

Agreement morphosyntax in Estonian negated clauses

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1 Introduction

In affirmative sentences, Standard Estonian clauses exhibit a familiar pattern: one instance of subject agreement in person and number (hereafter: ϕ -features) on the finite verb.¹

(1) Present indicative (affirmative)

- a. Te vaata-te filmi.
2PL watch-2PL movie.PAR
'You (pl/formal) are watching a movie.'
- b. Sa vaata-d filmi.
2SG watch-2SG movie.PAR
'You are watching a movie.'

(2) Imperative (affirmative)

- a. Vaada-ke filmi!
watch-IMP.2PL movie.PAR
'Watch a movie!'
- b. Vaata filmi!
watch.IMP.2SG movie.PAR
'Watch a movie!'

The paradigms for indicative and imperative agreement are mostly distinct: they overlap only for [1PL].²

(3) Indicative suffixes:

	SG	PL
1	-n	-me
2	-d	-te
3	-b/-s	-vad/-d

(4) Imperative suffixes:

	SG	PL
1	-gu/ku	-me -gem/kem
2	-∅	-ge/ke
3	-gu/ku	-gu/ku

¹Glossing abbreviations are found at the end of the handout, just before the references.

²The -gu/ku forms are not always included as part of the imperative paradigm (see, e.g., Erelt (2003)), as that is the ending associated with the jussive. I have included them in the paradigm in the interest of completeness.

However, the patterns of morphological exponence are different in negated clauses.

- Negated indicative clauses exhibit no agreement.³
- Negated imperative clauses exhibit agreement twice: on the negative auxiliary *ära* and on the lexical verb.⁴

(5) Negated indicative

- a. Te ei vaata(*-te) filmi.
2PL NEG watch-2PL movie.PAR
'You (pl/formal) are not watching a/the movie.'
- b. Sa ei vaata(*-d) filmi.
2SG NEG watch-2SG movie.PAR
'You are not watching a/the movie.'

(6) Imperative (negative)

- a. Är-ge vaada-ke filmi!
IMP.NEG-2PL watch-IMP.2PL movie.PAR
'Don't watch a/the movie!'
- b. Ära vaata filmi!
IMP.NEG.2SG watch.IMP.2SG movie.PAR
'Don't watch a/the movie!'

Note that *ära*'s agreement paradigm is the imperative paradigm.

	SG	PL
(7)	1 <i>är-gu</i>	<i>är-me</i>
		<i>är-gem</i>
	2 <i>ära</i>	<i>är-ge</i>
	3 <i>är-gu</i>	<i>är-gu</i>

In this talk, I will propose an analysis of the syntax and morphology of clausal agreement in Estonian that generates these patterns. In brief:

- **The syntax of clausal agreement in Estonian is uniform:** Pol⁰ (a polarity head) bears the ϕ -feature probe in the language, and it always establishes Agree (Chomsky (2000), *et. seq.*) with the subject.
- The morphology complicates this relationship **in Estonian-specific ways.**
 - In negated indicatives, though Pol⁰ has ϕ -features, it nevertheless spells out as default *ei*.

³To be clear, indicative clauses are not the only clauses in Estonian that lose agreement under negation. It also occurs in conditional clauses and arguably in impersonal/passive sentences as well.

⁴This pattern is also observable in negated jussive clauses (see, e.g., Tamm (2015:408–10)). I focus here on imperatives since they still show at least some person and number distinctions, but the patterns seen in jussive clauses are fully compatible with my analysis, so far as I know.

- In negated imperatives, the combination of negative and imperative features triggers a rule of Feature Copying, resulting in agreement doubling.

These patterns are interesting for general debates of the divide between the syntax and morphology of agreement (Carstens, 2000; Chung, 2013, 2014; Norris, 2014).

- One-to-one mapping: the morphology of agreement transparently reflects its syntax.
 - Negated indicatives: no Agree relationships.
 - Negated imperatives: two Agree relationships.
- Overlapping mapping: the relationship between the morphology of agreement and the syntax of agreement is imperfect.
 - Negated indicatives: one Agree relationship.
 - Negated imperatives: one Agree relationship.

2 Background Assumptions

2.1 Theoretical Assumptions

This analysis will be formalized within a Minimalist approach to syntax (Chomsky 1995, *et seq.*) connected with Distributed Morphology (Halle, 1990; Halle and Marantz, 1993).

- I assume that the syntax manipulates abstract feature bundles containing no phonological content.
- The feature bundles are ultimately realized by particular morphemes (*Vocabulary Items*) when the syntactic representation is sent to the PF interface for interpretation.
 - The syntactic representation may be further altered by morphology-specific operations before or after Vocabulary Insertion takes place (see, e.g., Arregi and Nevins (2012); Embick (2010); Harley and Noyer (1999)).

One particular Minimalist syntactic operation will figure prominently in the discussion: Agree (Chomsky 2000, 2001; Preminger 2014, *a.o.*).

- (8) A PROBE X establishes an Agree relation with a GOAL YP, where:
- X c-commands YP,
 - X lacks values for uninterpretable features that can be supplied by the values of matching features on YP,
 - YP lacks values for uninterpretable features that can be supplied by X,
 - No potential goal intervenes between X and YP,
 - X and YP are in the same phase.
- Agree supplies the values of each category's uninterpretable features from matching features of the other category, with the two features coalescing into a single shared feature.

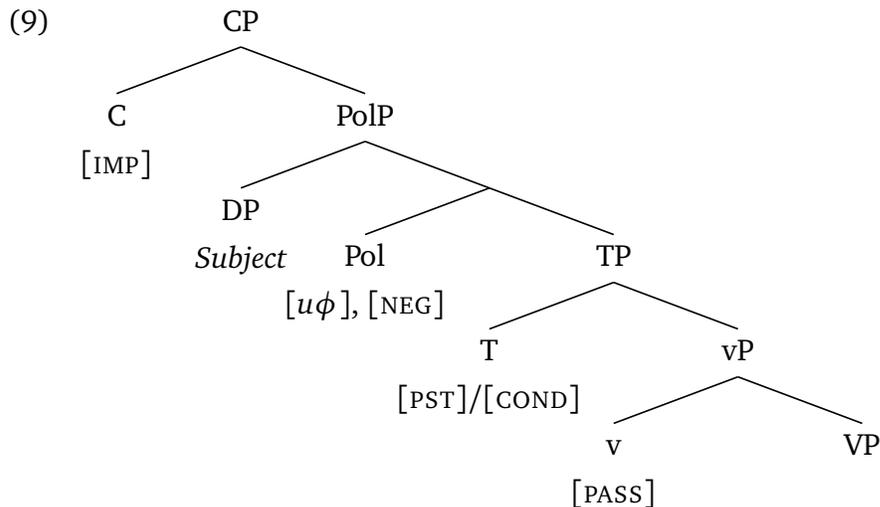
Rough and ready version of (8): A syntactic head with an unvalued feature or set of features [u_{FEAT}] (the PROBE) searches within its c-command domain for a node with a corresponding valued feature or feature set (the GOAL).

The primary Agree relationships we will consider will involve the following pieces:

- A probe with unvalued ϕ -features [$u\phi$], where ϕ -features are person and number features.
- A goal with valued ϕ -features: in every case we will consider here, the subject.

2.2 Assumptions about Estonian clause structure

The basic assumptions I make regarding the clausal architecture of Estonian are presented below (Holmberg et al., 1993).



- v^0 is the head hosting voice features.
- T^0 hosts tense as well as the conditional in Estonian.⁵
- Verbs undergo head movement through v^0 to T^0 in all clauses.⁶
 - Tense and voice are always marked on the verb, even in negated clauses.
 - If PolP is headed by Pol^0 without [NEG], head movement continues to Pol^0 .

⁵This is admittedly a slight simplification— a fully detailed analysis would need to separate conditional and tense, for example. I collapse them here as what is relevant is that they are together located lower than Pol^0 . The behavior of the evidential *-vat* also suggests it is somewhere around T^0 (rather than C^0), though I will not have anything to say about it in this talk.

⁶Time considerations prevent me from discussing how auxiliary *olema* fits into this picture, but I am happy to discuss it in the question period.

- I assume external arguments are generated in Spec,vP, and for concreteness, I will assume their standard (i.e., discourse-neutral) surface position is in Spec,PolP.⁷

Two aspects of this structure will be central to the analysis I propose.

- The ϕ -feature probe in Estonian is found on Pol⁰, not T⁰ as is generally assumed for other languages.
 - In negated clauses, Pol⁰ is spelled out as the so-called *negative verb/auxiliary*.
 - I assume that Pol⁰ in affirmative clauses is realized by agreement morphology alone.
- Morphosyntactic imperative features are hosted in C⁰ (Han, 1999; Rivero and Terzi, 1995)

3 *ei* as a morphologically deficient negative auxiliary

As we have seen, negated indicative clauses in Estonian do not show morphological agreement, regardless of tense.

(10) Sa ei vaata filmi.
 2SG NEG watch movie.PAR
 ‘You are not watching a/the movie.’

(11) Sa ei vaada-nud filmi.
 2SG NEG watch-PST.PCPL movie.PAR
 ‘You did not watch a/the movie.’

Despite the fact that Estonian *ei* does not show morphological agreement, I propose that Pol⁰ establishes Agree in the syntax even in negated clauses.

- All of Estonian’s close relatives have agreeing negative auxiliaries (Miestamo et al., 2015).
- Discussions of Estonian provided by, e.g., Erelt (2003); Tamm (2015) suggest it once had an agreeing negative auxiliary.

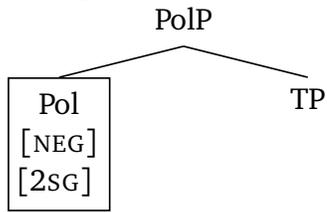
The difference between Estonian and other Finno-Ugric languages only arises at Vocabulary Insertion, when morphological forms are supplied.

- Whereas, e.g., Finnish has multiple vocabulary items for Pol_[NEG]⁰, Estonian only has one.
- Per the Subset Principle⁸ *ei* is inserted regardless of the ϕ -feature values.

⁷As is well known, word order in Estonian is variable, often described as being discourse-configurational (Erelt et al., 1993). Word order is not central to my analysis; it will not be discussed in detail.

⁸The Subset Principle (Halle, 1997) is the Distributed Morphology version of the more familiar Elsewhere Principle, originating in work by Pāṇini. It holds that more specific forms are chosen first, but underspecified forms can be inserted into any context with which they are consistent.

(12) Example terminal node targeted for insertion:



(13) Finnish Vocabulary Items

- a. Pol, [NEG, 1SG] ↔ *en*
- b. Pol, [NEG, 2SG] ↔ *et* ←
- ⋮

(14) Estonian Vocabulary Items

- a. Pol, [NEG] ↔ *ei* ←

Upshot: the syntax of agreement in Estonian negated indicatives is by and large unremarkable. It is unique in that...

- The ϕ -feature probe is Pol⁰, not T⁰.
- Those ϕ -features have no distinct spell-out in most clauses; they all spell out as default *ei*.

4 *ära* as a conglomeration of negation and imperativity

Cross-linguistically, it is common for negation and imperativity to be in some sense incompatible.

- It would not be unreasonable to say this is true for Estonian, as the normal sentential negator *ei* is not present in imperatives.

(6) Imperative (negative)

- a. Är-ge vaada-ke filmi!
 IMPNEG-2PL watch-IMP.2PL movie.PAR
 'Don't watch a/the movie!'
- b. Ära vaata filmi!
 IMPNEG.2SG watch.IMP.2SG movie.PAR
 'Don't watch a/the movie!'

However, I propose that the syntax of negated imperatives is a straightforward combination of the syntax of imperativity and the syntax of negation.

- The apparent irregularities all arise due to aspects of how imperative features behave in the morphology in Estonian.

4.1 Doubling is optional for [1PL] *-me*

Doubling agreement in imperatives is generally obligatory, but it is optional in cases of [1PL] imperatives that use the ending *-me*.

- (15) Är-me vaata(-me) filmi!
 IMP.NEG-1PL watch(-1PL) film.PAR
 ‘Let’s not watch a/the movie!’

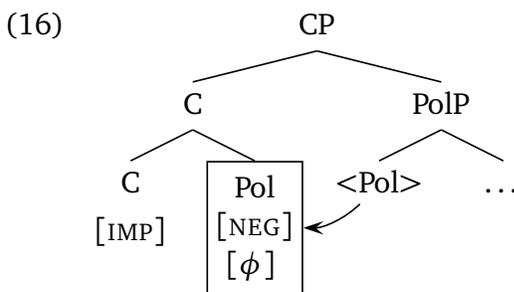
As Tamm (2015) shows, both forms—with doubling and without it—exist in modern spoken and written registers of varying levels of formality, though there was once prescriptive pressure to use the doubled form.

- In the standard language, doubling is only optional for *-me*; it is obligatory for [1PL] imperatives formed with *-gem/-kem*.⁹
- Imperatives with *-gem/kem* and those with *-me* are not freely interchangeable.
 - They differ (at least) in register.
 - I assume the difference between them can be modeled as either distinction in dialect (register) or in morphosyntactic features (related to formality), though I will not formalize the distinction in this talk.

4.2 Negated imperatives in Estonian: Syntax

In section 3, I argued that $\text{Pol}_{[\text{NEG}]^0}$ always agrees with the subject DP.

- In negated imperatives, a C^0 bearing imperative features (henceforth, $\text{C}_{[\text{IMP}]^0}$) merges with PolP .
- $\text{Pol}_{[\text{NEG}]^0}$ undergoes head movement to $\text{C}_{[\text{IMP}]^0}$, yielding a complex head.¹⁰



At this point, the representation is sent to the morphology and to LF to be interpreted.

⁹Interestingly, Tamm (2015) shows examples of *-gem/kem* imperatives which lack doubling, apparently on par with *-me* imperatives. However, such examples are considered non-standard.

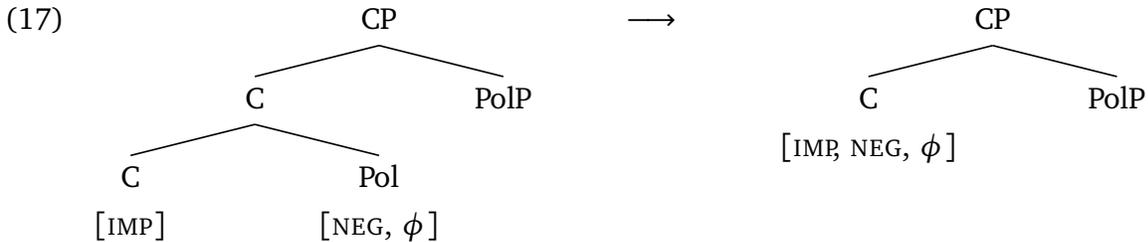
¹⁰An issue that I do not address here is how such a complex head would be interpreted, especially as far as scope is concerned. This issue could be avoided under an account where head movement does not occur until PF (e.g., Schoorlemmer and Temmerman (2012)) or where *ära* is not derived via Head Movement, but Spanning (Svenonius, 2012; Merchant, 2015). I will leave the full details of such accounts to future work.

4.3 Negated imperatives in Estonian: morphology

4.3.1 Fusion of $C_{[IMP]}^0$ and $Pol_{[NEG]}^0$

First, I propose that $C_{[IMP]}^0$ and $Pol_{[NEG]}^0$ undergo Fusion (Halle, 1990; Halle and Marantz, 1993), and this fused head is (ultimately) spelled out as *ära* and its various forms.

- The DM operation of Fusion takes two terminal nodes which are sisters and combines them into a single node.



The ϕ -features on $Pol_{[NEG]}^0$, which are not spelled out in indicatives, are realized once imperative features are present.

- The Agree relationship is established before $C_{[IMP]}^0$ is merged.
- As expected under my analysis, the agreement suffixes used are from the imperative paradigm.

(18) Imperative Negative Auxiliary Vocabulary Items (simplified):¹¹

- a. C, [IMP, NEG, 2SG] \leftrightarrow *ära*
- b. C, [IMP, NEG, 1PL] \leftrightarrow *ärme*
- c. C, [IMP, NEG, 2PL] \leftrightarrow *ärge*
- ⋮

4.3.2 Feature Copying from C^0 to T^0 's Agr node

Imperative agreement is also marked on the lexical verb in negated imperatives.

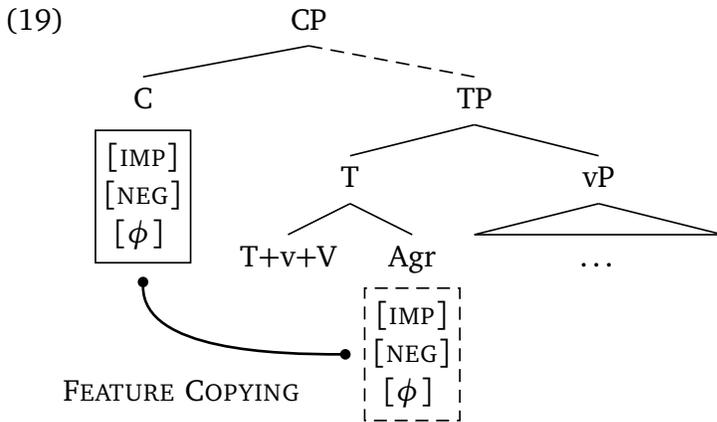
- Recall that doubling is optional in the case of [1PL], suggesting the operation involved in doubling is value-sensitive.¹²
- This is a challenge for theories of agreement doubling rooted in Agree (e.g., Baker and Willie (2010); Carstens (2001); Henderson (2006)), as Agree is generally taken to apply regardless of the feature values on possible goals.

My proposal: an operation of Feature Copying in the morphology, triggered by C^0 with imperative and negative features.

¹¹These Vocabulary Items are simplified in that I abstract away from whatever operation (e.g., Fission), separates the agreement features from the negative + imperative features.

¹²See the appendix for arguments against an approach defined in terms of Impoverishment.

- $C_{[NEG, IMP]}^0$ triggers the insertion of an Agr node attached to T^0 , and C^0 's features are copied onto that Agr node.
- This operation is obligatory in all cases except [1PL].¹³



- This operation is in the spirit of other agreement processes not rooted in Agree: **Enrichment** (Müller, 2007), **optional adjectival concord** (Kramer, 2010), and **nominal concord** more generally (Norris, 2012, 2014).
 - Closest to Kramer’s Feature Copying: features are copied from a c-commanding head, and copying is optional (though Kramer’s is broadly optional).

4.4 Negated Imperatives: analysis summary

This analysis involves a relatively straightforward syntax for negated imperatives in Estonian: syntax of negation + syntax of imperatives.

- In all clauses, Pol^0 bears a ϕ -feature probe that agrees with the subject.
- In negated indicatives, $Pol_{[NEG]}^0$ agrees in the syntax but spells out as only a default form: *ei*.
- In negated imperatives, a C^0 head with [NEG] and [IMP] features triggers insertion of additional **imperative** agreement on the lexical verb.

The upshot of the analysis is that the morphology of agreement exponence in Estonian disguises a system that is straightforward syntactically-speaking.

- This opens the door for the possibility of a more uniform analysis of the syntax of agreement in the Finnic languages.
 - The language-particular stipulations about the realization of Estonian agreement are located in the morphology (following the argumentation of Chung (2014)).

I will now turn to a discussion of the morphosyntactic patterns in negated imperative clauses in other Uralic languages.

¹³But see the caveat in section 4.1 regarding [1PL] ending *-gem/kem*, which must be doubled for most dialects.

5 The greater Uralic picture

There is variation across Uralic with respect to agreement and negation morphology in imperative clauses.

- Here, I will discuss some of the patterns and how the analysis presented makes sense of them.
- This is necessarily only a cursory investigation— I leave detailed investigation of the patterns in other languages to future research.

The analysis presented for Estonian contains the following proposals.

- Syntax: Pol_[NEG]⁰ and C_[IMP]⁰ form a complex head. → **one morphological word**
- Morphology: Fusion of Pol_[NEG]⁰ and C_[IMP]⁰ → **special imperative auxiliary**
- Morphology: Language-particular rule of Feature Copying, from C-Pol complex to T → **agreement doubling**

5.1 Languages (almost) like Estonian

Votic, Livonian, Skolt Saami, and Finnish exhibit very similar morphology in their negated imperative clauses.

- These languages feature a special (suppletive) auxiliary for negated imperatives.
- In negated imperatives, the lexical verb also reflects imperativity, and in some cases, agreement.

(20) Votic: doubled imperative + agreement (Rozhanskiy and Markus, 2015:494)

a. elä näe
IMPNEG.2SG see.IMP.2SG
'Don't see!'

b. elka nähka
IMPNEG.2PL see.IMP.2PL
'Don't see!'

(21) Skolt Saami: doubled imperative only (Miestamo and Koponen, 2015:360)

a. jeä'lled porru/poor
IMPNEG.2PL eat.IMP.CNG/CNG
'Don't eat!'

b. jeällap porru
IMPNEG.1PL eat.IMP.CNG
'Let's not eat!'

These languages would all have rules of Feature Copying, but they would have to be slightly different from Estonian's.

- For example, Votic doubling is always obligatory.
- Skolt Saami doubles only imperative features, but that doubling is optional for [2PL].

5.2 Languages with no Feature Copying

Erzya, Forest Enets, Mari, Pite Saami, South Saami, and Tundra Nenets share some but not all of the above properties.¹⁴

- These languages have a special imperative auxiliary, at least in some contexts.
- However, the lexical verb in negated imperatives is indistinguishable from the negated indicative connegative form. → **no imperativity or agreement doubling**

(22) South Saami (Blokland and Inaba, 2015:382)¹⁵

- a. aellieh b  etieh
IMPNEG.2SG come.CNG
'don't come'
- b. aellebe b  etieh
IMPNEG.2PL come.CNG
'don't come'

(23) Eastern Mari (Saarinen, 2015:335)

- a. i-t tol
IMP.NEG-2SG come.CNG
'don't come'
- b. i-da tol
IMP.NEG-2PL come.CNG
'don't come'

Under my analysis, $C_{[IMP]}^0$ and $Pol_{[NEG]}^0$ form a complex head in these languages, but there is no additional operation of Feature Copying.

- These languages suggest that the origin of imperativity in instances of doubling is high, e.g., on the negative auxiliary (contra Nelson (1998)), as there is no trace of imperativity on the lexical verb.

5.3 A gap: no imperative marking on the negative auxiliary

There is one plausible construction which appears to be unattested in the Uralic languages discussed in Miestamo et al. 2015, schematized in (24).

¹⁴The original version of this handout listed Udmurt in this category as well, but that was an error on my part. Udmurt uses a negative auxiliary in some cases and a negative particle in others (including imperatives). Thanks to Orsolya T  nczos for discussing the Udmurt patterns with me. See also Edygarova (2015).

¹⁵South Saami has two negated imperative auxiliaries. One is used for prohibitives (the forms presented here), and one is used for warnings. Blokland and Inaba (2015) call the latter forms APPREHENSIVES, and they behave indentially to prohibitives as far as the data given here are concerned.

- (24) An unattested pattern:
IND.NEG-IND.AGR *verb.IMP(.CNG)*

In brief, this hypothetical language marks imperativity **only on the lexical (connegative) verb**, not on the negative auxiliary.

- The negative auxiliary is the same in indicatives and imperatives.
- The lexical verb is different in negated indicatives and imperatives.

This gap within the typology of Uralic negation (so far as I know) is predicted by my analysis.

- The source of imperative-marking on the negative auxiliary is the **high position of imperative features** (on C^0).
- The source of imperative-marking on the lexical verb is, essentially, **the negative auxiliary itself** (via the rule of Feature Copying).
 - Because the negative auxiliary intervenes between the imperative C^0 and the lexical verb, there is no way for the verb to raise up to C^0 without passing the negative auxiliary.
 - Instead, it is the negative auxiliary that is associated with imperativity in the syntax, and this imperativity is sometimes passed to the lexical verb.

6 Conclusion

In this talk, I have argued for a straightforward syntax for agreement in Estonian negated clauses.

- $\text{Pol}_{[\text{NEG}]^0}$ is always the only ϕ -feature probe, even when morphological agreement is realized twice or not at all.
- Upshot: the syntax of agreement in Estonian is not radically different from its neighbors.
- More broadly, morphological agreement and the syntactic relation Agree do not track each other directly (Chung, 1998, 2013, 2014; Norris, 2014; Sigurðsson, 2006).

Negation and imperativity are “difficult” to express in combination cross-linguistically (van der Auwera et al., 2013).

- However, some languages express negated imperatives with morphosyntactic ease, suggesting this is only a tendency, not a universal.
- This tendency’s effects vary across languages (e.g., special negation, nonimperative verb forms), and it is not obligatory.
- In Estonian, the result is a system of agreement that looks different from clausal agreement in the language in general.

Future work within this domain could go in a number of directions.

- **Inside Estonian:** ϕ -feature agreement is optional in the conditional mood— is this another case of Agree in syntax with no morphological reflex?
- **Inside Uralic:** some Uralic languages (e.g. Komi, Western Mari) have indicative connegative forms which reflect some agreement— are these another case of Feature Copying triggered by negation?
- **Outside Uralic:** much research concerning the incompatibility of imperativity and negation has focused on languages where standard negation combines with nonimperative verb forms (usually subjunctives or infinitives, see, e.g., Han (1999, 2001); Rivero and Terzi (1995); Zanuttini (1994, 1997))— what can we conclude more broadly from languages of the Estonian type?

A Appendix: A syntactic account

The morphological analysis presented in section 4 requires a morphological method of feature transfer (Feature Copying), and thus it is worth considering the prospects for an account that does not utilize additional mechanisms.

- To my knowledge, these patterns have not been analyzed before.
- In this section, I present the best account I have been able to construct, building on the idea that imperative syntax and ordinary negation syntax are incompatible (Laka, 1990; Zanuttini, 1994).
 - The account cannot straightforwardly explain the optionality of [1PL] doubling.
 - It also does not generalize as easily to the patterns seen in other Uralic languages.

A.1 Alternative analysis: Negation and imperative realize the same head

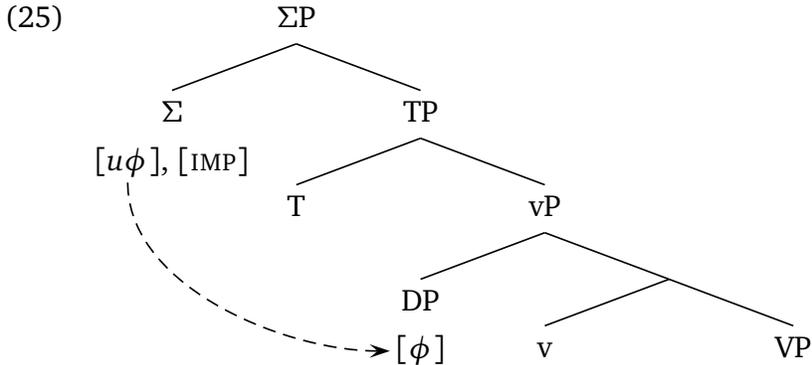
It is well-known that negation and imperativity are incompatible in many languages (with respect to surface forms, at least).

- For example, Laka (1990) proposes that negation and imperative realize the same head.
- Note that in my analysis, imperative and negation are realized by separate heads: C^0 and Pol^0 , respectively.

In order to express prohibitive semantics, an alternative structure would then have to be used.

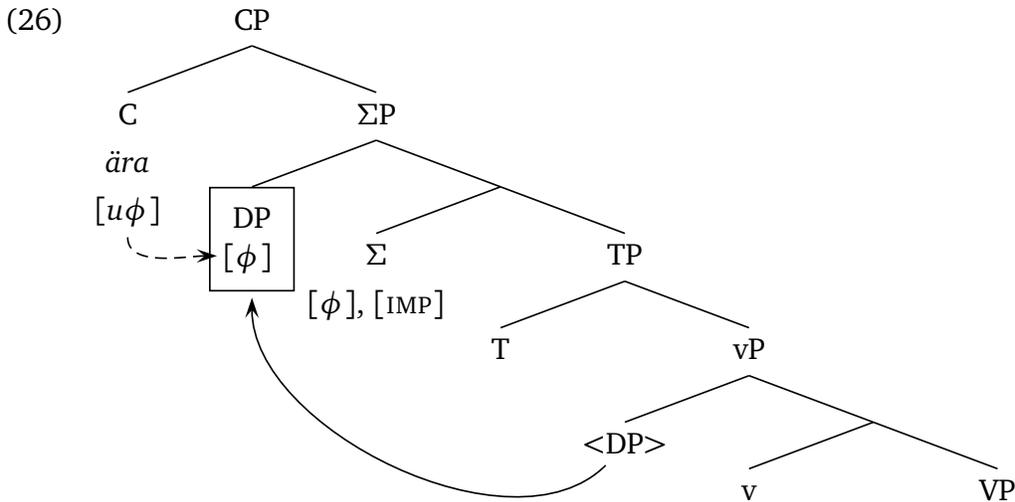
- Concretely: assume that *ära* is a C^0 that selects a ΣP with [IMP] features.
- Further, assume that *ära* is idiosyncratically associated with its own set of unvalued phi-features [$u\phi$].

In the first step, Σ^0 (with imperative features) establishes Agree with the subject DP as normal, schematized by the dashed arrow.



In the second step, *ära* is merged with the structure, and it too has unvalued ϕ -features.

- It searches its c-command domain for a suitable set of ϕ -features, which I assume it finds on the subject—which has moved to Spec, Σ P—for concreteness.¹⁶



We thus have two instances of ϕ -features in the same clause: on C^0 (*ära*) and Σ^0 (lexical verb).

A.2 Alternative analysis: discussion

This analysis succeeds in certain respects.

- *Ära* is restricted to imperatives \rightarrow *ära* only selects Σ P headed by $\Sigma^0_{[IMP]}$.
- *Ära* and the lexical verb must express the same set of ϕ -features \rightarrow they acquire their features from the same source.

It also requires stipulation: the agreement paradigm for *ära* is the imperative paradigm.

¹⁶The particulars of this analysis would not change if the goal was Σ^0 or Σ P

- Thus, *ära* would also have to be idiosyncratically associated with imperativity features.
- In the morphological analysis proposed in section 4, the imperative characteristics of *ära* come from the ordinary imperative head in the syntax.

Bigger concern: no clear path to understand the optionality of [1PL] doubling.

- Recall that [1PL] can be dropped on the lexical verb, but importantly, **only in negated imperatives**.
 - Otherwise, the verb **must** express [1PL] features.
- Under this alternative analysis, there is no formal link between *ära*'s agreement and Σ^0 's (i.e., the lexical verb's) agreement.
 - This means that it is not clear how the lexical verb could “know” that *ära* is present.
 - Instead, we expect doubling in all cases.

A.2.1 Why not Impoverishment?

Another possible route to explaining the optionality of [1PL] doubling: the Distributed Morphology operation of Impoverishment.

- Broadly speaking, Impoverishment removes features that were present in the syntactic representation before Vocabulary Insertion can take place.
- Viewing the agreement patterns in [1PL] imperatives as Impoverishment is essentially the reverse of how I have framed it.
- Informally: we would want to remove [1PL] features from $\Sigma^0_{[IMP]}$ just in case it is in a structure with *ära*.

Depending on one's beliefs about Impoverishment, there are potentially both conceptual and technical arguments against an Impoverishment approach.

- It has been argued that rules of Impoverishment are not arbitrary, but emerge from cross-linguistically supported scales of markedness (see, e.g., Arregi and Nevins (2012); Keine and Müller (2014)).
 - It is not clear why [1PL] would be marked in a way that other sets of ϕ -features would not be.
- It has been proposed that Impoverishment rules refer only to feature bundles, not to the contexts in which those feature bundles appear (see, e.g., Keine (2010); Müller (2007).)
 - Thus, for example, a gender feature might be deleted just in case it is in a feature bundle with [PL].
 - This clearly will not work for Estonian: [1PL] can only be deleted when the higher *ära* is present— in other words, it is not triggered by the mere presence of [1PL] and [IMP] in the same feature bundle.

- It has been proposed that Impoverishment rules may refer to more than one feature bundle, but that these features must be at least in the same M-word (i.e., complex head) (Arregi and Nevins, 2012).
 - This also will not work for Estonian, as the rule would need to refer to two separate M-words: *ära* and the lexical verb.

In summary, an Impoverishment account of the [1PL] facts seems *ad hoc* based on our current understanding of Impoverishment.

A.3 Alternative analysis: prospects & summary

The syntactic account presented here eschews DM postsyntactic operations in favor of syntactic Agree relations.

- This fits with a general theory of clausal agreement wherein more than one head in a clause can serve as a ϕ -feature probe (Baker and Willie, 2010; Henderson, 2006; Kalin and van Urk, 2015).
- It is also consistent with a theory wherein Agree underlies all forms of morphological agreement (though I note it does not require it).

However, it struggles to account for the full range of patterns in negated imperatives.

- Because the groundwork for extended exponence is laid at the start of the derivation, it is difficult to produce the examples where [1PL] agreement is not doubled.
- In fact, standard assumptions about structure-building in Minimalism will always force the “lexical verb” to Agree with the subject **before** *ära* is even merged.

The alternative account also does not fare as well in extending to the broader Finno-Ugric patterns— in particular, the languages where there is no imperative marking on the lexical verb.

- This alternative analysis posits that both instances of morphological imperativity in the Estonian pattern are syntactically real.
- But the patterns seen in other Uralic languages suggest that only the morphological imperativity on the negative auxiliary is syntactically real.

I conclude that the account that makes use of morphological operations is the more promising approach of the two.

- At a minimum, it is able to produce the attested forms.
- It locates plausibly general facts in the syntax, and it locates Estonian-specific facts in the morphology, which I take to be a desirable result.

Abbreviations

Glossing abbreviations are as follows: 1 first person, 2 second person, 3 third person, CNG connegative, COND conditional, IMP imperative, IND indicative, NEG negation, PAR partitive case, PASS passive/impersonal, PL plural number, PST past tense, SG singular number

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