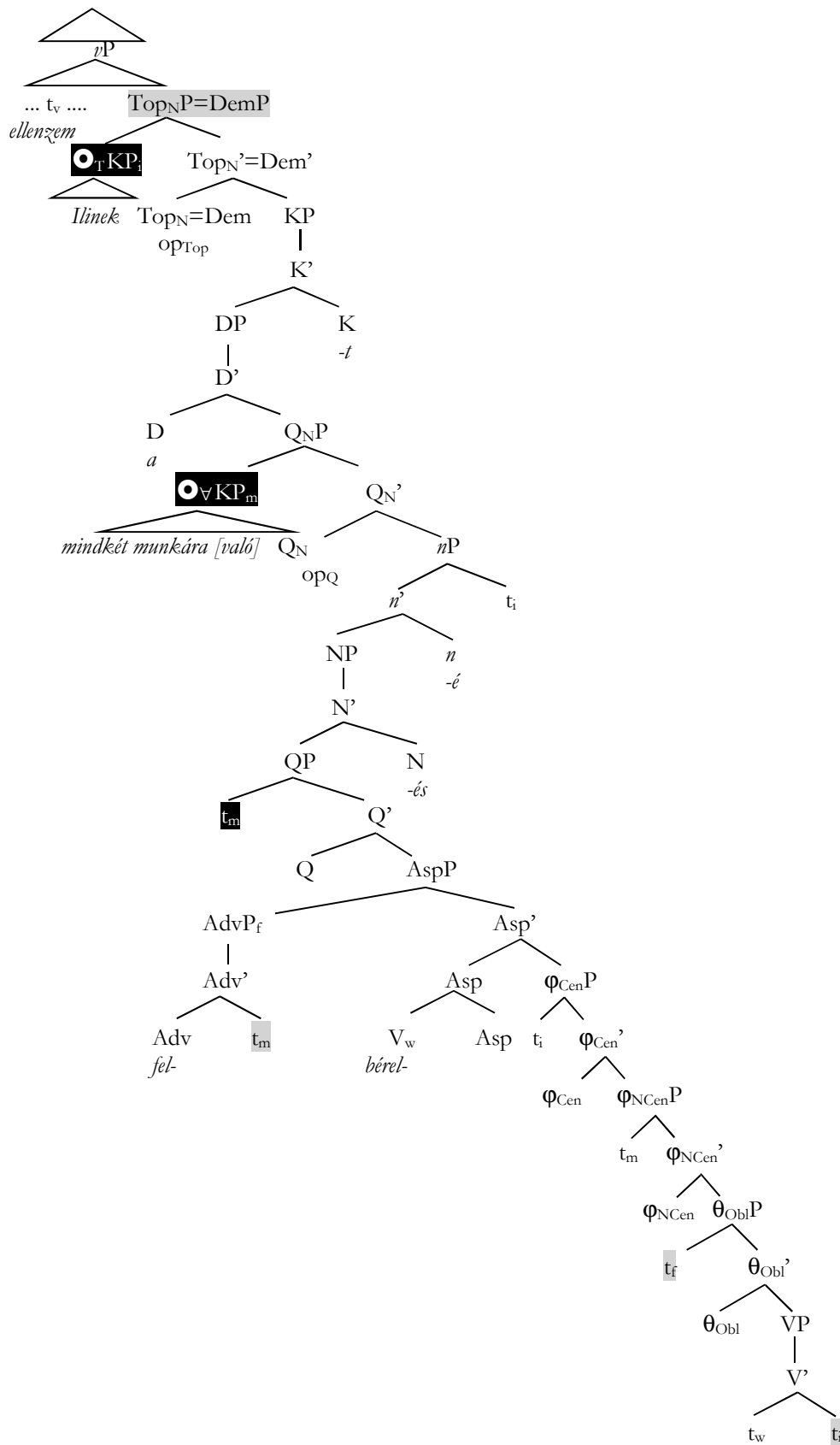


Figure 2: Syntactic structure of (23)

Let us now return to the system in 3.2.1 of ambiguous nominal expressions (9a,b and 10c) and unambiguous ones (9c and 10a,b). We repeat here (9a) as (24a–a') and (10a–b) as (24b–b') with the difference that in (24) simple stress marks help the reader to differentiate the readings with an external-scope taking quantifier (24a,b) from those with an internal-scope taking one (24a',b'). The symbols ‘~’ and ‘#’ mark unstressed words and obligatory pauses between words, respectively, according to the authors’ own native speaker intuition (the precise prosodic differences, if any, are not yet known, see e.g. Surányi & Turi 2017). See also the relevant rows of the table presented in the Appendix.

- (24) a. *Ellenzem* [Péter *felbérél-és-é-t* # 'mindkét munkára].
 oppose.1SG Péter up.hire-NMLZ-POSS.3SG-ACC both job.SUB
 ‘It holds for each of the two jobs that I am against hiring Péter to do it. [Péter is not allowed to work for us at all.]’
- a'. *Ellenzem* [Péter *felbérél-és-ét* "mindkét munkára].
 oppose.1SG Péter up.hire-NMLZ-POSS.3SG-ACC both job.SUB
 ‘I am against hiring Péter to do both jobs. [Péter can do one of them, I do not mind.]’
- b. [?][Mindkét 'munkára *való felbérél-és-ed-et*] *ellenzem.*
 both job.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC oppose.1SG
 Meaning [the same as Meaning 1 in (9c)]: ‘It holds for each of the two jobs that I am against hiring you to do it. [You are not allowed to work for us at all.]’
- b'. [A "mindkét ~munkára *való felbérél-és-ed-et*] "*ellenzem.*
 the both job.SUB ATTR up.hire-NMLZ-POSS.2SG-ACC oppose.1SG
 Meaning [the same as Meaning 2 in (9c)]: ‘I am against hiring you to do both jobs. [You can do one of them, I do not mind.]’
- c. *Ellenzem* [*a (te) felbérél-és-e-d-et* mindkét munkára].
 oppose.1SG the you up.hire-NMLZ-POSS-2SG-ACC both job.SUB
 Meaning 1: ‘It holds for each of the two jobs that I am against hiring you to do it. [You are not allowed to work for us at all.]’
 Meaning 2: ‘I am against hiring you to do both jobs. [Péter can do one of them, I do not mind.]’

This distribution of data with respect to (un)ambiguity can straightforwardly be accounted for by hypothesizing that there is (only) a partial difference between the unmarked-possessor dependent and the attributivized non-possessor dependent. Namely, in Hungarian the former *must* (24a–a'), while the latter *can* (24b–b'), optionally be raised into the DP-layer, masking the definite article in this way. The obligatory raising of the unmarked possessor yields ambiguity in the aforementioned ambiguous nominal expressions: one and the same form needs to be associated with the two possible interpretations that V_{emb} and V_{mat} offer via their information structures. The optional raising of the attributivized non-possessor, however, opens up the possibility for associating the two potential readings with different phonetic forms. Of the alternatives, it is plausible that the reading on which XP_{dep} takes internal scope (see (24b), cf. (10b) and (9c/Meaning 2)) is associated with the alternative in which the definite article is present: the definite article “hides” the scope taking XP_{dep} from VP_{mat} “outside”, making possible for XP_{dep} only to take internal scope. In other words, if D is realized phonetically, the Selkirk–Höhle-style *each*-feature percolation (2.1.1) is barred. Otherwise, however, XP_{dep} is not hidden from VP_{mat} and its information structure. That is, if

Spec,DP is realized phonetically, nothing bars the process of operator feature percolation, but $\Omega_N\Delta$ is open for VP_{mat} .

As mentioned in 3.2.1, there is microvariation with respect to how readily speakers raise an attributivized non-possessor into the DP-layer. Certain speakers seem to categorically reject this kind of raising, insisting that only the unmarked possessor can (and must) be raised into the DP-layer. For them, thus, the option discussed in the previous paragraph does not exist. Nevertheless, they pattern with speakers of the more liberal variety in judging the nominal expressions referred to as unambiguous in the previous paragraph ((24b–b’); (9c) and (10a,b)) as unambiguous. This suggests that even the latent option disambiguates the given type of nominal expression with the definite article present.

The ambiguous status of the word order in (24c) suggests that, unfortunately, it is not a general rule that the definite article “hides” the scope taking XP_{dep} from VP_{mat} “outside”. The given word order can (also) be associated with an external scope taking XP_{dep} . This fact must be related to the fact that D-visibility makes it obligatory for the definite article to appear (as shown by (22b), pronouns are not suitable for filling Spec,DP). The “shading” effect only holds for “optional” definite articles (24b–b’). The intricate picture can be explained with reference to principles of economy, an integral part of minimalist models.

The competing structures are presented in Table 3. The crucial economy assumption is that there are three definite articles in Hungarian, of which ‘AZ’ is not permeable for percolating features while ‘ \emptyset ’ and ‘az’ are permeable (on the empty realization of the Hungarian definite article, see Alberti *et al.* 2017). They are strictly ordered with respect to economy in this way: [AZ > \emptyset > az] (i.e., AZ is the most economical, that is, the cheapest, alternative). As for PF, ‘AZ’ and ‘az’ are spelled out as $a(z)$ while ‘ \emptyset ’ is an empty allomorph (\emptyset). This (undoubtedly stipulative) assumption can be motivated by saying that the order is intended to express the difference in permeability ($a(z)$ vs. \emptyset), but D-visibility obscures the picture. Note that (24b) reveals a surprising pattern: it is worth opting for the preferred ‘ \emptyset ’ (at least for certain speakers) even at the cost of placing a non-possessor in Spec,DP; which is a possibility left open when there is no possessor to occupy Spec,DP.

	scope	Spec,DP	AZ	\emptyset	az
(24a)	external	poss.	*: percolation *: D-visibility	✓	*: D-visibility
(24a’)	internal	poss.	*: D-visibility	✓	*: D-visibility
(24b)	external	?non-poss.	*: percolation *: D-visibility	✓	*: D-visibility
		-	*: percolation	*: D-visibility	✓ → *: economy
(24b’)	internal	non-poss.	*: D-visibility	✓ → *: economy	*: D-visibility
		-	✓	✓ → *: economy	✓ → *: economy
(24c)	external	-	*: percolation	*: D-visibility	✓
(24c)	internal	-	✓	*: D-visibility	✓ → *: economy

Table 3: *Competition between three variants of the definite article in Hungarian*

Thus, in the case of the variants with XP_{dep} as an external scope taker (24a,b,c), the principle of D-visibility will chose between ‘ \emptyset ’ and ‘az’, which permits feature

percolation; if ‘ \emptyset ’ is not excluded (24a,b), it is the preferred solution. In the case of the variants with XP_{dep} as an internal scope taker (24a’,b’,c), permeability is irrelevant. Hence, the economically preferred ‘AZ’ will win (24b,c) unless D-visibility excludes this choice (24a’).

6.3 The structure of scope taking nominal constructions with an internal-scope taking XP_{dep}

As pointed out in section 4, if XP_{dep} takes internal scope, DP_{mat} is free to take independent scope, obviously in the information structure of VP_{mat} . The syntactic representation of a case like this requires no novel assumptions. What is needed is no more than the combination of the syntactic apparatus presented in Figure 1 (in which DP_{mat} can take (external) scope in the information structure of VP_{mat} due to an operator layer built upon VP_{mat}) and that presented in Figure 2 (in which XP_{dep} can take (internal) scope in the information structure within DP_{mat} licensed by an operator layer appearing in the nominal hemisphere of DP_{mat}).

Therefore, this subsection can concentrate on the remarkable cases in which XP_{dep} with its noun-phrase-internal scope is extracted into the information structure of VP_{mat} in order to simultaneously show the operator function of DP_{mat} (4.1.2, 4.2.2). Our syntactic approach is illustrated via the syntactic analysis of example (14b) in 4.1.2, repeated here as (25).

- (25) ["Mindkét~fiúnak]_{CTOP} "határozottan "ellenzem az elbocsát-ás-á-t.
 both boy.DAT definitely oppose.1SG the dismiss-NMLZ-POSS.3SG-ACC
 ‘As for the option according to which both boys would be sent away, I am
 definitely against that. [As for me, one of them, for instance, can be sent away].’

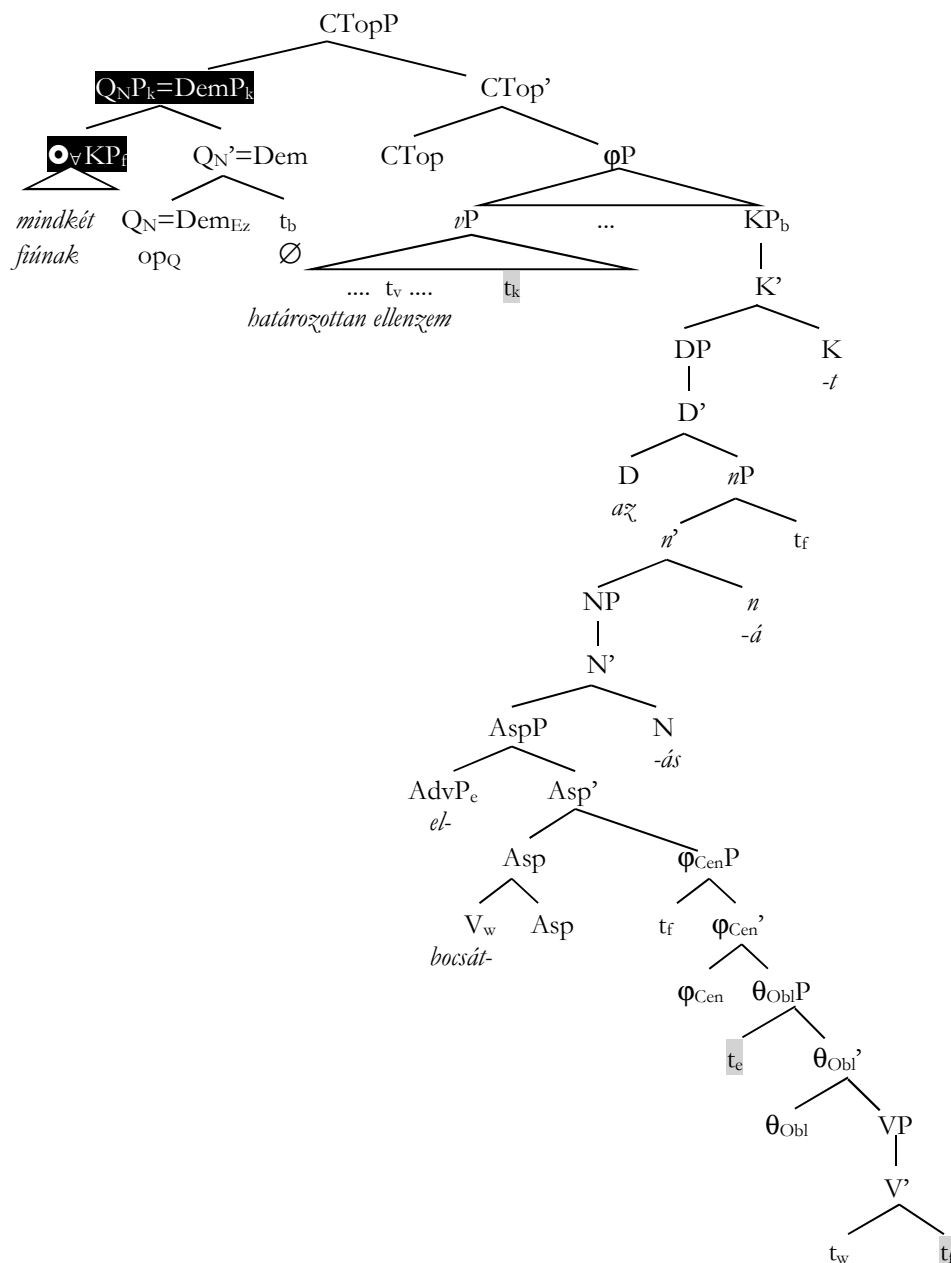


Figure 3: Syntactic structure of (24)

In Figure 3, the quantified expression with noun-phrase-internal scope is not an attributive expression (as was the case in Figure 2), but a NAK-possessor.²⁵ Its QNP layer

²⁵ The NAK-possessor, even if it serves as a quantifier instead of being only foregrounded, can form a constituent with the possessee. This can be verified by means of the classical focus test (Szabolcsi & Laczkó 1992:189) as well as the “for instance”-test proposed by Alberti *et al.* (2015), see (i-ii), respectively.

- (i) *Csak mindkét fiúnak az elbocsátás-át ellenzem.*
 only both boy.DAT the dismiss-NMLZ-POSS.3SG-ACC oppose.1SG
 Meaning [the same as (13a) in 4.1.1]: ‘I am against only the option according to which both boys would be sent away. [As for me, one of them can be sent away].’

above the DP-layer is assumed to be generated as follows: the operator op_Q is inserted in the Dem_{Ez} head.²⁶ Our analysis also accounts for the following facts, by means of the kind of remnant movement proposed by Koopman & Szabolcsi (1999, 2000) and Alberti (2004). (i) The (internal-scope taking) NAK-possessor (referred to as KP_f in Figure 3) appears preverbally, split from DP_{mat} (the object of the matrix verb, referred to as $Q_N P_k = DemP$), which has become a remnant in this way. (ii) The possessor (or rather, its phonetic form) carries (the special contrastive-topic stress pattern of) the external operator function of the complete DP_{mat} . (iii) The extracted part, which appears postverbally, obviously occupying a non-thematic position, is exactly a DP phrase deprived of its leftmost periphery (KP_b), originally in the complement of Dem_{Ez} .

Remarkably, the analysis of the cases in which an external-scope taking dependent (XP_{dep}) is extracted from DP_{mat} (like in (8b), repeated here as (26a)) practically requires one and the same remnant movement. This is crucially due to the fact that the same word order needs to be derived. The only difference is that in the type of (26a) our Selkirk–Höhle-style *each*-feature percolation (2.1.1) yields the following two changes: (i) $DemP_k$, the object of V_{mat} , will obtain a quantifier status, while (ii) the NAK-possessor (KP_f) will “remain” a foregrounded, non-contrastive, topic.

- (26) a. 'Mindkét 'fiúnak *ellenzem* *az* *elbocsát-ás-á-t*.
 both boy.DAT oppose.1SG the dismiss-NMLZ-POSS.3SG-ACC
 'It holds for each of the two boys that I am against his dismissal. [Both should be kept.]'

-
- (ii) *Na például* mindkét fiúnak *az* *elbocsát-ás-á-t*,
 well for_instance both boy.DAT the dismiss-NMLZ-POSS.3SG-ACC
azt *határozottan* *ellenzem*.
 that.ACC definitely oppose.1SG
 Meaning [the same as in (25)]: 'As for the option according to which both boys would be sent away, I am definitely against that. [As for me, one of them, for instance, can be sent away].'

²⁶ The minimal pair presented in (i-ii) is an argument for associating the $Dem_{Ez}P$ -layer with the NAK-possessor, given that nothing can be inserted between the demonstrative pronoun *ez/az* and the definite article *a(z)*. It is shown that all types of possessor should be closer to D than a non-agreeing Dative case-marked argument. Hence, the two types of NAK-phrase can be distinguished on the basis of their distance from D, which is plausible to account for by associating the NAK-possessor with the demonstrative layer adjacent to the DP-layer. It would require another paper to discuss when it is required that a non-possessor on the leftmost position of the noun phrase should be followed by a possessor in $Spec, Dem_{Ez}P$ or in $Spec, DP$ (cf. (i) and (ii)), also depending on such factors as operator types of the given XP_{dep} elements and the potential splitting of DP_{mat} .

- (i) *Na például* mindkét barátodnak mindkét út(nak a) felajánlása,
 well for_instance both friend.DAT both trip(.DAT the) offer.NMLZ.POSS.3SG
az *meggondolatlanság* *volt*.
 that thoughtlessness was
 'Well for instance, offering both friends both trips, that was an act of thoughtlessness.'
- (ii) *Na például* mindkét útnak mindkét barátod*([?]nak a) felajánlása,
 well for_instance both trip.DAT both friend(.DAT the) offer.NMLZ.POSS.3SG
az *meggondolatlanság* *volt*.
 that thoughtlessness was
 'Well for instance, offering both trips to both friends, that was an act of thoughtlessness.'

- b. [Ⓢ]["Mindkét ~ munkára]_{CTop} *ellenzem* *a felbérrel-és-ed-et.*
 both job.SUB oppose.1SG the up.hire-NMLZ-POSS.2SG-ACC
 ‘As for hiring you to do both jobs, I am definitely against that. [As for me, however, you can do one of them.]’ (cf. (18b))
- b'. [Ⓢ]'Mindkét 'munkára *ellenzem* *a felbérrel-és-ed-et.*
 both job.SUB oppose.1SG the up.hire-NMLZ-POSS.2SG-ACC
 ‘It holds for each of the two jobs that I am against hiring you to do it. [You are not allowed to work for us at all.]’ (cf. (12b))

Almost the same pair of parallel analyses based on remnant movement can also be applied to other cases. (i) It can be applied to the cases (presented in (18) in 4.2.2) in which an internal-scope taking non-possessor is extracted from an (external-)scope taking nominal expression (see (26b)). (ii) It can also be applied to the cases (presented in (5a) in 2.2.2 and (12b) in 3.2.2) in which an external-scope taking non-possessor is extracted from the matrix nominal expression, which takes over its operator function and counts as a member of the information structure of VP_{mat} (see (26b')). The Appendix presents all the relevant details.

6.4 Representing hybrid scope taking

The triply ambiguous deverbal nominal construction in (19a) in section 5 should be evoked here. It demonstrated that even hybrid scope taking is permitted in the sense that within one and the same deverbal nominal construction, one dependent (KP_p) of V_{emb} takes internal scope, while another one (DP_k) takes external scope (see (19d), repeated here as (27)). That is, not only double external-scope taking (19b) and double internal-scope taking are permitted (19c); see the Appendix.

The constituent tree in Figure 4 demonstrates the structure of the hybrid variant, with practically no novel technical details emerging. As a result of the Selkirk–Höhle-style *each*-feature percolation (2.1.1), the unmarked possessor in Spec,DP internally serves as a foregrounded topic, while it is the entire DP_{mat} with its gained *each*-feature that performs a quantifier function, but in the information structure of V_{mat} . The non-possessor quantifier, however, remains to serve as an internal scope taker. As declared in section 5 as a potential universal generalization, the percolating operator feature in $\Omega_N\Delta$ dominates the highest position of the non-percolating one.

- (27) [Mindkét kolléga mindkét projektbe *való*
 both colleague both project.ILL ATTR
be-von-ás-á-t] *határozottan ellenzem.*
 into-pull-NMLZ-POSS.3SG-ACC definitely oppose.1SG
 The meaning considered: ‘It holds for each of the two colleagues that I am definitely against the option according to which he would be involved in both projects. [Neither college should be involved in both projects at the same time.]’ (cf. Meaning 3 in (19d))

7 Summary

This paper discussed Hungarian sentences (with VP_{mat} as its finite verbal construction) in which a (possessor or non-possessor) dependent (XP_{dep}) of the noun head (N_{mat}) of a noun phrase (DP_{mat}) is a scope-taking *each*-quantifier.

If N_{mat} is an ordinary noun, XP_{dep} is unavoidably an external-scope taker (section 2), at least as an *each*-quantifier. If N_{mat} is a complex-event denoting deverbal nominal, XP_{dep} can *ab ovo* be interpreted as taking either external or internal scope, depending on such further circumstances as, for instance, the (explicit) presence or absence of the definite article that belongs to N_{mat} (section 3). If XP_{dep} takes internal scope, then DP_{mat} is free to take (independent external) scope in the information structure of VP_{mat} (section 4). It holds for all these cases that XP_{dep} can be extracted from DP_{mat} without any essential changes in potential readings, even if XP_{dep} is an internal-scope taker (see 6.3 and subsection 2 in sections 2–4), yielding the strange situation in which its phonetic form is simultaneously associated with the phonetic features typical of two operator functions (see 4.1.2 and 4.2.2). Even several dependents in DP_{mat} can serve as scope takers, either homogeneously (i.e., uniformly taking internal/external scope) or heterogeneously. The latter option yields a hybrid interpretation according to which (at least) one dependent takes internal scope while other dependents are external-scope takers (section 5).

In order to capture the phenomenon of internal-scope taking within nominal expressions, we proposed a general syntactic representation in which essentially morphology-based approaches to the Hungarian noun phrase are integrated with Giusti's (1996) cartographic Split-DP Hypothesis. The result is a tripartite nominal structure consisting of a thematic domain ($\Theta_{\text{v}}\Delta$), two agreement domains ($\Phi_{\text{v}}\Delta$, $\Phi_{\text{N}}\Delta$) and discourse domains ($\Omega_{\text{v}}\Delta$, $\Omega_{\text{N}}\Delta$), following Grohmann's (2003:211 (37b)) theory of Prolific Domains (section 6). The phenomenon of external-scope taking is accounted for by assuming a Selkirk–Höhle-style mechanism of *each*-feature percolation (2.1.1). Another crucial point of our approach is that the explanation of certain language-specific intricacies are attributed to a post-Transfer process in PF in Sigurðsson's (2009) spirit (see the last sentence of the introduction to section 6).

In this paper, our observations are all based on, and our analyses all pertain to, cases in which XP_{dep} serves as an *each*-quantifier. The investigation of analogous cases with XP_{dep} serving as a focus or other types of operator is left for future research.

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Appendix. Moves of XP_{des} across Grohmann-domains ($\Omega_N \Delta \leftarrow \Phi_N \Delta$, $\Omega_N \Delta \leftarrow \Omega_V \Delta$, $\Phi_N \Delta \leftarrow \Phi_V \Delta$, $\Phi_V \Delta \leftarrow \Theta_V \Delta$, $\Omega_V \Delta \leftarrow \Phi_V \Delta$)

Grohmann-domains		Ω_N		Φ_N		Ω_V	Φ_V		Θ_V
Argument/ <i>Adjunct</i>		nPos*	Pos <i>nAk</i> > <i>a(z)_D</i> > <i>u</i>	nPos*	Pos	nPos*	Pos	nPos*	
Transfer	Phon. form		<i>nAk</i> > <i>a(z)_D</i> > <i>u</i>	\emptyset^k <i>való/lévő</i>	<i>nAk/pro</i>		Pos: <i>nAk</i>	<i>nAk/pro</i>	
	Order	scope	$U \Leftrightarrow \emptyset_D$	scope	Behaghel's Law		scope	Behaghel's Law	
Example \Downarrow									
(1a-a'), (2a-a'), (7a' _M)			\blacktriangle \mathbf{O}_m m2 <i>fiú(nak)</i>		\mathbf{C}				
(6 _M), (8a _M), (8b)			\blacktriangle \mathbf{O}_m m2 <i>fiú(nak)</i>		\mathbf{C}		\mathbf{C}		\mathbf{C}
(6 _M), (7a _M), (8a _M), (13a-14b)			\bullet m2 <i>fiú(nak)</i>		\mathbf{C}		\mathbf{C}		\mathbf{C}
(9 _M)			\blacktriangle Péter		\mathbf{C}_p		\mathbf{C}_p	\mathbf{O}_m m2 <i>m'ra</i>	\mathbf{C}_p \mathbf{C}_m
(9 _M)			\blacktriangle Péter		\mathbf{C}_p	\mathbf{O}_m m2 <i>m'ra</i>	\mathbf{C}_p	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(9b _M), (10c _M)			\blacktriangle Péter	\blacktriangle \mathbf{O}_m m2 <i>m'ra</i>	\mathbf{C}_p		\mathbf{C}_p	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(9b _M), (10c _M)			\blacktriangle Péter	\blacktriangle \mathbf{O}_m m2 <i>m'ra</i>	\mathbf{C}_p		\mathbf{C}_p	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(9c _M), (10a)			\blacktriangle \mathbf{O}_m m2 <i>m'ra</i> <i>való</i>					\mathbf{C}	\mathbf{C}
(9c _M), (10b), (15a-b)			[a]	\mathbf{O}_m m2 <i>munkára</i>			<i>pro_p</i>	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(11a-b), (16a-17b)						\mathbf{O}_m m2 ...		\mathbf{C}	\mathbf{C}
(12 _M), (12b)			\blacktriangle Péter	\blacktriangle \mathbf{O}_m m2 <i>m'ra</i>	\mathbf{C}_p		\mathbf{C}_p	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(12 _M)		\mathbf{O}_m m2 <i>m'ra</i>	\blacktriangle Péter		\mathbf{C}_p	\mathbf{C}_m	\mathbf{C}_p	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(18)		\mathbf{O}_m m2 <i>m'ra</i>	[a]			\mathbf{C}_m	<i>pro</i>	\mathbf{C}_m	\mathbf{C}_p \mathbf{C}_m
(19b)			\blacktriangle \mathbf{O}_k m2 <i>kolléga</i>	\blacktriangle \mathbf{O}_p m2 <i>p'be</i>	\mathbf{C}_k		\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k \mathbf{C}_p
(19c)			\bullet \mathbf{O}_k m2 <i>kolléga</i>	\bullet \mathbf{O}_p m2 <i>p'be</i>	\mathbf{C}_k		\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k \mathbf{C}_p
(19d)			\blacktriangle \mathbf{O}_k m2 <i>kolléga</i>	\bullet \mathbf{O}_p m2 <i>p'be</i>	\mathbf{C}_k		\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k \mathbf{C}_p
*(19e)			\bullet \mathbf{O}_m m2 <i>kolléga</i>	\blacktriangle \mathbf{O}_p m2 <i>p'be</i>	\mathbf{C}_k		\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k \mathbf{C}_p
(20a)			\blacktriangle \mathbf{O}_k m2 <i>kutatónak</i>	\blacktriangle \mathbf{O}_p <i>csak az A. p'be</i>	\mathbf{C}_k		\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k \mathbf{C}_p
(20b)		\mathbf{O}_p m2 <i>p'be</i>	\bullet \mathbf{O}_k <i>u-nak a k'nak</i>		\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k	\mathbf{C}_p	\mathbf{C}_k \mathbf{C}_p
(21a)					<i>a n'nak</i>	<i>a ház mögött</i>			
(21a')			\blacktriangle <i>a nagyinak</i>	\blacktriangle <i>a ház mögött</i>	\mathbf{C}_n	\mathbf{C}_h			
(21a'')			[a] \blacktriangle <i>te</i>		\mathbf{C}_t	<i>a ház mögött</i>			
(21c): <i>Year, Conf, Researcher, Project money</i>		\mathbf{O}_y \mathbf{O}_c	\mathbf{O}_r	\mathbf{O}_p	\mathbf{C}_p	\mathbf{C}_y \mathbf{C}_c \mathbf{C}_p	\mathbf{C}_r	\mathbf{C}_c \mathbf{C}_y \mathbf{C}_p	\mathbf{C}_r \mathbf{C}_c

Symbols: \bullet : quantifier; \mathbf{O} : percolating *each*-feature; \blacktriangle : foregrounded (non-contrastive) topic; \mathbf{C} : non-surface position; Pos: possessor; nPos: non-possessor; *: iterable

Aspect and irregular object case variation in Estonian *da*-infinitive constructions*

David Ogren

The article describes the ways in which various aspectual characteristics and markers affect the total vs. partial object alternation in Estonian *da*-infinitive constructions, where object case usage is far less consistent than it is in finite clauses. The variation in object case in these constructions can be seen as a case of competing motivations, where some elements of the sentence support the use of the total object and others the use of the partial object. Using corpus data, the article explores the interplay between different constructions and aspectual features, revealing a considerable degree of construction-specificity: while some aspectual features prove significant for object case in all the constructions examined, others may have a substantial impact on object case in one *da*-infinitive construction but no impact at all in another construction. Moreover, aside from the core criteria which condition the use of the partitive object in all constructions in Estonian (including finite clauses), none of the relationships between aspect and object case in *da*-infinitive constructions are anywhere close to absolute. Finally, attention is drawn to the notion of the partitive as the default object case and how this default status manifests itself in *da*-infinitive constructions as compared to finite clauses.

Keywords: *aspect, competing motivations, differential object marking, infinitives, variation*

1 Introduction

This paper explores a relatively under-researched phenomenon in Estonian: the irregular variation in object case in *da*-infinitive constructions and its relationship with aspect. The paper illustrates the differences between finite clauses and *da*-infinitive constructions with regard to the role of aspect in object marking, demonstrates that the relationship between aspect and object case in *da*-infinitive constructions cannot be described solely by means of the concept of “boundedness” as commonly understood, and presents quantitative data showing the impact of various aspect-related features on object case in these constructions. As expected, features that facilitate imperfective readings (e.g. durativity and distributivity) are associated with increased partial object use, and features that facilitate perfective readings (e.g. perfective particles and destination adverbials) are associated with reduced partial object use; however, the extent of these aspectual features’ influence on object case varies from one construction to another, and none of them can be said to *require* a particular case for the object, but merely to increase the likelihood that one or another form will be used. The relationship between aspect and object case is therefore much less consistent in *da*-infinitive constructions than it is in finite clauses.

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1.1 Object case in Estonian: the basic rules

Estonian, like other Finnic languages, distinguishes between total and partial objects. The total object (in the nominative or genitive case, depending on the construction) appears when all of the following conditions are met: a) the object modifies an affirmative verb form, b) the object is quantitatively bounded, and c) the verb expresses a bounded action. If any of the above conditions are not met, the partial object (partitive case) is used. (Metslang 2017: 266) In other words, the total object is only used under certain special circumstances, and in all other instances, the partial object is used. Accordingly, some researchers have regarded the partitive as the default object case (see e.g. Vainikka & Maling 1996, discussing Finnish, as well as Lees 2015, discussing Finnic languages in general).

Clearly, the rules for object case as outlined above depend heavily on the concept of “boundedness”, the precise nature of which, for both objects and actions, has long been a popular object of study (see Kont 1963, Pihlak 1985a, 1985b and Tamm 2004, 2012, 2014, among others). It encompasses not only perfectivity (temporal boundedness, i.e. whether the action is conceptualized as completed or in progress), but also telicity (whether or not the event contains an inherent terminal point), as there are many verbs that, due to their intrinsic atelicity, govern partitive objects even if the action is explicitly temporally bounded.¹ These include verbs expressing feelings or sensory perceptions, for instance the verb *armastama* ‘to love’, as in example (1) below:²

- (1) *Armastasin teda/*tema kaks aastat.*
 love.PST.1SG 3SG.PART/*3SG.TOT³ two.NOM year.PART
 ‘I loved him/her for two years.’

The telicity criterion also incorporates the quantitative boundedness of the object, as events with quantitatively unbounded objects (e.g. “I ate some soup”, “he bought books”, etc.) lack a set terminal point and are therefore atelic.

Based on these rules, we can clearly describe the role of verbal/situational aspect in the determination of object case: given an affirmative sentence describing a telic event, the total object expresses perfectivity and the partial object expresses imperfectivity. This opposition is shown in examples (2) and (3) below:

- (2) *Emal lõikas tordid lahti.*
 mother.NOM cut.PST.3SG cake.TOT open
 ‘Mother cut the cake.’ (perfective)

¹ In this paper, the terms *boundedness*, *perfectivity*, and *telicity* are to be understood as indicated above: perfectivity is synonymous with “completedness”, telicity is the property of having an inherent terminal point, and situational boundedness is the combination of perfectivity and telicity: a situation is bounded if and only if it is both perfective and telic. A more detailed discussion of the terminology regarding these and other related distinctions can be found in Chapter 3 of Tamm (2012).

² Abbreviations: ABL = ablative, ADE = adessive, ALL = allative, CMP = comparative, COM = comitative, CON = converb, COND = conditional, DIM = diminutive, ELA = elative, GEN = genitive, ILL = illative, IMP = imperative, INE = inessive, INF = infinitive, NEG = negation, NOM = nominative, PART = partitive, IMP = impersonal, PP = perfective particle, PRS = present, PST = past, PTCP = participle, SUP = supine, TOT = total object form, TRANS = translativ

³ In all example sentences given in this paper, the total object form is glossed simply as TOT. The distinction between nominative and genitive total objects (or the question of whether or not such forms should be labeled as “accusative”) is not relevant to the arguments made herein.

relationship is consistent because the aspectual interpretation of the sentence is determined by the object case itself). While the use of the total object does indeed indicate that the event described in the infinitive phrase is interpreted as bounded, the reverse is not true: the use of the partial object does not by itself reveal whether the event described in the infinitive phrase is construed as bounded or unbounded (assuming that the event is telic, “bounded or unbounded” can be replaced here by “perfective or imperfective”). Therefore, there is no clearly identifiable difference in meaning between the partial and the total object in such cases. As a consequence, when the partial object is used (unless, again, the object is quantitatively unbounded and/or the verb is intrinsically atelic, conditions which trigger the use of the partial object in all constructions, whether finite or non-finite), the event described in the *da*-infinitive phrase is ambiguous with respect to the boundedness criterion.⁵

Unfortunately, this means that it is impossible to conclude anything on the basis of such sentences about how aspect is computed in infinitival clauses, since the result of that computation (i.e. the actual aspectual interpretation of the infinitival clause) remains unclear. Accordingly, the focus of this paper is not on the computation of aspect per se; I do not seek here to re-define the notion of boundedness. Rather, my focus is on variation in object marking associated with more peripheral aspectual indicators, those that do not by themselves suffice to declare a situation bounded or unbounded.

1.3 Aims and structure of the paper

This paper presents a corpus-based investigation of the relationship between aspect and object case in Estonian constructions featuring *da*-infinitive verb forms describing telic events. It explores the influence of a variety of aspectual phenomena on object case, from characteristics such as distributivity and durativity to explicit aspect markers (perfective particles). The paper seeks to determine 1) which aspectual features have the largest impact on object case in *da*-infinitive constructions and 2) how *da*-infinitive constructions differ from one another, as well as from finite clauses, with respect to the impact of these aspectual features on object case. Throughout the paper, comparisons will be made between *da*-infinitive constructions and finite clauses, highlighting the different, irregular usage observed in the former.

The paper is divided into eight sections. Section 2 gives an overview of the various aspectual properties and oppositions which have been discussed in previous literature on aspect in Finnic languages and introduces the particular *da*-infinitive constructions that will be examined in the paper. Section 3 summarizes the data and methods used in the study. Sections 4–7 examine the relationships between individual aspectual features/oppositions and object case in these constructions. The findings of the paper are summarized in section 8.

⁵ Note also that the aspectual interpretation of the sentence *as a whole* may not line up with the choice of object case in the *da*-infinitive phrase. In (4) and (5), regardless of which object case is used, the sentence as a whole is clearly unbounded, due to the finite verb *tahbis* ‘wanted’.

2 Background: Estonian *da*-infinitive constructions and aspectual parameters

The Estonian *da*-infinitive is a “neutral” form that merely expresses an action without conveying any clear temporal meaning. It appears in a wide variety of grammatical roles, including:

- a) subject, e.g. *Mõtelda on mõnus* ‘Thinking is pleasurable’;
- b) object, e.g. *Katsu selle peale mitte mõtelda* ‘Try not to think about that’;
- c) predicative, e.g. *Jüri ainus siht on edasi jõuda* ‘Jüri’s only aim is to move forward’;
- d) attribute, e.g. *Maris tärkas kibk plebku panna* ‘An urge to scamper away arose in Mari’

(Erelt et al. 2007: 263–265)

In all of the roles shown above, the *da*-infinitive form may take an object.

This paper examines four common *da*-infinitive constructions, previously described in Penjam (2008) and Ogren (2015a: 286–287), which often occur with objects. They are as follows:

- i) The purpose construction (*otstarbe- ja põhjuslausekonstruktsioon*), in which a non-finite subordinate clause expresses the purpose or reason for doing something (Penjam 2008: 117):

- (6) *Jaan läheb metsa, et tappa põder.*
 Jaan.NOM go.PRS.3SG forest.ILL to kill.INF moose.TOT
 ‘Jaan is going into the forest to kill a moose.’

- ii) The assessment construction (*hinnangukonstruktsioon*), consisting of a *da*-infinitive phrase in subject position and an adjectival predicate expressing the speaker’s assessment of the activity described by the infinitive phrase (Penjam 2008: 117):

- (7) *On parem osta odav arvuti.*
 be.PRS.3SG good.CMP.NOM buy.INF cheap.TOT computer.TOT
 ‘It is better to buy a cheap computer.’

- iii) The translative adverbial construction (*translatiivadverbiaaliga kavatsuskonstruktsioon*), in which a nominal in the translative case serves as the predicative and the *da*-infinitive phrase is the subject (Penjam 2008: 65):

- (8) *Tema eesmärgiks on leida viirusele ravim.*
 3SG.GEN goal.TRANS be.PRS.3SG find.INF virus.ALL cure.TOT
 ‘His/her goal is to find a cure for the virus.’

- iv) The object construction (*objektikonstruktsioon*), where the *da*-infinitive phrase serves as the direct object (Penjam 2008: 74–75):

- (9) *Tabame leida probleemile lihtsa lahenduse.*
 want.PRS.1PL find.INF problem.ALL simple.TOT solution.TOT
 ‘We want to find a simple solution to the problem.’

Crucially, unlike objects of finite verbs, objects of *da*-infinitive forms in such constructions may appear in the partitive even when the object nominal is bounded and the verb does not reasonably allow an imperfective interpretation. This is illustrated in the following example, featuring the assessment construction with the punctual verb *leida* ‘to find’:

- (10) *Süüdlast on alati lihtne leida.*
 culprit.PART be.PRS.3SG always easy.NOM find.INF
 ‘It’s always easy to find a culprit.’

There are a number of different types of aspectual indicators which may influence object case usage. The most salient aspectual parameter in Estonian is unquestionably boundedness, which plays a role in object case in all constructions (regardless of mood, voice, finiteness of verb, etc.): if the boundedness criteria are not met, the total object form cannot be used. However, there are a range of other aspectual parameters/oppositions to consider, which in finite clauses may have no effect at all on object case (or whose effect on object case can be explained entirely via the boundedness criterion as typically interpreted) but emerge as relevant factors to consider when analyzing object case in non-finite constructions. Some of these factors may explain the seemingly anomalous use of the partial object in sentences such as (10) above, where the boundedness criterion as typically understood points clearly in the direction of the total object. Erelt (2017: 112) distinguishes three types of aspect:

1. Boundedness aspect, i.e. perfectivity⁶
2. Phasal aspect: continuativity, progressivity, etc.
3. Quantitative aspect: iterativity, distributivity, frequentativity

Of particular interest for the purposes of this article are perfectivity, continuativity (more broadly, durativity), and distributivity.

Perfectivity in Estonian can be expressed by the following lexical/syntactic means:

- i) Perfective particles, the most common of which is *ära*:

- (11) *Sõin pudru ära.*
 eat.PST.1SG porridge.TOT away
 ‘I ate (**up**) the porridge.’

- ii) Clause elements expressing the destination (end location, recipient/beneficiary, or end state) of an action:

- (12) *Ta viis lapse kooli.*
 3SG.NOM take.PST.3SG child.TOT school.ILL
 ‘She took the child **to school**.’

- iii) The total object case alone, with no destination adverbial or perfective particle:

⁶ Erelt (2017) treats perfectivity (*perfektiivsus*) and boundedness (*piiritletus*) as synonyms.

- (13) *Kirjutasin pika kommentaari.*
 write.PST.1SG long.TOT comment.TOT
 ‘I wrote a **long comment.**’

It should be noted that while the use of the total object by itself necessitates a perfective reading, perfective particles and destination adverbials do not; imperfective uses (with partial objects) are also possible, e.g. *Ta viis last kooli* ‘She was taking the child to school’ (cf. example (12) above). It is thus object case that determines whether the sentence is given a perfective or imperfective reading. However, in non-finite constructions, the presence of destination adverbials or perfective particles, which emphasize the boundedness of the event, may increase the frequency with which the total object is used. Perfective particles will be further discussed in section 5, destination adverbials in section 7.

Continuativity is the property of an event as having started at some point in the past and continuing onward; it can be expressed in Estonian by adverbs indicating duration (Erelt 2017: 119), such as *aina* ‘always, continually’ and *muudkui* ‘all the time, constantly’ as well as by verbs whose meaning inherently contains or implies it, e.g. the verbs *jätkama* ‘to continue (trans.)’ and *jätkuma* ‘to continue (intrans.)’. An example of a sentence with continuativity expressed by the verb *jätkama* is given in (14) below.

- (14) *Niisiis me jätkasime oma otsinguid, et*
 thus 1PL.NOM continue.PST.1PL our search.PART.PL to
leida tõelist siirast egiptlast, kes
 find.INF true.PART sincere.PART Egyptian.PART who.NOM
meid libtsalt aidata tabab.
 1PL.PART simply help.INF want.PRS.3SG
 ‘Thus we continued our searches, in order to find a true sincere Egyptian who
 just wanted to help us.’
- (ETT)⁷

For the purposes of this article, however, I will focus not on continuativity *per se*, but rather on the broader notion of durativity (in the simple sense of “having (marked) duration”), of which continuativity is a subset, as the notion of “continuing onward” naturally implies some degree of prolonged duration. The influence of durativity markers on object case in *da*-infinitive constructions will be explored in section 4.

The properties of iterativity and distributivity both concern the repetition of an event. They differ in that iterativity refers to the repetition of an event with the same participants, while in the case of distributivity, one or more of the participants in the event is changed from one repetition to the next (Erelt 2017: 126–127). An example of a distributive event is shown in (15) below:

⁷ The abbreviation (ETT) indicates that the example sentence has been taken from the etTenTen corpus of Estonian online texts (see section 3).

- (15) *Näiteks on tema vastuvõtule tulnud*
 example.TRANS be.PRS.3SG 3SG.GEN reception.ALL come.PTCP
noori naisi, kes tahavad last
 young.PART.PL woman.PART.PL who.NOM want.PRS.3PL child.PART
saada, kuid pöörduvad järgmine kord nuttes
 get.INF but turn.PRS.3PL next.NOM time.NOM cry.CON
abordisooiviga tagasi.
 abortion.desire.COM back
 ‘For example, she has received young women who want to have a child, but
 then come back crying and wanting an abortion.’
 (ETT)

The meaning of (15) is distributive because it refers to a repeating situation (young women who want to have a child) with no requirement that the same people be involved in each repetition. In addition to examples such as this, the notion of distributivity will also be used to describe sentences that may be traditionally classified as generic or gnomic, such as example (10) above, repeated below as (16):

- (16) *Süüdlast on alati lihtne leida.*
 culprit.PART be.PRS.3SG always easy.NOM find.INF
 ‘It’s always easy to find a culprit.’

In generic sentences like this, distributivity is implied; the sentence holds true in any situation, regardless of the identity of the participants. Distributive and iterative situations can be collectively referred to as “repeating situations”, the term that will be used throughout this article.

Finally, a further key concept for the purposes of the present analysis is that of competing motivations (see e.g. MacWhinney *et al.* 2014). As illustrated in example (16) in the previous paragraph, sentences may feature multiple aspectual indicators; here, while the punctual verb *leida* ‘to find’ favors the use of the total object, the adverb *alati* ‘always’ and the assessment adjective *lihtne* ‘easy’ render the situation sufficiently unbounded to make the partial object possible. The choice of object case can thus be seen as the product of the competition between the factors (“motivations”) favoring the partial object and those favoring the total object. The interplay between conflicting aspectual characteristics such as these is a focal point of this paper.

It is worth clarifying here that there is a crucial difference between the notion of competing *motivations*, as intended here, and competing *constraints*, as applied in e.g. the optimality-theoretic account of case assignment in Finnish given in Kiparsky (2001). Kiparsky’s focus is on describing the overall system of case assignment; he puts forth a ranked constraint system to explain which circumstances yield which object form. Such an approach is indeed suitable for describing the general rules for object case, but it would be of no use in explaining the data I present in this article. My focus herein is not on explaining the system itself, but rather on explaining the variation within it, i.e. examining the facts on object case usage in instances where the general rules prove insufficient and in fact both the partial and total object are possible. (It bears repeating that in such sentences, as established in examples (4) and (5), there is no clear difference in meaning between the partial and total object, and therefore the choice of object case cannot be said to reflect the aspectual interpretation of the *da*-infinitive phrase. It does reflect the competing influences of various aspectual features, as will be shown in

sections 4–7 of this paper, but that competition cannot on the basis of object case usage be reliably distilled into an overall interpretation of “bounded” or “unbounded”, either for the infinitive phrase or for the sentence as a whole).

3 Material and method

This article employs data from the etTenTen corpus of Estonian online texts,⁸ which covers a variety of domains including government websites, blogs, forums and news sites, as well as religious and informative texts. The etTenTen corpus has been chosen for its size (330 million tokens), its modernity and its diversity. Example sentences from the corpus presented in this article are marked with (ETT).

Relevant sentences were extracted from the corpus by searching for sentences containing the core elements of the particular construction in question (a clause containing a *da*-infinitive and an object nominal, as well as sometimes specific lexemes, e.g. the adjective *lõhtne* in the assessment construction, the noun *soov* in the postposed attribute construction, or the subordinating conjunction *et* in the purpose construction). In order to properly isolate the aspectual phenomena under investigation from other factors, however, a great number of sentences have been excluded from consideration. Specifically, sentences have been omitted if they meet any of the following conditions:

- 1) the *da*-infinitive phrase describes an atelic event (because in this case, the object always appears in the partitive and there is no variation to analyze, e.g. example (1));
- 2) the main verb is negated (since negation triggers the use of the partitive);
- 3) the object nominal is quantitatively unbounded (e.g. mass nouns; again, in this case, the object always appears in the partitive);
- 4) the object nominal is in the plural (as the partitive plural in Estonian may indicate the unboundedness of either the action or the object (or both), it is often difficult to determine its precise meaning in a given sentence. As such, sentences with partitive plural objects cannot be reliably analyzed for the purposes of this study, and therefore, in order to avoid biasing the sample, *all* sentences with plural objects, whether partial or total, must be excluded);
- 5) the object nominal is a pronoun (pronouns as objects appear uncommonly often in the partitive, and usage is less consistent than with non-pronominal objects);
- 6) the case of the object nominal is impossible to determine due to homonymy of forms (e.g. if the nominative and partitive singular forms of a word are identical).

These conditions may be more succinctly summarized as follows: sentences are admissible for inclusion in the study if and only a) if the object is a singular, quantitatively bounded common or proper noun, b) the main verb is in the affirmative form, c) the *da*-infinitive phrase describes a telic event and d) the forms of the partial and total object are morphologically distinct from one another. As these rules illustrate, this paper thus takes for granted the well-established rules requiring the use of the partitive for objects which modify atelic verbs (whether finite or non-finite) or are quantitatively unbounded, in order to focus specifically on the role of aspect in determining object case in *da*-infinitive constructions. This means that the results presented herein do not merely reflect which constructions and elements thereof occur most often with *da*-infinitive phrases

⁸ <https://www.sketchengine.co.uk/ettenten-corpus/>

describing bounded events, but rather answer the question of which constructions and elements thereof are most commonly associated with the appearance of a partial object in the *da*-infinitive phrase, *given that the semantics of the sentence do not rule out the use of the total object*.

All sentences examined have been coded for the aspectual characteristics described in section 2 above, including durativity, repeating/non-repeating situation, and the presence/absence of a perfective particle or destination adverbial. In addition, for each sentence, the word order of the non-finite clause has been recorded, as it has been shown that OV order in *da*-infinitive constructions favors the use of the partial object and VO favors the use of the total object (Ogren 2015b). The overall approach is to identify the relative frequencies of partial and total objects under a variety of different conditions, in order to determine the influence of those conditions (i.e. the aspectual parameters under investigation) on object case.

In order to better isolate the impact of aspectual features on object case, and to eliminate the confounding effect of the varying object case preferences of different verb lexemes, the analysis and statistical results presented in this article are largely based on data from sentences featuring two common verbs. These are the verb *leidma* ‘to find’ in the *da*-infinitive form (in numerous constructions) and, in the object construction, the verb *tahtma* ‘to want’ in its various finite forms. These verbs have been chosen due to their combination of frequency, object case variation (i.e. frequent usage with both partial and total objects), and semantic/aspectual clarity (*leidma* is a typical bounded verb, perfective and telic, while *tahtma* is clearly unbounded, imperfective, and atelic). As such, it should be safe to assume that these verbs are representative of the broader classes of verbs that they belong to (*tahtma* as a typical unbounded verb appearing as the finite verb in the object construction, and *leidma* as a typical bounded verb appearing in the *da*-infinitive form). It is true that these choices reduce the lexical diversity of both verbs and objects represented in the data, but nevertheless, the results observed with these verbs ought to be representative of the general patterns of the language as a whole.

To conclude this section, I would like to add a note regarding the example corpus sentences presented in this article. Examples are given in order to illustrate the typical patterns in usage, to help the reader follow along and better grasp the phenomena under discussion. However, no individual example sentence can meaningfully demonstrate the link between object case and any of the aspectual phenomena discussed herein, because in all of the example sentences, the opposite object case could be used instead. The relationships between aspectual features and object case emerge only when looking at large data samples, where the influences of the aspectual features can be quantified. As such, the explanations accompanying the examples are worded rather conservatively, e.g. “factor X contributes to the use of the partial object”. It would not be accurate to say “factor X *causes* the use of the partial object”, because the total object could be used as well.

4 Durativity

Object case in *da*-infinitive constructions is influenced not only by the semantics of the *da*-infinitive construction itself, but also by elements occurring elsewhere in the sentence which characterize the context in which the activity described by the *da*-infinitive takes place. One such factor is the presence of adverbials expressing the duration of the situation.

In finite clauses, durative adverbials may occur with either total or partial objects, depending on whether the durative adverbial expresses the amount of time required to complete an action (in which case it appears in the comitative, as in example 17) or the amount of time spent performing an action (in which case it appears in the nominative or partitive, as in example 18).

- (17) *Jaan ebitas suvila poole aastaga.*
 Jaan.NOM build.PST.3SG cottage.TOT half.GEN year.COM
 ‘Jaan built a/the summer house in half a year.’

- (18) *Jaan ebitas suvilat pool aastat.*
 Jaan.NOM build.PST.3SG cottage.PART half.NOM year.PART
 ‘Jaan built a/the summer house for half a year.’

In each of these examples, the opposite object case (i.e. partial object in (17), total object in (18)) would be incorrect.

Of the *da*-infinitive constructions examined in this paper, the only one in which explicit expressions of durativity appear with any regularity is the purpose construction. These durativity expressions are analogous to the phrase *pool aastat* ‘half a year’ in example (18) above, merely indicating the duration of the activity expressed in the main clause (unlike in (17), where perfectivity is expressed as well). An example is shown below:

- (19) *Niimoodi vaevas Kossa kuid ja*
 thus trouble.PST.3SG Kossa.NOM month.PART.PL and
kuid oma pead, et leida sobivat
 month.PART.PL own.PART head.PART to find.INF suitable.PART
teemat, romaani ideed, sündmustikku ning
 topic.PART novel.GEN idea.PART plot.PART and
õiget vormi.
 right.PART form.PART
 ‘Kossa wracked his brain like this for months and months, in order to find an appropriate topic, an idea for the novel, the plot and the right form.’
 (ETT)

The time adverbial *kuid ja kuid* ‘for months and months’, appearing in the main clause, emphasizes the duration of the situation and thereby facilitates an imperfective reading of it. Thus, while the event described in the *da*-infinitive phrase is not itself construed as imperfective – it cannot be, since Kossa’s goal is clearly to perform a perfective action, i.e. to actually *find* an idea for the novel, not merely to look for one – the situation as a whole is, and this contributes to the use of the partial object.

Indeed, while the partial object is generally fairly rare in the purpose construction, it appears much more frequently when the main clause includes an adverbial of duration (e.g. *pool aastat* ‘half a year’) or a verb expressing durativity (such as *jätkama* ‘to continue’ in (14) above). Table 1 shows the frequency of the partial object in purpose constructions with the infinitive *leida* ‘to find’, broken down by whether or not there is a durativity marker in the main clause.

Durative marker	Partial object	Total object	Total	Partial object %
Yes	11	8	19	58%
No	18	113	131	14%
Total	29	121	150	19%

Table 1: *Object case variation in the da-infinitive purpose construction featuring the infinitive form leida 'to find', by the presence/absence of a durativity marker in the main clause*

The difference in partial object frequency with and without a durative marker is highly statistically significant ($p < .001$, using a Fisher exact test).

It should be noted that there is no clear relationship between the presence of durativity markers and the perceived realization (or non-realization) of the event described in the infinitive phrase. In some examples, it seems that the presence of a time adverbial facilitates the interpretation that the purpose expressed in the infinitive phrase was/has not been achieved, which would favor the use of the partial object. One such example is (20) below:

- (20) *Ka mina käisin 6 kuud arstide vabed,*
 also 1SG.NOM go.PST.1SG 6 month.PART doctor.GEN.PL gap.PART
et leida tobutu väsimuse põhjust.
 to find.INF huge.GEN fatigue.GEN cause.PART
 'I too went to different doctors for six months in order to find the cause of my
 overwhelming fatigue.'
 (ETI)

It is worth reiterating here that the use of the partial object in cases like (20) is not related to the (im)perfectivity of the infinitive phrase, as an imperfective reading of the infinitive phrase itself is implausible (i.e. the purpose of visiting different doctors is not merely to engage in the imperfective activity of trying to find the cause of fatigue, but rather to achieve the result (perfective) of actually finding said cause). The expression of duration, though, indicates that the process was difficult and perhaps unsuccessful. However, there are also examples in which the partial object is used despite the fact that the sentence explicitly states that the purpose has indeed been achieved. This is illustrated in (21):

- (21) *Pikalt käisime vaatamas, et leida sobivat*
 long.time go.PST.1PL look.SUP.INE to find.INF suitable.PART
pisikest kutsut ja lõpuks selle ka leidsime.
 little.PART puppy.PART and finallyit.GEN also find.PST.1PL
 'We looked for a long time to find the right little dog, and finally we found it.'
 (ETI)

As such, it seems that the increased frequency of the partial object in sentences where the main clause includes a durativity marker can indeed be related to the aspectual meaning contributed by that durativity marker. The explicit mention of the duration draws attention to the process rather than the result, thus encouraging an imperfective interpretation and therefore the use of the partial object. However, even in the presence of a durativity marker, the total object is still possible:

- (22) *Nägin kurja vaeva üle paari aasta,*
 sec.PST.1SG bad.PART trouble.PART over pair.GEN year.GEN
et leida enda kõrvale asjalik ja
 to find.INF own.GEN beside sensible.NOM and
tubli naine.
 capable.NOM woman.NOM
 ‘I went to great trouble for over two years in order to find myself a sensible and capable woman.’
- (ETT)

As demonstrated by the results shown in Table 1, the durativity marker transforms the construction from one in which the total object dominates to one in which total and partial objects appear with roughly equal frequency; the former is motivated by the boundedness of the non-finite clause, the latter by the presence of the durativity marker in the main clause. This stands in contrast to the situation observed in finite clauses, where analogous expressions of durativity *necessitate* an imperfective interpretation and therefore a partial object, as in example (18).

5 Perfective particles (on the example of *ära*)

The most common perfective particle in Estonian is *ära* ‘away’, which has developed from a pure directional adverbial into something approaching a universal perfectivity marker (see Metslang 2001). The particle *ära* can be used to turn an imperfective verb into a perfective one, e.g. *seletama* ‘to explain (imperf.)’ vs. *ära seletama* ‘to explain (perf.)’, as well as to merely emphasize the perfectivity of an action, e.g. *siininitama* ‘to give birth’ vs. *ära siininitama* ‘to give birth (and be done with it)’. This section examines the impact of the particle *ära* on object case in a pair of *da*-infinitive constructions: the assessment construction and the object construction. These two constructions have been chosen because the partial object appears in them relatively frequently (as shown in Ogren 2014, 2017), and therefore the effect of *ära* on object case will be more visible.

First, we will take a look at the assessment construction. The following analysis focuses on examples of the assessment construction with the adjective *lihtne* ‘easy’. This adjective has been chosen due to its frequency as well as the fact that it freely allows the use of both partial and total objects; the partial object occurs roughly 65% of the time (Ogren 2014). The data for assessment constructions featuring the adjective *lihtne* and the particle *ära* is shown in Table 2. As previous studies (see Ogren 2015b) have shown a strong relationship between word order and object case in *da*-infinitive constructions, the results are separated by word order here as well (note that the V for these purposes is the *da*-infinitive form that the object modifies, not the finite copula).

Word order	<i>ära</i>	Partial object	Total object	Total	Partial object %
OV	+	59	13	72	82%
VO	+	2	6	8	25%
OV	-	258	56	314	82%
VO	-	35	100	135	26%

Table 2: Object case variation in the *da*-infinitive assessment construction featuring the adjective *lihtne* ‘easy’, by word order and the presence/absence of the particle *ära*

It is clear from the table above that the presence of *ära* is not sufficient to require the use of the total object; in fact, it appears to make no difference at all, as the partial object frequencies in sentences with *ära* are identical to those in sentences without *ära*. The variation in object case in assessment construction sentences with *ära* is illustrated in examples 23–25 below (partial object in (23) and (24), total object in (25)):

- (23) *Vallo sõnade kohaselt on seda ühte rida seal libtne ära kustutada.*
 Vallo.GEN word.GEN.PL according.to be.PRS.3SG that.PART
 one.PART row.PART there.ABL easy.NOM PP delete.INF
 ‘According to Vallo, it is easy to delete that one row from there.’
 (ETT)

- (24) *Külmutatud spinatiga on libtne rooga ära rikkuda.*
 frozen.PTCP spinach.COM be.PRS.3SG easy.NOM dish.PART PP
 ruin.INF
 ‘It is easy to ruin the dish with frozen spinach.’
 (ETT)

- (25) *Näiteks uue inimesega tutvumisel on libtne unustada ära tema nimi.*
 example.TRANS new.GEN person.COM familiarizing.ADE
 be.PRS.3SG easy.NOM forget.INF PP 3SG.GEN name.TOT
 ‘For example, when meeting a new person, it is easy to forget his/her name.’
 (ETT)

These examples are all clearly perfective in meaning, with the particle *ära* expressing (or at least emphasizing) the completedness of the action; however, as seen in (23) and (24), the partial object is still possible. It is thus clear that the perfectivity of the non-finite clause, even when explicitly expressed, does not render the total object obligatory. Perfectivity is a necessary condition for total object use, but not a sufficient condition.

The picture is somewhat different in the object construction. While there is roughly a 50–50 split between partial and total objects in object construction sentences featuring finite forms of the verb *tahtma* ‘to want’, the addition of the perfective particle *ära* yields a clear preference for the total object. The results are summarized in Table 3; again, data for OV and VO word order in the non-finite clause is presented separately.

Word order	ära	Partial object	Total object	Total	Partial object %
OV	+	29	50	79	36%
VO	+	5	21	26	19%
OV	-	65	48	113	58%
VO	-	33	48	81	41%

Table 3: Object case variation in the *da*-infinitive object construction featuring the finite verb *tahtma* ‘to want’ and the particle *ära*, by word order

The difference in partial object frequency with and without the particle *ära* is highly statistically significant for OV word order ($p = .005$). For VO word order, the p -value is a less robust .060, because of the smaller sample (only 26 sentences with VO word order + *ära*); however, the raw percentage difference in partial object frequency with and

without *ära* is the same for VO as it is for OV, and there is no reason to suspect that the influence of *ära* would be present only with OV word order, so it seems safe to presume that the presence of *ära* does indeed reduce the frequency of the partial object with both word orders. However, as the table indicates, the partial object still appears quite often, even in the presence of *ära*. A few examples to illustrate the variation are presented below (OV word order in examples 26–28, VO word order in example 29).

- (26) *Tahaks seda jama ära lõpetada aga*
 want.COND this.PART nonsense.PART PP finish.INF but
nõutakse selle sigaduse eest veel
 demand.IMPRS this.GEN piggery.GEN for also
käitlustasu.
 processing.fee.PART
 ‘I would like to end this nonsense, but they are charging a processing
 fee for this piggery as well.’ (ETT)

- (27) *Kui NATO meid ei kaitse ja Venemaa*
 if NATO.NOM 1PL.PART NEG defend and Russia.NOM
tahab kogu väega Eestit ära vallutada
 want.PRS.3SG all.GEN force.COM Estonia.PART PP conquer.INF
siis ta ka seda teeb.
 then 3SG.NOM also that.PART do.PRS.3SG
 ‘If NATO doesn’t defend us and Russia wants to conquer Estonia with all its
 might, then it will do so.’ (ETT)

In examples 28 and 29, the total object is used:

- (28) *Kahjuks pole mul võimalust osta*
 unfortunately be.PRS.NEG 1SG.ADE possibility.PART buy.INF
kallimat kraami, kui tahan pere
 expensive.CMP.PART stuff.PART if want.PRS.1SG family.TOT
ära toita ja maksud ära maksta.
 PP feed.INF and tax.TOT.PL PP pay.INF
 ‘Unfortunately I don’t have the option of buying more expensive stuff if I want
 to feed the family and pay my taxes.’ (ETT)

- (29) *Lausa aitasin ta elu päästa, ennast*
 even help.PST.1SG 3SG.GEN life.PART save.INF self.PART
obtu seades, kuigi tegelikuses tahaks
 danger.ILL put.CON although reality.INE want.COND
ära tappa tüübi.
 PP kill.INF guy.TOT
 ‘I even helped to save his life, putting myself in danger, but really I’d like to kill
 the guy.’ (ETT)

The variation in object case in this construction is driven by the competition between the semantically imperfective finite verb *tahma* ‘to want’ (which, in simple sentences with no

non-finite verb, always governs a partitive object) and the semantically perfective infinitival phrase. While the presence of *ära* is enough to clearly shift the balance in favor of the total object, the imperfectivity of the finite verb *tabtma* still proves quite often to be the deciding factor. This is true even when the semantics of the infinitive make an imperfective reading particularly implausible, as in (26) with the verb *lõpetada* ‘to finish’, where it is highly unlikely that what is meant is “I want to be engaged in the process of finishing this nonsense” (imperfective) as opposed to the much more natural interpretation of “I want to finish this nonsense and be done with it” (perfective). Most importantly, however, the competition between perfective and imperfective semantic features in this construction is resolved quite inconsistently; it is not possible to formulate a reliable rule stating when the imperfectivity of the finite verb “outweighs” the perfectivity of the infinitival phrase and when the reverse is true.

What, then, do the assessment construction and the object construction have in common, as regards the influence of *ära* on object case? In the former construction, *ära* appears to have no effect at all, while in the latter construction, its presence significantly increases the likelihood that the total object will be used. In neither construction, then, does it render the total object obligatory. It is instructive here to think back to the basic rules guiding the total vs. partial object opposition in Estonian finite clauses: the total object is used only if *all* of the criteria for its use are met. In other words, the partial object is the default, used unless there is no clear indication of unboundedness. As such, even a non-finite clause describing a maximally unambiguously bounded event may feature a partial object, if there are elements outside the non-finite clause that support an unbounded reading of the whole situation being described. The particle *ära*, when modifying an infinitive, can perfectivize (or emphasize the perfectivity of) the non-finite clause in which it appears, but its impact does not extend outside of that clause.

6 Repeating vs. non-repeating situations

In finite clauses, whether or not a situation is repeating/repeatable (i.e. iterative/distributive/generic) has no discernible effect on object case beyond that which would be predicted on the basis of the boundedness criterion. For instance, in example (30), despite the repeating nature of the situations described, only the total object is possible.

- (30) *Jaan ostab igal hommikul ajalehe.*
 Jaan.NOM buy.PRS.3SG every.ADE morning.ADE newspaper.TOT
 ‘Jaan buys a newspaper every morning.’

The reason for the use of the total object here is that object case in finite clauses is determined by the aspectual properties of an individual repetition/iteration; buying a newspaper is a bounded, telic action. A non-bounded action, whether repeating (31) or not (32), requires the object to be in the partitive:

- (31) *Jaan peseb igal hommikul põrandat.*
 Jaan.NOM mop.PRS.3SG every.ADE morning.ADE floor.PART
 ‘Jaan mops the floor every morning.’

- (32) *Jaan pesi täna hommikul põrandat.*
 Jaan.NOM wash.PST.3SG today morning.ADE floor.PART
 ‘Jaan mopped the floor this morning.’

However, as we have seen, in *da*-infinitive constructions object case does not depend on the semantics of the non-finite clause alone. Rather, factors outside the infinitive phrase may cause the object of the infinitive to appear in the partitive even when the infinitive phrase taken by itself is clearly bounded, consisting of a telic verb and a quantitatively bounded object nominal (see examples (17) and (18), illustrating the influence of durativity markers in the main clause on the object of the infinitive). Accordingly, various *da*-infinitive constructions exhibit a tendency for partial objects to be used more frequently in repeating situations than in non-repeating situations. While each individual repetition may be bounded, that is, as previously established, not by itself sufficient to *require* the use of the total object in combination with a *da*-infinitive form; as such, the repeating nature itself (a property external to the infinitive phrase) may cause the situation as a whole to be seen as unbounded and thereby trigger the use of the partial object.

Interestingly, however, the influence of the repeating/non-repeating situation parameter on object case varies dramatically across different *da*-infinitive constructions. In the purpose construction, where the total object dominates in general and most sentences describe non-repeating situations, the repeating/non-repeating parameter appears to have no effect at all on object case, as shown in Table 4.

Situation type	Partial object	Total object	Total	Partial object %
Repeating	9	39	48	19%
Non-repeating	20	82	102	20%
Total	29	121	150	19%

Table 4: *Object case variation in the da-infinitive purpose construction featuring the infinitive leida ‘to find’, by situation type*

A pair of examples are presented below. In (33), the total object is used in a repeating situation (here, a generic situation; as explained in section 2, generic situations are by their nature distributive, ergo repeating); (34) shows the opposite, a non-repeating situation with a partial object.

- (33) *Et leida tõeline õnn, mida*
 to find.INF true.TOT happiness.TOT which.PART
dalai-laama nimetab ka sisemiseks rahuks,
 Dalai_Lama.NOM call.PRS.3SG also inner.TRANS peace.TRANS
on vaja kaastunnet kõigi subtes.
 be.PRS.3SG necessary compassion.PART everyone.GEN with.regard.to
 ‘In order to find true happiness, which the Dalai Lama also calls inner peace, it is necessary to have compassion for everyone.’

(ETI)

- (34) *Tormasin kobe haiglasse, et leida sealt*
 rush.PST.1SG immediatelyhospital.ILL to find.INF there.ABL
meie legendiks saanud abistajat.
 1PL.GEN legend.TRANS become.PTCP helper.PART
 ‘I rushed immediately to the hospital, in order to find our legendary helper.’
 (ETI)

Like the purpose construction, the object construction also describes overwhelmingly non-repeating situations; however, here we find a higher percentage of partial objects in repeating situations (Table 5).

Situation type	Partial object	Total object	Total	Partial object %
Repeating	68	20	88	77%
Non-repeating	156	133	289	54%
Total	224	153	377	59%

Table 5: *Object case variation in the da-infinitive object construction featuring the verb chain leida tahtma ‘to want to find’, by situation type*

The difference in partial object frequency in repeating vs. non-repeating situations is highly statistically significant ($p < .001$, using a Fisher exact test). Examples (35) and (36) below illustrate a non-repeating situation with a total object and a repeating situation with a partial object, respectively:

- (35) *Nemad tahtsid leida koha, kubu ära*
 3PL.NOM want.PST.3PL find.INF place.TOT where.ILL away
anda voodi ning netist leidsid meid.
 give.INF bed.NOM and internet.ELA find.PST.3PL 1PL.PART
 ‘They wanted to find a place to give the bed away to and they found us online.’
 (ETI)

- (36) *Noored seevastu tahavad ikka leida väärilist*
 young.NOM.PL by.contrast want.PRS.3PL still find.INF worthy.PART
töökohta ja neid maaelu ei tõmba.
 job.PART and 3PL.PART rural_life.NOM NEG attract.PRS
 ‘Young people, by contrast, want to find a good job and rural life doesn’t attract them.’
 (ETI)

In the assessment construction, too, there is a strong relationship. Table 6 shows the effect of situation type on object case in the data for assessment constructions with the adjective *libtne* and the particle *ära* (discussed earlier in section 5).

Situation type	Partial object	Total object	Total	Partial object %
Repeating	53	8	61	87%
Non-repeating	9	10	19	47%
Total	62	18	80	78%

Table 6: Object case variation in the *da*-infinitive assessment construction featuring the adjective *lihtne* ‘easy’ and the particle *ära*, by situation type

Here as well, the difference in partial object frequency in repeating vs. non-repeating situations is highly statistically significant ($p < .001$, using a Fisher exact test). These results generally agree with the findings of Ogren (2014), which examined the effect of situation type in assessment construction sentences *without* the particle *ära*, finding partial object usage frequencies of 77% and 48% for repeating and non-repeating situations respectively.

Example (37) below shows a repeating situation with a partial object, while example (38) features a non-repeating situation with a total object:

- (37) *Autot on väga lihtne ära lõhkuda mõne tunniga*
 car.PART be.PRS.3SG very easy.NOM PP wreck.INF few.GEN hour.COM
piisab vaid lollile sõita anda.
 suffice.PRS.3SG only fool.ALL drive.INF give.INF
 ‘It’s very easy to wreck a car in a few hours, you just have to let a fool drive it.’
 (ETT)

- (38) *Vene riigi kapitaliga on ülimalt lihtne*
 Russian state.GEN capital.COM be.PRS.3SG extremely easy.NOM
kogu eesti riigikese majandus ära nullida.
 whole.TOT Estonianstate.DIM.GEN economy.TOT PP nullify.INF
 ‘With Russia’s capital, it is extremely easy to render null the entire Estonian economy.’
 (ETT)

In addition to these constructions, in which it is possible to find examples of both situation types and both partial and total objects, there is a *da*-infinitive construction in which object case is determined entirely via the boundedness criterion, i.e. there is none of the irregular, inconsistent object case usage found in other *da*-infinitive constructions. This is the translative adverbial construction, examples of which are shown below:

- (39) *Komisjoni ülesandeks on teha*
 commission.GEN task.TRANS be.PRS.3SG make.INF
valitsusele ettepanek keeleauhinna määramiseks.
 government.ALL proposal.TOT language.prize.GEN designation.TRANS
 ‘The commission’s task is to make a proposal to the government for the awarding of the language prize.’
 (ETT)

- (40) *Kursuse eesmärgiks on anda ülevaade*
 course.GEN goal.TRANS be.PRS.3SG give.INF overview.TOT
kirjamärkidest, sümbolitest ja kalligraafia olemusest.
 letter.ELA.PL symbol.ELA.PL and calligraphy.GEN essence.ELA
 ‘The goal of the course is to give an overview of letters, symbols and the basics
 of calligraphy.’
 (ETT)

Crucially, it should be noted that this construction, when used with a singular object (as required for the present study), expresses almost exclusively non-repeating situations; in fact, an examination of 100 translative adverbial construction sentences from the etTenTen corpus does not yield a single example with a repeating situation. It is certainly possible to construct such an example, though. For instance, sentence (40) above can be modified as follows to yield a repeating situation:

- (41) *Kursus on mõeldud kõigile, kelle*
 course.NOM be.PRS.3SG think.PTCP everyone.ALL who.GEN
sooviks on saada ülevaade kirjamärkidest,
 desire.TRANS be.PRS.3SG get.INF overview.TOT letter.ELA.PL
sümbolitest ja kalligraafia olemusest.
 symbol.ELA.PL and calligraphy.GEN essence.ELA
 ‘The course is intended for everyone whose desire is to receive an overview of
 letters, symbols and the basics of calligraphy.’

Such examples, however, are quite rare. In general, the situation is concretized, i.e. confined to a specific actor or actors; it is always *someone’s* goal/task/desire, and that someone is usually a specific entity (even if not explicitly mentioned in the sentence). This concretization renders the situation non-repeating. What we are left with, then, is a construction exhibiting virtually no variation either in situation type or in object case; *da-*infinitive translative adverbial constructions express only non-repeating situations and feature only total objects (assuming that the boundedness criteria are met).

From the data presented in this section, it thus appears that a) within individual constructions (e.g. the purpose construction, object construction, and assessment construction), the partial object is more common in conjunction with repeating situations than with non-repeating situations and b) the partial object is more common in constructions which more frequently express repeating situations (e.g. the assessment construction) than in constructions where non-repeating situations predominate (e.g. the translative adverbial construction). However, there is no clear relationship between the extent to which a construction favors repeating situations and the extent to which situation type is correlated with object case in that construction. Repeating situations are approximately equally frequent in the purpose construction and the object construction, but whereas the repeating/non-repeating situation parameter is relevant to object case in the object construction, it has no effect at all in the purpose construction (at least not with the verb *leida*, although there is no reason to think that the behavior of objects with *leida* is unrepresentative of the behavior of objects with telic verbs in general). Thus it can be stated that situation type is a cross-constructionally relevant parameter for object case in non-finite clauses, but that the degree of its relevance varies across constructions in a way that cannot be reliably predicted from the features of those constructions.

7 Destination adverbials

In finite clauses, the presence of a destination adverbial (marking end location, recipient/beneficiary, or end state) may render an otherwise unbounded situation bounded, thus occasioning the use of the total object. This is illustrated in (42) and (43) below:

- (42) *Veeretasin suurt notti.*
 roll.PST.1SG big.PART log.PART
 ‘I rolled the big log.’
- (43) *Veeretasin suure noti jõkke.*
 roll.PST.1SG big.TOT log.TOT river.ILL
 ‘I rolled the big log into the river.’

Here, whereas in (42) the action is conceptualized as unbounded and the partial object is used, the presence of the destination adverbial *jõkke* ‘into the river’ in (43) brings about a bounded interpretation. The destination adverbial does not itself indicate boundedness – in (43), the partial object *suurt notti* is also possible, and would denote imperfective/continuous aspect (‘I was rolling the big log into the river’) – but it is a necessary element in order for the action to be understood as bounded.

It is natural to surmise that destination adverbials may have a similar effect in *da*-infinitive constructions as well. While markers of boundedness by themselves do not *determine* object case in *da*-infinitive constructions (as we have seen in section 5 of this paper, dealing with the perfective particle *ära*), they may influence it somewhat, increasing the likelihood that the total object will be used. Indeed, the analysis of assessment construction sentences with the adjective *libtne* ‘easy’ in Ogren (2014) found that the frequency of the partial object falls from 67% in sentences with no destination adverbial to 23% in sentences containing such an element. What follows is an examination of the effect of destination adverbials in another *da*-infinitive construction, namely the object construction.

Whereas the analysis in previous sections of this article has relied heavily on data from sentences featuring the infinitive form *leida* ‘to find’, a proper survey of destination adverbials requires the inclusion of a variety of non-finite verbs, in order to obtain sufficient examples of the different types of destination adverbials in existence. The following analysis is based on a sample of 600 sentences featuring the object construction with the finite verbs *tahtma* ‘to want’, *soovima* ‘to wish, desire’ and *püüdma* ‘to try, endeavor’ (200 sentences for each verb) together with various verbs in the *da*-infinitive form. (In addition to the large data samples it affords, the object construction with the verbs *tahtma*, *soovima* and *püüdma* has been chosen for this analysis because it does not exhibit a strong preference for either total or partial objects⁹). The results are summarized in Table 7.

⁹ As previously mentioned, different finite verbs exhibit varying degrees of preference for the partial object in the *da*-infinitive object construction. A thorough discussion of these differences can be found in Ogren (2017). For the purposes of this article, however, it should suffice to note that the verbs *tahtma*, *soovima* and *püüdma* are all fairly similar in this regard, with partial object frequency between 46–53%.

Finite verb	# with DA	Partial object %	# without DA	Partial object %
<i>tahtma</i> 'to want'	72	35%	128	59%
<i>soovima</i> 'to wish, desire'	57	21%	143	56%
<i>püüdma</i> 'to try, endeavor'	53	40%	147	58%
Total	182	32%	418	58%

Table 7: *Object case variation in the da-infinitive object construction, by finite verb and the presence/absence of a destination adverbial (DA)*

The table shows a consistent picture: for all three verbs, the frequency of partial object usage is considerably higher in the absence of a destination adverbial than when such an adverbial is present. Combining the data for all three verbs, the difference in partial object frequency with and without a destination adverbial is highly statistically significant ($p < .001$, using a Fisher exact test). Some example sentences are given below, with destination adverbials expressing end location (44), end state (45) and recipient/beneficiary¹⁰ (46):

- (44) *Alati püüan oma ajakavasse mabutada ka mingi muu trenni.*
 always try.PRS.1SG own schedule.ILL fit.INF also some.TOT other.TOT training.TOT
 'I always try to fit some other training into my schedule as well.'
 (ETT)

- (45) *Meie ruumid ei ole küll väga avarad, kuid sellest hoolimata püüame oma patsientide füüsilise keskkonna muuta võimalikult koduseks.*
 1PL.GEN room.NOM.PL NEG be.PRS indeed very spacious.NOM.PL but this.ELA regardless try.PRS.1PL own patient.GEN.PL physical.TOT environment.TOT change.INF as.possible cozy.TRANS
 'Our rooms aren't very spacious, it's true, but despite that, we are trying to make our patients' physical environment as cozy as possible.'
 (ETT)

- (46) "Tahame sellega anda tudengitele selge sõnumi – õppige edasi," ütles Klaas.
 want.PRS.1PL this.COM give.INF student.ALL.PL clear.TOT message.TOT study.IMP.2PL forward say.PST.3SG Klaas.NOM
 '“By doing this, we want to give the students a clear message: keep studying,” Klaas said.'
 (ETT)

¹⁰ As illustrated in (46), the category of recipient/beneficiary generally coincides with what in other linguistic traditions would be labeled an indirect object. However, as these arguments do not behave like objects in Estonian (note that they are marked not with one of the object cases, but rather with the allative, a local case that can also mark end location), I treat them as destination adverbials and refer to them by their thematic role rather than calling them objects.

However, the partitive is still used fairly frequently even in conjunction with a destination adverbial, and indeed, it would be possible (albeit somewhat unexpected) in each of these examples.

The results are also fairly consistent for the various types of destination adverbials, as illustrated in Table 8 below.

DA type	Partial object	Total object	Total	Partial object %
End location	34	62	96	35%
Recipient/beneficiary	21	47	68	31%
End state	3	15	18	17%

Table 8: *Object case variation in the da-infinitive object construction, by DA type*

As the table indicates, the partial object was especially rare in sentences featuring end-state adverbials (marked in Estonian by the translative case); unfortunately, the sample of such sentences is too small to permit any wide-ranging conclusions. However, the two more common types of destination adverbials appear to have roughly the same impact on object case, reducing the frequency of the partial object from 55–60% in sentences with no DA to 30–35% in sentences with a DA.

8 Conclusion

The most important conclusion to be drawn from the data presented in this paper is that, unless the *da*-infinitive phrase itself clearly expresses an unbounded action (atelic verb and/or quantitatively unbounded object), none of the relationships between aspectual parameters and object case in *da*-infinitive constructions are anything close to absolute. Variation is ubiquitous. Rather than rules, then, what we are left with is a set of competing motivations for the use of a particular object case, features that have a strong influence on object case in one direction or another.

As expected, features expressing boundedness (whether by making explicit the existence of an endpoint, i.e. telicity, or emphasizing the completedness of the action, i.e. perfectivity) favor the usage of the total object, while features expressing durativity or distributivity – portraying the situation as somehow open or unbounded, or facilitating an imperfective interpretation – are associated with partial object usage. However, despite the general status of the partitive as the “default” object case, this does not mean that any indicator of unboundedness *necessitates* the use of the partial object. For instance, while durativity markers in the purpose construction do significantly increase the frequency of the partial object, the total object remains quite common (43%). The partial object is indeed obligatory when unboundedness is expressed in the non-finite clause itself (i.e. when the non-finite clause expresses an atelic event), but the competition between unbounded main clause and bounded non-finite clause is resolved inconsistently, i.e. both partial and total objects are possible.

Moreover, the influence of these aspectual characteristics varies substantially from one construction to the next. The presence/absence of the perfective particle *ära* has no effect at all on object case in the assessment construction; however, in the object construction with the finite verb *tahtma* ‘to want’, the presence of *ära* does somewhat increase the frequency of the total object (68%, compared to 50% with no perfective particle). It is difficult to imagine why this would be the case. Both of these constructions are aspectually ambiguous, with elements outside the infinitive phrase imparting

unboundedness, contrasting with the bounded action described by the non-finite verb. In the object construction, unboundedness is found in the finite verb, e.g. *tahtma* ‘to want’; in the assessment construction with the adjective *libtne* ‘easy’, it is the assessment adjective *libtne* itself, drawing attention to the process rather than the result, which facilitates an unbounded reading. There is no evident reason why the particle *ära* should be able to tip the scales in one of these constructions, but not the other. Similarly, situation type (repeating or non-repeating) has no discernible effect on object case in the purpose construction, but has a significant effect in the object construction with the verb chain *leida tahtma* ‘to want to find’ (77% partial object use in repeating situations vs. 54% in non-repeating situations) and an even larger effect in the assessment construction. Overall, it is difficult to identify any one of these aspectual features as the most (or least) significant with respect to object case in *da*-infinitive constructions as a whole; the data resist such generalizations. Rather, each aspectual feature is important in at least one construction, but irrelevant (or simply absent) in others.

The construction-specific nature of the relationships between aspectual features and object case is further exemplified by the translative adverbial construction, which has two distinguishing characteristics: 1) unlike the other constructions discussed here, it shows no variation in object case beyond that described by the simple boundedness criterion, and 2) it describes almost exclusively non-repeating situations. It seems unlikely that the latter explains the former, i.e. that the reason why this construction shows none of the object case variation characteristic of other *da*-infinitive constructions is *because* it is associated only with non-repeating situations; after all, in the other constructions, non-repeating situations do exhibit substantial object case variation, by no means *requiring* the total object.

Why, then, should there be variation in object case in non-repeating situations with a destination adverbial in the object construction, or non-repeating situations with a perfective particle in the assessment construction, but no variation at all in the translative adverbial construction (with or without a destination adverbial or perfective particle)? One possibility is that the amount of anomalous partial object usage (instances of partial object usage that are not ascribable to the simple boundedness criterion) in a construction is to some extent a function of the frequency with which that construction describes repeating situations. There is more variation in object case in the assessment construction and object construction, both of which regularly describe repeating situations, than in the purpose construction (where repeating situations are relatively rare) and in the translative adverbial construction (where repeating situations are almost completely absent). However, such a general principle ought to extend beyond *da*-infinitive constructions and apply to finite clauses as well; since finite clauses may express repeating situations, by this principle they too should exhibit some degree of anomalous partial object usage. But they do not. Thus it seems that the lack of object case variation in the translative adverbial construction is a construction-specific feature that cannot be adequately explained by any more general (i.e. cross-structurally relevant) parameter.

In summary, the relationship between aspect and object case in *da*-infinitive constructions is complex and inconsistent. The lack of a clear meaning difference between the partial and total object in these constructions – a consequence of the fact that the use of the partial object in the non-finite clause does not imply that the non-finite clause itself is construed as unbounded – leads to a wide spectrum of variation, only a small portion of which can clearly be ascribed to aspectual phenomena. Some aspectual parameters are relevant to object case in multiple constructions, others in only one construction; moreover, there is cross-structural variation in object case usage

that cannot be explained by aspectual parameters but rather must be attributed to the constructions themselves. In addition, within individual constructions, there is a great amount of variation that cannot be ascribed to any parameter, whether aspectual or otherwise.

Thus, while aspectual features beyond those reflected in the standard boundedness criterion do indeed play a significant role in object case usage in *da*-infinitive constructions (unlike in finite clauses), they represent merely a small piece of the overall puzzle. Satisfactorily explaining the variation in object case in these constructions requires far more than merely refining/expanding the notion of boundedness; in addition to aspect, object case in these constructions is also influenced by factors such as construction- and/or lexeme-specific preferences, word order, and free variation, which cannot be covered in any plausible description of what it means for a situation to be bounded or unbounded.

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BOOK REVIEW

Approaches to Hungarian 15: Papers from the Leiden Conference (Amsterdam: John Benjamins, 2017, 255 pages)

Tamás Halm

This volume, edited by Harry van der Hulst and Anikó Lipták, contains a selection of papers from the 12th International Conference on the Structure of Hungarian (ICSH12) held at Leiden University on 22–23 May, 2015. The 9 papers in this volume have been selected out of 15 papers presented at the conference. Both the conference abstracts and then the manuscripts submitted to this volume underwent a rigorous anonymous review process: this is reflected in the general high quality of the papers published.

As has been the tradition of ICSH since its inception, the conference was open to submissions from all fields of linguistics as long as the linguistic data under discussion concerns (at least in part) Hungarian. Accordingly, this volume contains papers related various topics of syntax, semantic and phonology. Nevertheless, there are some recurring themes: there are two papers on vowel harmony, two papers on scope ambiguities (in the nominal domain and in the higher functional periphery of the clausal domain, respectively), and two papers related to the semantics of classifiers in Hungarian.

Although the starting point and main empirical focus of the papers is invariably some phenomenon prominently observable in Hungarian, the discussion and analysis in all papers is informed by the current cross-linguistic debate on the theoretical issues at hand. Indeed, in addition to shedding new light on problems in the grammar of Hungarian, most papers in the volume make significant contributions to general debates, such as the structural position of object DPs, the split-DP hypothesis, nominal case assignment or the typology of mass/count vs. classifier languages. In what follows, I will provide a short review and assessment of each paper, in the same order as they appear in the volume.

In their paper titled *Internal-scope taking arguments in the information structure of deverbal nominals in Hungarian*, Gábor Alberti, Judit Farkas and Veronika Szabó bring forward a set of interesting new observations to argue for a split-DP cartographic approach to the Hungarian DP. Their main observation is that certain deverbal nominal constructions have two readings: in addition to the trivial external scope reading (1ii), they also have what the authors dub the internal scope reading (1i):

- (1) *Imi ellenzi [mindkét lánynak_{Theme} a*
Imi oppose.DEFOBJ.3SG both girl.DAT the
meghív-ás-á-t a koncertre].
PERF.invite-ÁS-POSS-ACC the concert.SUB
- i. internal scope reading: [OPPOSE > BOTH_GIRLS > INVITE]
'Imi is against the option according to which both girls should be invited to the concert.' (As for Imi, one of them can be invited).
- ii. external scope reading: [BOTH_GIRLS > OPPOSE > INVITE]
'It holds for each of the two girls that Imi is against the option according to which she should be invited to the concert.' (As for Imi, neither girl should be invited.)

More controversially, they examine what they term (following Laczkó 2000:304–313) as simple-event-denoting deverbal nominal constructions, where the possessor is not the theme argument of the underlying verb but some other dependent, such as the agent (e.g. *a lányoknak a meghívása* ‘the invitation by the girls’). However, as the authors themselves note at one point, these constructions are ‘typically lexicalized forms’: their productivity is limited and their meaning is not necessarily compositionally derived from the meaning of the embedded verb. This makes the reader doubtful as to whether seeking a unified account for these lexicalized expressions and the truly productive cases of deverbal nominalization is on the right track. Luckily, however, this case of possible overgeneralization does not affect the central claim of the paper (the existence of a split DP in the case of productive deverbal nominalizations).

To conclude, the authors of the paper bring interesting new data to the table and present solid arguments in support of their main claim, which is that, similarly to other languages, Hungarian has a split DP (with an operator layer which houses elements taking noun phrase internal scope).

In her study *Structural ambiguities and case assignment in Hungarian clausal and phrasal comparatives*, Julia Bacskai-Atkari presents a detailed case study of ambiguity phenomena in degree comparatives in English, German and Hungarian. Her main claim is that the seemingly complex set of ambiguity phenomena is reducible to three factors: the type of the degree complement (clausal or phrasal), the general case assignment properties of the language (the extent of case syncretism and the nature of nominative case) and general clause formation rules (specifically, the presence or absence of PredP in tensed clauses and small clauses).

The author examines two types of ambiguities. Type I concerns subject–object ambiguity such as in the clausal comparative from German below:

- (4) *Ich liebe dich mehr als meine Schwester.*
 I.NOM love.1SG you.ACC more than my.F.NOM/ACC sister
 ‘I love you more than my sister.’
 i. ‘I love you more than I love my sister.’
 ii. ‘I love you more than my sister loves you.’

In line with earlier research (Lechner 2004), the author argues that the surface string in (4) is the end result of ellipsis. However, since feminine DPs are case syncretic between nominative and accusative in German, this string may in fact correspond to two different underlying forms, hence the ambiguity: *Ich liebe dich mehr als meine Schwester ~~dich~~ liebt*. ‘I love

-
- (i) *a szigetek fel.fedez-t-e*
 the islands PERF.discover-T-POSS
 ‘the discovery of the islands’
 (ii) *a rendező fel.fedez-ett-je*
 the director PERF.discover-ETT-POSS
 ‘the discoveree of the director’ (i.e., a talented actor discovered by the director)

In addition to the obvious difference in the form of the nominalizing suffix and the following POSS suffix (*-t-e* vs. *-tt-je*), there is also a striking category mismatch: (i) denotes an event, whereas (ii) denotes an individual. Therefore, it is more justified to assume that these are two different nominalizers (even if etymologically, they may well be related).

you more than my sister loves you.’ vs. *Ich liebe dich mehr als meine Schwester ~~ich~~ liebe*. ‘I love you more than I love my sister.’ However, no such ambiguity arises in Hungarian, where there is no such case syncretism (with the minor and partial exception of possessives).

Hungarian is a language which in addition to clausal comparatives also has phrasal comparatives. Phrasal comparatives carry a lexical adessive case and are routinely analyzed as PPs in Hungarian, cf. É. Kiss (2002). Due to this lexical adessive case, subject–object ambiguity arises:

- (5) *Jobban szeretlek Márk-nál.*
 better love.1SG Mark-ADE
 ‘I love you more than Mark.’
 i. ‘I love you more than I love Mark.’
 ii. ‘I love you more than Mark loves you.’

Type II ambiguity is more complex and concerns cases such as:

- (6) *I saw a taller woman than my mother.*
 LEXICAL READING: ‘I saw a taller woman than my mother saw.’
 PREDICATIVE READING: ‘I saw a taller woman than my mother is.’

The ambiguity arises since the remnant DP can be interpreted as the subject of either a verbal (SEE) or an adjectival (TALL) predicate. Interestingly, the author shows that in German, in the lexical reading, the remnant DP has nominative case, whereas in the predicative reading, the remnant DP receives accusative case through Exceptional Case Marking, which means that no ambiguity arises (unless there is case syncretism). As the author argues, this is due to a structural difference: in the lexical reading, the embedded clause is tensed, whereas in the predicative reading, it is a tenseless small clause. In Hungarian, the remnant DP is always nominative, even in the predicative reading where we have a small clause. The author argues that this is an instance of nominative as unmarked case (Kornfilt & Preminger 2015) and related to independently attested properties of case assignment in Hungarian small clauses (Matushansky 2012). This means that in clausal comparatives in Hungarian, we can always observe Type II ambiguity. In contrast, in phrasal comparatives, only the predicative reading is accessible (this is, in fact, cross-linguistically attested (Bacsikai-Atkari 2015)). The author argues that this again is due to tensedness: while adjectival predication (such as phrasal comparatives on the predicative reading) is tenseless, verbal predication (such as phrasal comparatives on the lexical reading and clausal comparatives in general) is tensed.

To conclude, the author introduces a number of intriguing puzzles concerning ambiguities in comparatives and shows that these phenomena can all be explained using standard and independently motivated assumptions on case assignment and clause formation rules, and by assigning an appropriate syntactic structure to the various kinds of degree complements.

In their lucidly argued and thought-provoking paper *Two positions for verbal modifiers: evidence from derived particle verbs*, authors Veronika Hegedűs and Éva Dékány make two main claims: 1) that, similarly to other languages such as German, Hungarian too has inseparable verbal modifiers (VMs) which are merged as high specifiers of the extended *v*P (as opposed to the better-known separable verbal modifiers which are merged as complements of V), and 2) that this is further evidence in support of the claim that cross-

linguistically, objects can be merged as specifiers and not only as complements (Bowers 1993, Hale & Keyser 1993, Arad 1996, Den Dikken 2015).

Verbal modifiers are predicative elements such as verbal particles, bare object nouns and resultatives which in addition to their similar compositional semantic function also share their syntactic distribution. In neutral sentences, they occupy the immediately preverbal position, whereas in non-neutral sentences (progressives, negation, narrow focus, *wh*-interrogatives, imperatives), they are obligatorily postverbal. Consider below an example with the verbal particle *fel* ‘up’:

- (7) a. *János fel-biciklizett a hegyre.*
 John up-bike.PST.3SG the mountain.SUBL
 ‘John biked up the mountain.’
 b. *János nem biciklizett fel a hegyre.*
 John not bike.PST.3SG up the mountain.SUBL
 ‘John did not bike up the mountain.’

The authors claim that in addition to this well-known and well-researched class, Hungarian has a set of inseparable verbal particles too, which fail to separate even in non-neutral environments:

- (8) a. *János fel-vételizett az egyetemre.*
 John up-exam.take.PST.3SG the university.SUBL
 ‘John took an entrance exam to the university.’
 b. *János nem fel-vételizett az egyetemre.*
 John not up-exam.take.PST.3SG the university.SUBL
 ‘John did not take an entrance exam to the university.’

The authors claim that there exist altogether 10 such verbs in Hungarian. The authors argue that they are derived as follows: first, the particle is attached to the verbal stem (*be* ‘in’ + *foly* ‘flow_v’ = [*be-foly*] ‘in-flow_v’), then, a nominalizer is attached ([*be-foly*] ‘in-flow_v’ + *-ás* = [[*be-foly*]-*ás*] ‘lit. event of flowing-in, fig. influence_N’), then a verbalizer is attached ([[*be-foly*]-*ás*] + *-ol* = [[[*be-foly*]-*ás*]-*ol*] ‘influence_v’). (This explains why a verb form **folyásol* does not exist.)

The authors claim that there is some evidence which points to the syntactic visibility of inseparable verbal particles, and thus justifies a morphosyntactic approach. Their tests are based on the old observation that in case of several verbal modifiers, only one of them can be preverbal and the other(s) appear postverbally:

- (9) *Mari be-festette a haját szőkére.*
 Mari in-dye.PST.3SG the hair.POSS.3SG.ACC blond.SUBL
 ‘Mari dyed her hair blond.’

The authors find that bare objects can freely appear before a verb with an inseparable verbal particle, which points to the syntactic invisibility of the latter. As far as verbal particles are concerned, the results are mixed: while exhaustive and durative particles can cooccur preverbally with inseparable verbal particles, directional and telicizing particles cannot. Concerning resultatives, the authors claim that the results are similarly mixed: while some resultatives such as *halálra* ‘to death’, *agyon* ‘over/to death’, *betegre* ‘sick’ can appear preverbally, others cannot.

Based on this, the authors assume that both separable and inseparable particle verbs are constructed in narrow syntax. Following earlier research, they take verbal particles (VMs in general) to be predicative (É. Kiss 2006) and merged as the predicate of a small clause (SC) the subject of which is the internal argument (Hegedűs 2013). The particles then move to Spec,PredP where semantic incorporation takes place, and then to their surface position in Spec,TP (Surányi 2009a,b, Kenesei 1998):

$$(10) \quad [_{TP} \text{ VM T } [_{VP} \text{ V } [_{PredP} \text{ VM Pred } [_{VP} \text{ V } [_{SC} \text{ DP}_{internal.arg} \text{ VM}]]]]]$$

The authors then argue that inseparability arises when the verbal particle is introduced in a structure lower than the nominalizing head:

$$(11) \quad [_{VRBP} [_{NOMP} [_{PredP} \text{ VM Pred } [_{VP} \text{ V } [_{SC} \text{ DP}_{internal.arg} \text{ VM} \text{ NOM}] \text{ VRB}]]]$$

ki von ~~##~~ ~~ki~~ -at -ol

The nominal head being a phase head, the particle could only move up to Spec,TP via Spec,NOMP. However, this is impossible due to independently attested reasons: particles being functionally P elements, their movement is movement of a PP category (Hegedűs 2013, Dékány & Hegedűs 2015). However, as the authors show using independent evidence, PPs in Hungarian cannot occupy a specifier position in the extended noun phrase. This means that the particles are in essence trapped below NOMP, and, hence, inseparable.

As far as the non-ability to combine with some other verbal modifiers (basically, telicizing and directional verbal particles) is concerned, the authors propose that this is due to the fact that the ‘slot’ where these other VMs could be introduced (within the SC which is the complement of V) is already taken by the inseparable verbal particle. Although there is another higher verbal head in the structure (VRB in (11)), its complement position is also filled (by NOMP).

This of course immediately begs the question: what is happening in those cases where VMs *can* cooccur with inseparable verbal particles (bare nominals, exhaustive and durative verbal particles and resultatives). The authors argue that these exhaustive and durative particles and resultatives, which share the semantic component ‘to a full degree’, are merged directly in the Spec position of a PredP above VRBP:

$$(12) \quad [_{PredP} \text{ VM } [_{VRBP} [_{NOMP} \dots] \text{ VRB }]]$$

szept/ki/betegre felvételi -z

Since this position can theoretically accommodate directional and telicizing verbal particles as well, the authors need to provide some additional explanation as to why these particles cannot combine with inseparable verbal particles. One possible explanation provided has to do with a constraint on double telicization of events (Filip 2003). This is problematic, though, as earlier in the paper, the authors argue that some of the inseparable particle verbs are in fact non-telic. The second explanation refers to an unwelcome clash of the two particles in VM position – however, it is unclear while such a clash would be a problem for some particles (directional and telicizing) and not for others (exhaustive and durative).

As the authors duly note, the majority of these inseparable particle verbs can take bare / indefinite / definite objects. This is, however, a challenge for their account so far: since the complement position of both V and VRB is taken, where are these objects

merged? The authors resort at this point to the general proposal that objects can also be merged as specifiers (Bowers 1993, Hale & Keyser 1993, Arad 1996, Den Dikken 2015): their proposal is that the object is merged as the specifier of a projection headed by a Relator-type head which takes VRBP as its complement.

On balance, this is a meticulously researched, lucidly argued and thought-provoking paper. However, I have some doubts as to the empirical basis of the ‘narrow syntax’ approach. There are several factors which point to these verbs being monolithic lexical elements (the unproductivity of the whole phenomenon, the fact that the part following the particle is typically a non-word (**vételizik*, **folyásol*), the non-compositionality of meaning) and, as we have seen, the most significant observation in favour of a morphosyntactic analysis (the incompatibility with directional and telicizing separable verbal particles) remains unexplained in authors’ actual proposal. Since the authors make some very far-reaching theoretical proposals (i.e., that VMs and directs object can be merged in specifier position too), I believe that further study is needed to ascertain that the empirical foundations to these claims are indeed solid.

In his paper *A representational account of vowel harmony in terms of variable elements and licensing*, Harry van der Hulst develops a new theory of vowel harmony. The gist of this new approach, first presented in van der Hulst (2012) (and to be elaborated in more detail in van der Hulst (to appear)) is that it represents harmony as a licensing relationship between vowels that ‘invariably’ carry the harmonic element and vowels that only carry this element ‘variably’ (these latter are traditionally known as alternating vowels). The licensing relationship is also assumed to be local on the nuclear level. After discussing the model, the author proceeds to show how the occurrence of so-called transparent and opaque (together called neutral) vowels can be explained in his model, proposing a theoretical underpinning to the typology of neutral vowels proposed by Kiparsky & Pajusalu (2003). Finally, the author examines cases which violate the proposed condition of nuclear locality and offers an auxiliary condition of ‘bridge locality’ to accommodate such cases.

The author assumes that phonological primes (so-called elements) are unary (this is characteristic of Radical CV phonology (van der Hulst 2005, in preparation), a version of Dependency Phonology (Anderson & Ewen 1987)). Specifically, elements come in to classes: aperture and colour. The colour class includes two elements: U and I, whereas the aperture class is further subdivided into a primary class containing the head elements \forall (high) and A (low) and a secondary class containing the dependent elements NASAL (N) and PHARYNGEAL (A/V). The second fundamental principle of the author’s proposal is that element specification is minimal: this is achieved by stipulating a ranking (a partial ordering) of the main elements ($A > U > I / \forall$) and then applying Drescher’s (2009) Successive Division Algorithm (2009) to prune the full specification of vowel (in a given language) by removing elements which are redundant (predictable and compatible with the phonetic structure of the vowel in question).

Thirdly (and crucially), the author proposes that vowel harmony is in essence the licensing of variable elements in nuclei by licensers which are typically vowels in adjacent nuclei containing an invariable instance of the same element. At this point, an important three-way distinction is introduced (ϵ stands for element):

- (13) a. ϵ b. (ϵ) c. $-$
 X X X
 a = invariant ϵ (*positive vowel*)
 b = alternating vowel, ϵ must be licensed to get interpreted
 c = invariant non- ϵ (*negative vowel*)

In scenario (a), the vowel is specified in the lexicon as having the element ϵ , independently of any licensing criteria. In scenario (c), the vowel is specified in the lexicon as *not* having the element ϵ , independently of any licensing relationships. In scenario (b), it is undecided at the lexical level whether the vowel (as part of a specific morpheme) will emerge with or without the element ϵ (this being dependent on licensing conditions). Scenario (c) can encode cases of disharmonic roots and non-alternating affix vowels, whereas scenario (b) can encode cases of alternating vowels. The author maintains that this notation, even though it creates a three-way distinction, does not undermine the unary nature of the elements: at the end of the derivation, contrast is being expressed only through the presence or absence of a given element.

Fourthly, and continuing the tradition of Government Phonology (Harris & Lindsey 1995, Ritter 1995, Charette & Göksel 1998, among others), the author argues that variable elements (13b) only emerge if licensed, otherwise they remain silent. In particular, the author argues for what he terms lateral (or syntagmatic) licensing along phonological tiers. Crucially, this licensing is taken to be bidirectional in the default setting: as the author shows later on, this is needed in order to account for root-control systems which have both harmonic prefixes and suffixes and also for dominant-recessive systems.

Fifthly, the author adopts a relatively strict version of locality: two elements are local if and only if they are adjacent with reference to the nuclear tier (nuclear locality). Nevertheless, to account for apparent violations of this concept of locality in cases of transparency, the author posits a second type of locality called bridge locality: in these cases, the locality requirement is being satisfied on a tier which is different from the harmonic tier.

Vowel harmony for a given element ϵ is then defined as a constraint in (14):

- (14) All units X in domain D must be positive or negative for element $[\epsilon]$.

In the default case, X stands for nucleus, but it can also be a different element in cases of bridge locality.

The most important claim of the author, and the main contribution of his proposal, is that using this system, one can provide a principled and general explanation as to why a given vowel is non-alternating (transparent or opaque) in a given language. That is, instead of resorting to language-specific and arbitrary stipulations, the non-alternating behaviour of vowels can be predicted from their element structure and from the structure of the vowel system of the given language as a whole. Transparent behaviour is possible if a vowel is compatible with the harmonic element ϵ , and opaque behaviour is predicted if a vowel is incompatible with ϵ .

Naturally, beside theoretical elegance, an important test of any new proposal is whether indeed it can provide a principled explanation for a large range of empirical phenomena. In the remainder of the paper, the author first shows on a couple of examples from a diverse set of languages such as Gaa (Western Kwa spoken in Ghana), Tangale (West Chadic spoken in Nigeria), Turkish, Finnish and Hungarian how cases of

asymmetry in vowel harmony (transparency and opacity) can be modelled in this system. Then the author proceeds to show how the four-way typology of the behaviour of neutral front vowels in palatal harmony discussed by Kiparsky & Pajusalu (2003) can be modelled in the proposed framework:

- (15) A typology of the behaviour of neutral front vowels in palatal harmony (taking [i] as representative):
- a. Khanty: [i] = specified with I
 - b. Finnish: [i] = specified with variable I; positional licensing(on)
 - c. Uygur: [i] = specified with variable I; positional licensing(off)
 - d. Mulgi: [i] = unspecified for I

That is, the four-way distinction is captured by adding the parameter of positional licensing (on/off) to the three-way distinction in (13). The author then proceeds to contrast his proposal with earlier accounts such as Rebrus & Törkenczy (2015a,b), van der Hulst (2015) and Polgárdi (2015). Finally, the author discusses ‘unexpected’ transparency and opacity in Khalka (Mongolian) and the Bantu language of Kibudu and argues that the relevant facts can be explained by resorting to the notion of bridge locality.

In sum, the author presents an interesting new theory of vowel harmony: while this approach incorporates earlier elements of Dependency Phonology and Government Phonology, its novelty lies in the way it captures vowel harmony through the licensing of variable unary elements. In terms of empirical coverage, the early results presented in this paper are promising but as with every new theoretical proposal, much work lies ahead in terms of testing (and refining if necessary) the model on a broad range of relevant data.

In their paper *Co-patterns, subpatterns and conflicting generalizations in Hungarian vowel harmony*, Péter Rebrus and Miklós Törkenczy examine what happens when coexisting and conflicting patterns of variation in Hungarian front-back vowel Harmony (HVH) are in conflict. The patterns under examination are defined in terms of prosodic structure (monosyllable vs. polysyllable), locality (one vs. several intervening neutral vowels), morphological complexity (monomorphemic vs. suffixed) and whether the suffix in question is harmonically alternating or not. The authors argue that the resolution of these conflicts can be described in terms of a version of the Elsewhere Condition: if several of the patterns (or more precisely, the generalizations underlying the patterns) hold in a given case, it is the more specific generalization that wins.

Hungarian vowel harmony is well-known to feature transparency and antiharmony. In general, a target vowel in a harmonic suffix matches the trigger vowel of the stem in terms of backness: *ház-unk* vs. **ház-ünk* ‘our house’, *fold-ünk* vs. **fold-unk* ‘our land’. However, the vowels (i, i, e, ε) are neutral: they are transparent: *papír-unk* vs. **papír-ünk* and *rövid-ünk* vs. **rövid-unk*; and they may be antiharmonic in roots which only contain neutral vowels: *bén-ul* vs. **bén-ül* ‘become paralyzed’. As the authors show, both transparency and antiharmony show significant variation. Transparency typically exhibits what the authors term ‘vacillation’, namely, where the same cell in the paradigm of a given stem shows variation: *fotel-ünk* vs. *fotel-unk* ‘our armchair’. Antiharmony, on the other hand, typically exhibits lexical variation (e.g. Hayes et al. 2009, Linzen, Kasyanenko & Gouskova 2013, Pater 2007, Zuraw 2015, Rebrus & Törkenczy 2015b), where different stems show different harmonic suffix behaviour: *bén-ul* ‘become paralyzed’ vs.

vén-ül ‘become old’. The authors introduce the following notation: % signifies vacillation whereas | signifies lexical variation.

The first pattern discussed by the authors is a count effect on vacillation (for earlier discussions, cf. Hayes & Cziráky-Londe 2006, Kálmán & Forró 2014, Rebrus & Törkenczy 2015a,b among others). Focusing on the most well-behaving of the neutral vowels (i and i:), the authors show that while these are fully transparent as long as there is only one of them in the relevant context (*madrid-unke* vs. **madridünk* ‘our Madrid’), they show variation if there are several of them (*martinik-unke* % *martinik-ünk* ‘our Martinique’). This pattern is referred to as the Count Effect (CE) in the paper.

Antiharmony is also subject to a count effect, termed Polysyllabic Split (PS) in the paper: while, as we have seen, monosyllabic all-neutral roots exhibit lexical variation (*víz-ünk* ‘our water’ | *hid-unke* ‘our bridge’); there are no anti-harmonic monomorphemic roots longer than one syllable: *tigris-ünk* vs. **tigris-unke*. (Polymorphemic stems can exhibit antiharmony, e.g. with the verbalizing suffix *-ít*: *híg-ít-hat* ‘thin-VRB-MODAL’.)

The authors note that in terms of their effects, CE increases and PS decreases variation. However, both CE and PS decrease disharmony.

The next pattern under examination is a surface-to-surface paradigmatic constraint called Harmonic Uniformity (HU) (Törkenczy, Rebrus & Szigetvári 2013, Rebrus & Szigetvári 2013, and Rebrus & Törkenczy 2016). HU requires that the harmonic class of a suffixed stem be identical to the harmonic class of the stem. This constraint can be in conflict with CE and PS. Consider a root like *madrid* ‘Madrid’, which requires a back suffix: *madrid-nak* vs. **madrid-nek*. Consider now *madrid-i* ‘from Madrid’ (with the adjectivizing suffix *-i*). CE would predict vacillation, however, this is not the case: the pattern we observe is *madrid-i-nak* vs. **madrid-i-nek* (as opposed to *martini-nak* % *martini-nek*). Looking at PS vs. HU, *hid* ‘bridge’ is an antiharmonic root (*hid-ra* vs. **hid-re*). Adding the adjectivizing suffix *-i* creates a polysyllabic all-neutral stem, however, contrary to what PS would predict, anti-harmony survives: *hid-i-ra* vs. **hid-i-re* (as opposed to **tigris-nak* vs. *tigris-nek*). In these cases, HU overrides CE and PS.

In terms of effects, HU reduces variation when overriding CE (by eliminating vacillation), and it increases variation when overriding PS (by creating antiharmonic polysyllabic all-neutral stems). HU increases disharmony when overriding CE (by eliminating harmonic variants such as **madrid-i-nek*), and likewise, it increases disharmony when overriding PS (by extending antiharmony to polysyllabic all-neutral stems).

The final pattern discussed by the authors is sequential bias: where the allomorph of a suffix has a preference for frontness/backness in a following alternating suffix (cf. Törkenczy 2011, Rebrus et al. 2012, Törkenczy et al. 2013). Interestingly, this pattern can override HU. Consider the (suppletive) alternation of 3SG.PRES.DEF: *lök-i* ‘push-3SG.PRES.DEF’ vs. *rak-ja* ‘put-3SG.PRES.DEF’. Attaching this suffix to a vacillating stem eliminates vacillation: *martini- ζ -i-tek* vs. **martini- ζ -i-tok* ‘pour.Martini-DEF-2PL’. (Note the contrast with: *martini- ζ -tek* % *martini- ζ -tok* ‘pour.Martini-2PL’.)

The authors point out a crucial difference between the general vowel harmony constraint (VH), the count effect (CE) and the polysyllabic split (PS) on the one hand and Harmonic Uniformity (HU) on the other hand. While VH, CE and PS describe the same generalization for all stem types (independent of their inner morphological complexity), HU is defined in terms of the morphological complexity of the stem. In this sense, HU is more specific than VH, CE and PS. The authors argue that the override patterns can be derived from a version of the Elsewhere Conditions (e.g. Kiparsky 1973): in a conflict, the more specific generalization prevails. Similarly, SB applies to harmonic

suffixation whereas HU applies to suffixation in general: again, the specific constraint (SB) prevails over the general (HU).

The authors also present frequency data from the 514-million-word-token Szószablya web corpus (Halácsy et al. 2004). The most striking finding is that the token frequency of those stem types where the generalizations are in conflict is very low: this means that even though the more specific generalizations overrides the more general ones when in conflict (they are dominant), this effect is observable in relatively few forms (making them, in this sense, recessive).

Finally, the authors argue that such an intricate pattern of vowel harmony (showing variability and invariability) could be described, in theory, in different ways: 1) by defining non-overlapping co-patterns, 2) by defining subpatterns where embedding of patterns within patterns is allowed (in the sense that a subpattern describes those cases which are exceptional with regard to the more general pattern) and 3) by defining wide-scope generalizations which hold across all forms. Naturally, in this latter approach, one has to explain what happens in those forms where these generalizations are in conflict. As the authors show, in the case of Hungarian vowel harmony, these conflicts are resolved following the Elsewhere Condition: the more specific generalization prevails. As the authors convincingly argue, while it would be technically possible to capture the relevant data in the non-overlapping pattern and in the subpattern approach as well, these solutions would be inferior in terms of explanatory power.

To conclude, with a forensic attention to detail and meticulous analysis, the authors succeed in providing an elegant and enlightening analysis for patterns of variation in Hungarian vowel harmony which at first sight might have appeared to the reader as rather obscure due to the low token frequency of the relevant forms and the intricate interaction of patterns, subpatterns and subsubpatterns. The discussion is very deep and yet, in essence, theory-neutral: the novelty of this paper lies not in providing a new theoretical proposal for vowel harmony, but rather, in showing that complex patterns of variation can be adequately and parsimoniously described by employing wide-scope generalizations and letting the Elsewhere Condition do the task of conflict resolution.

In her paper *Measure constructions in Hungarian and the semantics of the -nyi suffix*, Brigitta R. Schvarcz provides a semantics and pragmatics for the *-nyi* suffix in Hungarian. As the author shows, this suffix is quite versatile: it can attach to container classifiers (16a), to other count nouns (16b) and to lexical measures (16c), and it has different functions in each case:

- (16) a. *két pohár-(nyi) bor*
 two glass-NYI wine
 ‘two glassfuls of wine’
- b. *három könyv-*(nyi) cikk*
 three book-NYI article
 ‘three book(ful)s of wine’
- c. *két kiló-nyi liszt*
 two kilo-NYI flour
 ‘approximately two kilos of flour’

When attaching to container classifiers, the suffix seems to have a disambiguating function: while *két pohár bor* ‘two glass wine’ may mean either ‘two actual glasses filled

with wine’ or ‘a quantity of wine equivalent two to glasses’ (cf. Rothstein 2009 on individuating vs. measure readings), the *-nyi*-suffixed variant only has the latter, measure interpretation. In the case of a simple count noun, the function of the suffix appears to be to turn this noun into a measure expression: without it, the phrase is ungrammatical (16b). (The author notes that in this sense, *-nyi* is similar to English *-ful*, which is optional with standard containers such as *cup(ful)* but obligatory with ad-hoc containers such as *batful*.) Finally, when added to expressions of measure *per se*, the suffix forces and approximative reading (16c).

In order to account for this plasticity of function and also for the considerable variety in grammaticality judgements of speakers (in certain dimensions of measurement), the author proposes a minimal semantic analysis of *-nyi* as an operator which converts a noun into a measure head. No reference to dimensions of measurement (container, value, temporal, adjectival) is made in the semantics of the operator: any such restrictions are determined pragmatically. Before starting the detailed discussion, the author also clarifies that she will distinguish altogether three readings of a container classifier expression *három üveg bor* ‘three bottle wine’: the countable actual objects reading ‘three actual, physical bottles filled with wine’, the countable portions reading ‘three separate bottle-sized portions of wine’ and the measure reading ‘a quantity of wine equivalent to three bottles.’² The suffix *-nyi* is infelicitous in the first context, felicitous in the third context, and ambiguous in the second context.

While earlier studies proposed that *-nyi* expressions be treated as adjectives (Kenesei, Vago & Fenyvesi 1998, Kiefer & Ladányi 2000), the author points out that this is problematic as (unlike adjectives) *-nyi* suffixed nouns (*N-nyi*) must be preceded by a numeral: **(egy) könyv-nyi cikk* ‘a bookful of articles’. The author also provides some evidence from ellipsis that *N-nyi* does not behave as a classifier either. Rather, following Rothstein’s (2009, 2017) analysis for English and Modern Hebrew measure phrases, the author argues that *N-nyi* is a measure head such as *kilo* or *liter* (cf. Krifka 1989, Landman 2004 on measure heads): that is, *-nyi* induces a shifting operation from noun to measure head. This measure head then combines with a numeral to create a complex measure predicate which is an adjective-like phrase:

- (17) [DP [NP [MeasP Num [Meas0 N *nyi*] N]]]
két pohár -nyi bor
 ‘two glassfuls of wine’

As expected, Num+N-*nyi* can be used attributively:

- (18) *három két óra-nyi ülés-t hallgattam régig*
 three two hour-NYI session-ACC listen.PAST.1SG VM
 ‘I listened to three two-hour lectures.’

The authors points out that Num+N-*nyi* can also function as a distance or duration adverbial modifying a VP:

² For the significance of this distinction, see Partee & Borschev 2012 and Khrizman, Landman, Lima, Rothstein & Schvarcz 2015.

- (19) *János három buszmegálló-nyi-ra lakik Maritól.*
 John three bus.stop-NYI-SUBL lives Mary.ABL
 ‘John lives three bus stops away from Mary.’

Next, the author discusses some of the finer conditions on the (non-)occurrence of *-nyi*. As we have seen, they are obligatory on nouns that are not born as measures (16b). As far as container classifiers are concerned, their appearance is obligatory, but if they appear, they force a non-individuating (measure) reading. There is some inter-speaker variation here as to whether 1) non-standard classifiers obligatorily require *-nyi*, whether 2) container classifiers have a preference for a *-nyi* form if the container does not physically participate in the measuring action and whether 3) *-nyi* is obligatory in adjectival/adverbial uses.

In terms of formal semantics, the author bases her model of *-nyi* on several earlier proposals for *-ful* in English (Krifka 1989, Landman 2004, Rothstein 2009). (While *-nyi* differs from *-ful* in that in addition to volume, it can be used to create measures of other dimensions such as financial worth, distance, time period etc., the author assumes that this is a matter of pragmatics.) Following Rothstein (2012), the author assumes that *two litres* denotes the set of quantities which have value two on the scale calibrated in litre units:

- (20) *two litres*
 a. [[litre]] $\lambda n \lambda x. \text{MEAS}_{\text{VOLUME}}(x) = \langle n, \text{LITRE} \rangle$
 b. [[two litres]] $\lambda x. \text{MEAS}_{\text{VOLUME}}(x) = \langle 2, \text{LITRE} \rangle$

Based on Schvarcz (2014), the author proposes that the measure interpretation of *N-nyi* is analogous to lexical measures such as *litre*. Accordingly, *-nyi* is an operator of type $\langle \langle e, t \rangle, \langle n \langle e, t \rangle \rangle$, turning a nominal predicate at type $\langle e, t \rangle$ (such as $\lambda x \text{GLASS}(x)$) into a measure head of type $\langle n \langle e, t \rangle \rangle$.

- (21) a. [[-nyi]] $\lambda P \lambda n \lambda y. \text{MEAS}(y) = \langle n, P \rangle$
 b. [[pohár-nyi]] $\lambda n \lambda y. \text{MEAS}(y) = \langle n, \lambda x \text{GLASS}(x) \rangle$

The author notes that while this model nicely accounts for the uses of *-nyi* with container and count nouns (16ab), it cannot be extended to uses with lexical measures (16c): the latter are measure heads to begin with, so the mechanism in (21) clearly cannot apply to them; also, when added to lexical measures, the function of *-nyi* seems to be different: that of expressing an approximative reading. (The author argues that *-nyi* with count nouns is inherently approximative, since the unit of measure is not absolute but pragmatically determined by context.) The author proposes that on this reading, *-nyi* has the same interpretation as Khrizman & Rothstein’s (2015) approximate operator: it maps an inherent measure head onto an approximative measure head:

- (22) a. [[liter]] $\lambda n \lambda x. \text{MEAS}_{\text{VOLUME}}(x) = \langle n, \text{LITRE} \rangle$
 b. [[liter-nyi]] $\lambda n \lambda x. \text{MEAS}_{\text{VOLUME-APPROX}}(x) = \langle I_n, \text{LITRE} \rangle$
 (I_n is a set of intervals which all include n)

To conclude, the author presents a careful study of the various uses of the suffix *-nyi* in Hungarian and analyzes it as a general measure operator, which has two uses and

semantic functions: as a type-shifting operator turning count nouns into measure heads (16ab) and as a type-preserving operator turning inherent measure heads into approximative measure heads (16c). An interesting question for further research is whether it is possible to provide a fully unified account for these two uses.

In their paper *Hungarian classifier constructions, plurality and the mass-count distinction*, Brigitta R. Schvarcz and Susan Rothstein argue that, contrary to earlier claims (Csirmaz & Dékány 2014), Hungarian is not a classifier language but, rather, a count/mass language with an unusually high number of nouns which are ambiguous between a count and a mass reading.

Following Chierchia (1998, 2010), it is widely assumed that languages fall into two families in terms of their counting systems. In mass/count languages (such as English), count nouns (but not mass nouns) can be directly modified by numerals (23ab), singular vs. plural predicates are distinguished by plural morphology (23a), count nouns are not preceded by sortal classifiers (23c) and bare singular count nouns cannot be arguments (23d):

- (23) a. *I have one cat/three cats.*
 b. **I have one gold. vs. I have one unit of gold.*
 c. **I have one unit/piece/animal of cat. vs. I have one cat.*
 d. **I saw cat. vs. I saw a cat / cats.*

In a typical classifier language such as Mandarin Chinese, numerically modified nouns are obligatorily preceded by a quantifier (24ab), singular and plural predicates are morphologically not distinct (24ab), and bare singular nouns are allowed as arguments (24cd)

- (24) a. *yi zhi gou* vs. **yi gou*
 one CL dog one dog
 ‘one dog’
 b. *wu zhi gou* vs. **wu gou*
 five CL dog cs. five dog
 ‘five dogs’
 c. *wo kanjian gou le*
 I saw dog SENTENCE.FIN.PART
 ‘I saw a dog/the dog/dogs.’
 d. *wo mai le shu*
 I buy PERF book
 ‘I bought a book/the book’

Chierchia (1998, 2010) theorizes that these patterns show that in a classifier language, all nouns are underlyingly mass, and classifiers denote a function that takes mass nouns and returns count predicates.

As has been pointed out (Csirmaz & Dékány 2014), Hungarian does not fit this typology neatly. It has optional sortal classifiers (25a) and bare singular nouns can be arguments and can be interpreted as plural (25b). This might suggest that Hungarian is a classifier language, although there are some striking differences that set Hungarian apart from a bona fide classifier language such as Mandarin Chinese: firstly, that sortal classifiers in Hungarian are optional (whereas in classifier languages, they are obligatory)

and secondly, that bare singular nouns in Hungarian can only appear inthetic and not in categorical sentences, and they can never be interpreted as definites (whereas there are no such restrictions in classifier languages). In terms of sensitivity to the singular-plural distinction, in the absence of a modifying numeral, singular and plural nouns are distinguished morphologically (25c); however, in the presence of a modifying numeral, this distinction vanishes (25d):

- (25) a. *két (szál) rózsá*
 two CL_{thread} rose
 ‘two threads(=pieces) of roses’
- b. *Rózsát vettem.*
 rose-ACC buy.PAST.1SG
 ‘I bought a rose/roses.’
- c. *(a) rózsá / (a) rózsák*
 (the) rose / (the) rose-PL
 ‘(the) roses / (the) roses’
- d. *három rózsá vs. *három rózsák*
 three rose vs. three rose-PL
 ‘three roses’

These properties clearly mean that Hungarian is a challenge for the mass/count vs. classifier binary typology. Csirmaz & Dékány (2014) suggested that Hungarian is, in fact, a true classifier language where classifiers can come either as lexical classifiers such as *szál* ‘thread’ or the general classifier *darab* ‘piece’; or as a phonologically null general sortal classifier (the silent version of *darab* ‘piece’). This means that the optionality of classifiers is only an appearance: the absence of an overt classifier is in fact indicates the presence of a silent one. If Hungarian is indeed a truly classifier language, one expects, following Chierchia (1998, 2010) and Cheng & Sybesma (1999) an absence of morphological plurality, and the facts in (25d) seem encouraging. Note, however, that single-plural morphological distinction is obligatory in the absence of numerical modification (25c). On this point, Dékány (2011) suggests following Borer (2005) that plurality is itself a classifier (even if it differs in a number of significant ways from the more traditional pre-nominal classifiers), and specifically, that plurality in Hungarian is similar to the Mandarin pre-nominal plural classifier *xie* (CL_{PL}). Since *-k* exhibits properties of both plural classifiers and plural markers, Dékány proposes that it be analyzed as a spanning lexical item (Taraldsen 2009) for both CL and PL.

The main claim of the authors of the present paper is that, *pave* Dékány (2011) and Csirmaz & Dékány (2014), there exists a mass/count distinction in Hungarian and that plurality is not a classifier but heads a Number phrase.

First, the authors point out using several tests that bare plural nouns can have kind interpretations, something which would be unexpected if the plural marker were indeed a sortal classifier (which turns inherently mass nouns into count predicates) For instance, consider (26) below, where the bare plural clearly denotes a plurality of kinds (I slightly modified the example used by the authors for ease of exposition.):

- (26) *Madar-ak állnak a kihalás szélén.*
 bird-PL stand.PRS.3PL the extinction side.POSS.3SG.SUP
 ‘Some species of birds are on the verge on extinction.’

Secondly, the authors show that the morphological plural can in some cases cooccur with classifiers (e.g. *vegni kenyerek* CL_{loaf} bread-PL). While some such cases are discussed by Dékány (2011) and explained as instances of Spurious NP Ellipsis, the authors find several cases such as ‘loafs of bread’ in environments which are clearly not elliptical. Thirdly, the authors show that similarly to English (a prototypical mass/count language), plurality in Hungarian is sensitive to the mass/count distinction: the denotation of a pluralized noun crucially depends on whether it is notionally count or mass: *cuker-ok* (sugar-PL) may denote ‘pieces of sugar’ but also ‘kinds of sugar’.

From this the authors draw the conclusion that 1) plurality does not incorporate the semantics of a classifier and 2) that the mass/count distinction is very relevant in Hungarian. Based on this, the authors propose that *-ok* is an exponent of plurality and spells out a Num head (cf. Sauerland 2003) which normally takes an NP complement, where N is marked as plural by agreement with the features of Num.

To account for the lack of plural morphology in the case of explicit numerals (25d) and for the hybrid behaviour of Hungarian in terms of the mass/count vs. classifier typology, the authors suggest that nouns in Hungarian come in three kinds. There is a set of nouns which seem to have the typical properties of mass nouns such as *szemét* ‘trash’, *kosz* ‘dirt’ or *homok* ‘sand’:

- (27) a. **homok-ok*
 sand-PL
 ‘sands’
 b. *egy *(szem) homok*
 one CL_{grain} sand
 ‘one grain of sand’

There is also a very limited set of nouns which arguably behave like typical count nouns such as *fej* ‘head’ or *csepp* ‘drop’:

- (28) a. *Három csepp-et írt fel az orvos.*
 three drop-ACC write.PAST.3SG VM the doctor
 ‘The doctor prescribed three drops.’
 b. **három darab csepp*
 three CL_{piece} drop
 ‘three drops’

The authors show that these two sets of nouns also pattern neatly with quantity question words: *hány* ‘how many’ patterns with count nouns and *mennyi* ‘how much’ patterns with mass nouns.

To account for the optionality of classifiers with the vast majority of nouns in Hungarian, the authors argue that all these nouns are, in fact, ambiguous between a count and a mass noun. While such ‘flexible nouns’ have been described in other languages (such as *stone* in English: *How much stone is in the garden?* vs. *How many stones does it take to build a wall?*), Hungarian would be a special case by virtue of having the vast majority of nouns exhibit this flexibility. However, the authors argue convincingly that this is indeed case: in addition to the classifier facts (25a), the co-occurrence with both *hány* (how many) and *mennyi* (how much) also indicates a double behaviour:

- (29) a. *Hány könyv van a táskában?*
 how.many book is the bag.POSS.2SG.INE
 ‘How many books are there in your bag?’
 b. *Mennyi könyvet tudsz cipelni?*
 how.much book.ACC can.PRES.2SG carry.INF
 ‘What quantity of books can you carry?’

Following Barner & Snedeker (2005), Bale & Barner (2009) and Rothstein (2010), the authors argue that count and mass nouns are derived from lexical roots via lexical operations, and ambiguity arises if a root is such that either of these operations can apply to it.

There is one problematic prediction of this otherwise convincing account: on the count reading, we would expect plural nouns to carry plural morphology. As we have seen above, this is not the case: when modified by a numeral, nouns emerge in the singular form (25d). The authors do not provide a full explanation for this, but they do point out that there are various other mass/count (non-classifier) languages which exhibit similar phenomena: in Turkish, cardinal numerals are always followed by singular nouns, and Standard Arabic, Russian and Armenian have comparable (if more complex) patterns; and they also tentatively suggest some possible directions of accounting for such patterns. Finally, the authors draw an interesting parallel with Brazilian Portuguese, which appears to exhibit a similar large-scale mass/count ambiguity (Pires de Oliveira & Rothstein 2011).

To conclude, this paper is an important contribution to the debate on the typological classification of Hungarian in terms of the mass/count language vs. classifier language distinction. While it has been claimed earlier (Csirmaz & Dékány 2014) that Hungarian is a classifier language, the authors convincingly argue here that Hungarian is in fact a mass/count language, in which, however, the vast majority of nouns are ambiguous between the mass and the count reading. While there remain some loose ends in their account (e.g. the lack of plural morphology after numeral modifiers is only partially explained), I think that on balance, they achieve a better empirical coverage with a more parsimonious theoretical apparatus than previous proposals.

In their paper *Focus and quantifier scope: An experimental study of Hungarian*, Balázs Surányi and Gergő Turi present an empirical study which explores whether having a quantified NP in the structural focus position influences its scope properties (narrow vs. wide scope readings). While earlier studies have found that the topic status of an NP gives rise to wide scope, the authors find that focus status and scope interpretation are, in fact, independent (at least as far as Hungarian is concerned).

Quantifier scope ambiguity can arise in sentences containing more than one quantified expression such as:

- (30) *Exactly two students did each assignment perfectly.*
 i. ‘Exactly two students are such that they did each assignment perfectly.’
 TWO > EACH
 ii. ‘Each assignment is such that it was done by exactly two students perfectly.’
 EACH > TWO

Several factors have been identified in the literature which influence the availability of relative scope in such sentences. Trivially, if quantifier A linearly precedes quantifier B,

the $A > B$ scope reading is more accessible (Ioup 1975, Fodor 1982, Kurtzman & MacDonald 1993). Precedence in terms of surface symmetric c-command has been shown to play an important role: if A c-commands B on the surface, the $A > B$ interpretation is more readily available than the $B > A$ interpretation (Reinhart 1976, 1983). Not independently from structural c-command relations, thematic and grammatical roles also play a role: subject and agents are more likely to take wide scope than objects and themes (Ioup 1975). The lexical semantic type of the element also matters: elements to the left of the following scale are reported to be more likely to take inverse scope (wide scope over a linearly preceding quantifier) than the elements to the right: *each > every > all > most > many > several > a few* (Ioup 1975). It has been claimed (Liu 1990, Beghelli & Stowell 1997) that downward entailing quantifiers such as *few* actually reject inverse wide scope categorically. Finally, pragmatic factors such as world knowledge are known to influence scope preferences (e.g. *A soldier is standing in front of every building.* $\# \exists > \forall$, ${}^{\text{OK}} \forall > \exists$).

In terms of information structure, the (noncontrastive) topic position has been associated with wide scope by several authors (Ioup 1975, Kuno 1982, 1991, Kempson & Cormack 1981, Reinhart 1983, May 1985, Cresti 1995, Erteschik-Shir 1997, Portner & Yabushita 2001, Krifka 2001, Ebert & Endriss 2004).

The effect of focus, however, is debated. Some studies link focus to a narrow-scope interpretation (Kitagawa 1990, 1994, Diesing 1992, Kratzer 1995, Krifka 2001, Cohen & Erteschik-Shir 2002, Pafel 2006), others to a wide-scope interpretation (Williams 1988, May 1988, Langacker 1991, Deguchi & Kitagawa 2002, Ishihara 2002). Erteschik-Shir (1997) claims that contrastive focus triggers wide-scope whereas non-contrastive focus is connected to narrow scope.

It is this latter debate to which the authors contribute by testing the following pair of hypotheses:

- (31) a. *Focus Narrow Scope (FNS) hypothesis*
 If a quantifier is associated with focus status, then it will (prefer to) have narrow scope with respect to non-focal, non-topical scope-bearing elements in the same finite clause.
- b. *Focus Wide Scope (FNS) hypothesis*
 If a quantifier is associated with focus status, then it will (prefer to) have wide scope with respect to non-focal, non-topical scope-bearing elements in the same finite clause.

Before discussing the experimental setup, the authors provide a concise background to quantifier scope in Hungarian. They show that while there is considerable debate as to the theoretical analysis of scope phenomena, and also some data controversy (especially regarding the role of prosody), some crucial facts are uncontested. While the relative scope of two pre-verbal quantifiers follows from their linear order, there is scope ambiguity if one of the quantifiers is preverbal and the other is post-verbal:

- (32) [₄ *Négy lány is*] *elolvasta* [_{\forall} *mindegyik cikkét*].
 four girl too PRT.read each paper.ACC
- i. 'Four girls are such that each of them read every paper.' $4 > \forall$
- ii. 'Every paper is such that it was read by four girls.' $\forall > 4$

The authors also discuss Gyuris's (2006, 2008) finding, which is directly relevant to the study, that such ambiguity is attested in sentences with pre-verbal focus and post-verbal focused quantifiers, under varying informational structural conditions.

In terms of research questions, the authors set out to examine whether, keeping information structure constant, the 1) givenness or 2) focused status of a post-verbal quantifier affects the scope interpretations open to it. Such an effect can be absolute, meaning that either only the linear or only the inverse scope reading is available; or it can be relative, meaning that both readings are available but one of them is preferred. (And of course, it may be the case that no statistically significant effect is detected.)

In the actual experiment, the authors tested the interpretation of sentences like (32), which contained a post-verbal universal quantifier phrase and a preverbal distributive bare numeral phrase (the particle *is* 'too' was added to ensure a distributive reading, cf. Szabolcsi 1997). In each target sentence, the information structure status was manipulated in such a way (by means of a preceding small dialogue setting up the context) that either the post-verbal quantifier phrase was focused and the pre-verbal numeral phrase was given, or vice versa. Other factors that might have influenced scope readings such as thematic roles were kept constant. Each test case was a small dialogue presented, in which speaker A made an erroneous statement which was then corrected by speaker B such as below:

(33) Postverbal QP in Focus – Narrow Interpretation

A: **context:**

Négy előadó is elénekelte valamelyik melódiát.
 four singer DIST PRT.sang one.of.the melody.ACC
 'Four singers sang one of the melodies.'

B: *Nincs igazad!*

is.not right
 'You are wrong.'

target:

Négy előadó is elénekelte mindegyik melódiát.
 four singer DIST PRT.sang each melody.ACC
 'Four singers sang each melody.'

Within this conversation, the target sentence is clearly intended in a way that the post-verbal quantifier phrase has narrow scope. The task of the participants in the test was to rate the naturalness of the target sentence on a Likert scale (from 1 to 5). In addition to the context above, participants were also provided with picture stimuli to help them conceptualize the intended meanings: these were simple drawings which depicted the context visually.

The authors designed the experiment carefully: each participant was presented with 20 target trials, 10 control trials and 30 filler trials in a pseudo-randomized order (so that filler items separated every two consecutive test items). The number of the participants (42 students) was also relatively high.

The authors applied non-parametric methods for statistical analysis since the rating results did not meet the requirement of normality (5 was by far the most frequent rating in each condition). A cumulative link mixed models approach with stepwise backward elimination was used, with two fixed factors (SCOPE and ISS (informational structural

status) and two random factors (experiment ITEM and experiment SUBJECT (participant)). The results showed that both SCOPE and ISS had statistically significant main effects. (SUBJECT had a significant random effect whereas ITEM had no significant effect.)

Discussing the results, the first important conclusion drawn is that since both narrow and wide-scope interpretations received high (around 4) acceptability ratings both in the focus and the given conditions, neither the Focus Narrow Scope hypothesis (31a) nor the Focus Wide Scope hypothesis (31b) holds in its strongest, deterministic form. The next question is whether one of the hypotheses is true in its weaker form, expressing preferences. The authors show, however, that even these weaker hypotheses are unsupported by the results. The narrow scope reading in the focus condition has an average rating of 3.91, whereas the wide scope reading in the focus case has an average rating of 3.8: this difference is found to be statistically non-significant. Likewise, the difference between the narrow (4.32) vs. wide (4.16) scope readings is also non-significant in case the post-verbal universal quantifier is given. This suggests that focus status has no effect on scope interpretation.

Interestingly, the results also show that participants found sentences with given post-verbal QPs significantly more acceptable than sentences with focused post-verbal QPs (independently of scope interpretation): as the authors point out, this probably means that the postverbal position is marked for focused material (which is not altogether surprising given well-known facts of focus-fronting in Hungarian, see É. Kiss (2002) for an overview). Also, the main effects results show that independently of the focus vs. given status of post-verbal QPs, narrow-scope interpretation was favoured over wide-scope interpretation. As the authors point out, this is consistent with the cross-linguistic observation that the scope interpretation consistent with the surface linear order is more accessible, which is arguably due to processing complexity differences rather than grammaticality (Tunstall 1998, Anderson 2004).

To conclude, the authors report on a carefully designed experimental study, which sheds further light on a much-debated issue: the relationship of information structure and quantifier scope ambiguity. The results show that focus status does not affect the scope interpretation of universal quantifiers in Hungarian: a finding which, in more general terms, also corroborates the view that topic and focus belong to two distinct dimensions of information structure. The results also yield further support to two long-held assumptions: that surface linear order affects scope interpretation and that post-verbal position for focus is marked in Hungarian.

In his paper *VV in Hungarian, Robert M. Vago focuses on heteromorphemic V_1+V_2 sequences created by suffixation, and discusses the various ways (V_1 deletion, V_2 deletion, suffix allomorphy) through which VV clusters are avoided. The author professes to have three aims: 1) to contribute to establishing the facts of hiatus resolution in Hungarian, 2) to provide an analysis of this in Optimality Theoretic terms (Prince & Smolensky 1993) based on Casali's (1997, 1998, 2011) proposal, and 3) to test Casali's predictions on hiatus resolution across suffixes.

Following a rather cursory discussion of the theoretical background of hiatus resolution, the author focuses on the object of his study, which is VV sequences at Root+Suffix and Suffix+Suffix junctures. (Thus, root-internal VV sequences and VV sequences arising at the Root+Root and Clitic+Root junctures are declared to be beyond the scope of the paper.)

Looking at Root+Suffix hiatus resolution, the author differentiates three patterns. The most predominant case is V_2 deletion such as with the suffix *-ol/-el/-ök*:

- (34) *-ol* ‘denominal verb’
szám ‘number’ *szám-ol* ‘count’
písi ‘urine’ *písi-[]l* ‘urinate’

The author proposes the following constraints (based on earlier work by Casali 1997, 2001) in the following ranking:

- (35) a. MAX LEX (Do not delete V in roots and content words.)
 b. *VV (Vowel sequences are disallowed.)
 c. MAX MI (Do not delete morpheme initial V.)

This ordering of the constraints produces the correct output:

<u><i>/hordó+unk/</i> ‘our barrel’</u>	<u>MAX LEX</u>	<u>*VV</u>	<u>MAX MI</u>
<i>hordó+unk</i>		*!	
<i>hord[]+unk</i>	*!		
<i>hordó + []nk</i>			*
<u><i>hord[]+ []nk</i></u>	<u>*!</u>		<u>*</u>

Table 1. V_2 deletion in $V_{RT}+V_{SX}$

There is a more limited number of derivational suffixes where V_1 deletion occurs, such as *-ász/-ész* which derives names of professions:

- (36) a. *erdő* ‘forest’ *erd[]-ész* ‘forester’
 b. *szőlő* ‘grape’ *szől[]-ész* ‘viticulturist’

The author proposes that these suffixes are exceptional and are indexed to reorder the general constraint ranking shown in Table 1. (On constraint reranking, cf. Gouskova 2013.)

<u><i>/erdő+sz/</i> ‘forester’</u>	<u>*VV</u>	<u>MAX MI</u>	<u>MAX LEX</u>
<i>erdő+ész</i>	*!		
<i>erd[]+ész</i>			*
<i>erdő + []sz</i>		*!	
<u><i>erd[]+ []sz</i></u>		<u>*!</u>	<u>*</u>

Table 2. V_1 deletion in $V_{RT}+V_{SX}$

Third, the author discusses the even smaller set of suffixes where V-deletion fails to occur and VV sequences survive such as *-ul/-ül*:

- (37) *esperantó* ‘Esperanto’ *esperantó-ul* ‘in Esperanto’

The proposal here is that these suffixes are indexed for yet another irregular hierarchy:

<u>/eszperantó+ul/ ‘in Esperanto’</u>	<u>MAX LEX</u>	<u>MAX MI</u>	<u>*VV</u>
<i>eszperantó+ul</i>			*
<i>eszperant[]+ul</i>	*!		
<i>eszperantó + []l</i>		*!	
<i>eszperantó[]+ []l</i>	*!	*	

Table 3. No deletion in $V_{RT}+V_{SX}$

This part of the paper, while descriptively accurate, might appear somewhat unsatisfactory in terms explanation. The author describes three patterns and shows that all three can be generated by arbitrarily ordering and reordering three cross-linguistically attested constraints. What is to some extent missing is an explanation as to why exactly these 3 orders (out of the theoretically possible 6) are relevant in Hungarian. (Note for example that the ‘No deletion’ pattern can actually also be derived from another constraint ordering: MAX MI > MAX LEX > *VV.) Also, the hierarchy in Table 1 is dominant in comparison to the others (the vast majority of suffixes are subject to this hierarchy of constraints), but here again, there is no consideration why this should be the case. The question why one suffix should be subject to one hierarchy of constraints and why another suffix to another hierarchy is also not explored. Does this have something to do with the quality or the length of the V_2 ? Or maybe the productivity of the suffix? Note also that, somewhat unusually and rather frustratingly for readers, the author provides no comparison of the merits of his analysis versus earlier proposals such as Stiebels & Wunderlich (1999) and Siptár (2008). (These works are mentioned but not discussed in detail.)

At the end of this section, the author discusses the interesting phenomena arising when a V-final adjective meets an arbitrary set of V-initial suffixes (including the plural *-ak/-ek* (Siptár & Törkenczy 2000). Here, if V_1 is a low vowel, we have V_2 deletion (*csúnyá-[]k* ‘ugly-PL’). If V_1 is high, there is typically no deletion (*somorú-ak* ‘sad-PL’). If it is mid, either V_2 deletion or no deletion occurs (*bántó-[]k* ‘hurtful-PL’). An interesting pattern but one that has been known for a long time, and any attempt at actual explanation is lacking here as well.

After this, the author discusses an alternative of V+V avoidance: allomorphic variation in suffixes. The first such case concerns three deadjectival verbal suffixes: *-ít* ‘to make’, *-ul/-ül* ‘to become’ and *-odik/-edik/-ödik* ‘to become’. Consider:

- (38) a. *somorú* ‘sad’ *somor[]-odik* ‘become sad’
 b. *állandó* ‘permanent’ *állandó-s-odik* ‘become permanent’

The author claims that the appearance of *s* here is unpredictable, referring the reader to Siptár’s (2008, 2012) suggestion that its appearance is due to analogical influence (there being a widespread adjective suffix which ends in *s*).

The author also mentions very briefly two other cases of allomorphy which can be interpreted as (at least partly) having to do with the avoidance of V+V sequences at root+suffix junctions: the denominal adjectivizing suffix *-(j)ú/- (j)ű* (*hosszú láb-ú* ‘long legged’ vs. *jó formájú* ‘well-formed’) and the 3rd person singular and plural suffixes *-(j)a/- (j)e* and *-(j)uk/- (j)ük* (*bot-ja* ‘his/her stick’, *ház-a* ‘his/her house’, *kapu-ja* ‘his/her gate’; *bot-juk* ‘their stick’, *ház-uk* ‘their house’, *kapu-juk* ‘their gate’).

Finally, the author discusses hiatus resolution in the case of suffix+suffix, and shows that the patterns of V₂ deletion, V₁ deletion and no deletion are attested here as well (and interestingly, V₂ dominates here too).

V₂ deletion is attested, among other cases, in conditional suffix+personal suffix sequences (*hozol* ‘you(sg) bring’ vs. *hozna-[]l* ‘you(sg) would bring’) and in possessive suffix+case suffix sequences (*asztal-on* ‘on (the) table’ vs. *asztal-a-n* ‘on his/her table’). The author curiously mentions nominal derivation+inflection sequences in relation to cases such as:

- (39) *nyomoz* ‘detect’
nyomozó ‘detective’
nyomozó-[]m ‘my detective’

Note however that this is no different from what happens in monomorphemic stems such as *magnó-[]m* ‘my cassette recorder’, *Margó-[]m* ‘my Margo’ or *ajtó-[]m* ‘my door’: the internal structure of *nyomozó* ‘detective’ plays no role here.

V₁ deletion is only attested in inflected infinitives: *tanul-ni* ‘learn-INF’, *tanuln-[]-om* ‘learn-INF-1SG’. Finally, under the heading ‘No deletion’, the author discusses that instances of the so-called possessive anaphor suffix *-é* ‘belonging to’ and of the special plural allomorph *-i* ‘PL’ can be concatenated, in theory, ad infinitum:

- (40) *Vargá-né* ‘Mrs Varga’
Vargá-né-é ‘that belonging to Mrs Varga’
Vargá-né-é-i ‘those belonging to Mrs Varga’
Vargá-né-é-i-é ‘that belonging to those belonging to Mrs Varga’
Vargá-né-é-i-é-i ‘those belonging to those belonging to Mrs Varga’

The author argues that ‘No deletion’ here is due to two cross-linguistically attested constraints: “Do not delete a long vowel” (hence MAX V, Beckman 1998, 2013) and “Maximize monosegments in morphemes” (hence MAX MS, Casali 1997). Since earlier we saw that there are instances where a long vowel is deleted in the case of V₁ deletion (36a), I find the invocation of MAX V (without discussing why it is relevant in some cases and not in others) problematic. MAX MS ensures that *-i* as the sole exponent of the PL morpheme does not get deleted. Note that this covers *-é* too, making MAX MS actually superfluous.

To conclude, the author provides in this paper a concise overview of how the *VV constraint at root+suffix and suffix+suffix junctures plays out in Hungarian in terms of different hiatus-resolution (or hiatus-non-resolution) strategies. However, as far as the actual analysis of these intriguing patterns is concerned, the reader is left somewhat unsatisfied, as the model offered in the paper appears in many ways to be arbitrary.

In sum, the 15th volume of *Approaches to Hungarian* presents a collection of studies discussing interesting and diverse phenomena at a high level of scholarship: studies which can be very relevant and indeed enlightening to both students of Hungarian (and Finno-Ugric languages in general) and to a more general audience with an interest in one or several of the theoretical issues discussed. In terms of style and editing, the papers are all well-written and the volume as a whole is also carefully edited: there are very few typos and even fewer real errors such as one or two incorrect glosses. Purists might note that the in-text citation formats are not uniform across the papers, but since most readers

will focus on the papers within their specialty field, this is unlikely to even be noted by most readers. To conclude, both in terms of style and content, this volume is a rewarding read and can expect the interest of a wide audience of linguists.

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