Prosody distinguishes Estonian V2 from Finnish and Swedish

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Abstract

The paper proposes a theoretical account of the verb-second order of Estonian declarative main clauses and two prosodically conditioned exceptions to it. The account is formulated in terms of prosodic constraints affecting the spell-out of movement chains.

Estonian declarative main clauses display a relatively strict verb-second order. Still, there are two main exceptions to it, both of which have been stated in terms of prosody: (i) verb-third order occurs with weak pronominal subjects, and (ii) nuclear-accented finite verbs tend to occur later in the clause.

To account for the first exception, we propose that the verb-second order results from a constraint on prosodic structure, which is breached by full DPs (which correspond to a prosodic phrase), but not by unstressed pronouns (which do not affect prosodic phrasing). This constraint blocks the spell-out of the highest copy of a DP subject, but not of a weak pronoun. As a result, a lower copy of the subject is spelled out, if the subject is a full DP.

We propose that the second exception results from a constraint on prosodic headedness. It blocks the spell-out of the highest copy of the finite verb and causes a lower copy to be spelled out, if the verb receives a nuclear accent.

Index Terms: verb-second, sentence prosody, syntactic theory, Estonian

1. Introduction

The paper proposes an account of Estonian left periphery and verb-second order in comparison with Finnish and Swedish.

In syntactic clauses, what is referred to as "left periphery" contains sequences of various hierarchically organized elements in the "C-domain", where C stands for "complementizer", cf. [1], [2]. In simpler words, left periphery means the very beginning of a sentence, to the left of the finite verb in various languages. Operating with the term "left periphery" is rewarding for implementations such as Text-to-Speech systems of discourse configurational languages, since the phrases that precede the predicate have a fixed order and map to distinct intonation patterns (for Hungarian see [3]). Examining the left periphery to capture the interface between the sound and syntax of Estonian could also be a promising enterprise.

Verb-second (V2) is a phenomenon whereby the finite verb may be preceded by a single constituent in the left periphery, see [4] for a cross-linguistic overview.

We assume the Minimalist approach to syntax [5]. The paper contributes to the understanding of the syntax-phonology interface within this framework, by following an approach whereby prosodic conditions may influence the spell-out of movement chains, cf. [6].

The paper will put forth the hypothesis that two prosodic constraints make the Estonian V2 clausal syntax different from the Swedish V2 and Finnish V3. Swedish has a consistent V2 syntax, and Finnish is a non-V2 sister language of Estonian. We show that the V2 order in Estonian has a formal basis that is different from that in Swedish and only minimally different from the system in the non-V2 language Finnish.

2. Preliminaries

2.1. Previous findings on Estonian V2

The unmarked order in Estonian declarative main clauses is SVO. The finite verb precedes the sentence adverbs, indicating that it has moved (1)[1]. If a constituent is fronted, the word order, in the unmarked case, is V2 (2). According to [7], the fronting of a constituent triggers subject-verb inversion in 90% of the cases.

(1) *Mari <u>küpsetab</u> pühapäeviti tavaliselt kooki.*
    Mari bake.3SG on.Sundays usually cake.PAR
    'Mary usually bakes cakes on Sundays.'

(2) *Pühapäeviti <u>küpsetab</u> Mari tavaliselt kooki.*
    on.Sundays bake.3SG Mari usually cake.PAR
    'Mary usually bakes cakes on Sundays.'

There are exceptions to V2 order, and we address two of them.

Exception 1: A weak pronoun can precede the verb along with another constituent, especially in spoken language (3), while lexical phrases (DPs) cannot (4), see [7], [8], [9].

(3) *Pühapäeviti **ta** <u>küpsetab</u> kooki.*
    on.Sundays 3SG bake.3SG cake.PAR

(4) **Pühapäeviti **Mari** <u>küpsetab</u> kooki.*
    on.Sundays Mari bake.3SG cake.PAR

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[1] Abbreviations: 3SG – third person singular, ACC – accusative, one of the markers of the Estonian direct object, ADE – adessive, the suffix that means "on", ALL – allative, the suffix that means "onto", INF – infinitive, PAR – partitive, one of the markers of the Estonian direct object, PL – plural, PRT – particle.

Exception 2: A nuclear-accented finite verb tends to be in a clause-medial (5) or clause-final position and not in the second position, see [10].

(5) *Politseinik tavaliselt <u>esitleb</u>   ennast.*
   policeman usually   introduce.3SG self.PAR
   'A policeman usually introduces himself.'

2.2. Finnish V3 and Swedish V2

Finnish and Estonian are closely related languages, members of the Finnic subgroup of Uralic languages. They are syntactically similar, but V2 is <u>not</u> characteristic of Finnish [11]. When a constituent is fronted in Finnish, the unmarked order is V3 (6).

(6) *Sunnuntaisin Mari <u>leipoo</u>   tavallisesti kakun.*
   on.Sundays Mari bake.3SG usually   cake.ACC
   'On Sundays Mary usually bakes a cake.' (Finnish)

In Swedish, the V2 order has basically no exceptions; any initial constituent in root clauses is immediately followed by the finite verb (7). There are also no exceptions if the subject is a pronoun, see [4], [12].

(7) *Inte <u>dricker</u> Elsa/hon kaffe.*
   not   drinks   Elsa/she coffee
   'Elsa/she does not drink coffee.' (Swedish, fronted negation)

3. Estonian left periphery and V2

3.1. Two positions for pre-verbal constituents

Despite the fact that Estonian generally allows a single preverbal constituent, while Finnish allows two, we will argue that Estonian left periphery is structured similarly to that of Finnish, as proposed by [11], [13]–[18]. Accordingly, Estonian and Finnish finite verbs are taken to move to Fin, and pre-verbal constituents are taken to be in two different positions, specFinP and the higher specOp(erator)P.

SpecFinP must be filled due to the EPP property of Fin. Subjects occur in specFinP independently of their information structural status. When the subject is absent or elsewhere, a non-subject constituent will fill specFinP (Finnish being more restrictive than Estonian, see fn. 2 below).

The spec of the higher OpP projection, on the other hand, is the landing site of wh-phrases, relative phrases, contrastive topics, and, in Finnish, contrastive foci, cf. [15], [16]. Estonian *kui* and Finnish *jos*, both 'if', are realizations of Op, cf. [15].

3.2. Two kinds of post-verbal subjects

Both Estonian and Finnish allow for a focused subject to remain in a low position (below sentence adverbials). In such a case, another constituent moves to specFinP. This is illustrated for Estonian in (8). (8) shows that while the subject must be focused, the initial constituent is not constrained: it may be either an aboutness/familiar topic or a contrastive topic.

(8) *Selle / KOOGI küpsetab tõenäoliselt MARI.*
   it.ACC / cake.ACC bake.3SG probably   Mari
   'It / The CAKE will probably be baked by MARY.'

Estonian additionally allows an immediately post-verbal "inverted subject", exemplified by (9). The subject is semantically unconstrained in this case, while the initial constituent is constrained: aboutness or familiar topics are

excluded. The intended contexts are 'What about the cake? / What about the bread and the cake?'

(9) **Selle / KOOGI küpsetab keegi*
   it.ACC / cake.ACC bake.3SG somebody
   tõenäoliselt pühapäeval.
   probably   on.Sunday
   'It / The CAKE will probably be baked by somebody on Sunday.'

The inverted subject, but not the low subject, is an effect of the Estonian V2 property. The next section analyzes the Estonian clauses with low vs. inverted subjects.

3.3. Clauses with low vs. inverted subjects

In the case of the <u>low</u> subject in (8), the subject remains in a vP-internal focus-position and the object is moved to specFinP. This is shown by the fact that in such clauses, specOpP is free to host a moved wh-phrase or relative phrase, or Op can be realized as *kui* 'if', as illustrated in (10)[2].

(10) (*Kui / Miks / Need, kellele*) *KOOGI   küpsetab*
   if / why / those to.whom   cake.ACC bake.3SG
   MARI (ja LEIVA   JÜRI)
   Mari   (and bread.ACC Jüri)
   '(If / Why / Those, to whom) the CAKE will be baked by MARY (and the BREAD will be baked by GEORGE)'

The structure of (8) is shown in (11).

(11) [$_{FinP}$ [$_{DP}$ *Selle / KOOGI*]$_i$ [$_{Fin'}$ *küpsetas*+Fin [$_{TP}$ *tõenäoliselt MARI* <V> <DP$_i$>]]]

In the case of the <u>inverted</u> subject in (9), the initial constituent itself is in specOpP. This is evidenced by the fact that clauses with an inverted subject are incompatible with *kui* 'if' and with interrogative and relative phrases, see (12).

(12) (**Kui / *Miks / *Need, kellele*) *KOOGI*
   if / why / those to.whom   cake.ACC
   (*ta*) *küpsetab* (*ta*) *PÜHAPÄEVAL*
   3SG   bake.3SG 3SG on.Sunday

If the initial constituent of inverted subject clauses is in specOpP, then what is the position of the subject and the verb? This will be investigated in the next section.

3.4. Position of the subject and the finite verb in clauses with an inverted subject

Three analyses are possible of V2 sentences in Estonian when there is a constituent in specOpP.

In the first option, the verb is in Fin and the subject moves to specTP, but not to specFinP:

(i) [$_{OpP}$ XP$_i$ [$_{Op'}$ Op [$_{FinP}$ [$_{Fin'}$ V+Fin [$_{TP}$ XP$_k$ [$_{T'}$ T VP]]]]]]

In the second option, the verb is in Op and the subject is in SpecFinP:

(ii) [$_{OpP}$ XP$_i$ [$_{Op'}$ V+Op [$_{FinP}$ XP$_k$ [$_{Fin'}$ Fin [$_{TP}$ XP$_k$ [$_{T'}$ T VP]]]]]]

In the third option, the verb is in Fin and the subject moves to specFinP but, for some reason, is spelled out in specTP:

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[2] (16) additionally illustrates than in Estonian, specFinP is less restrictive than in Finnish: in Finnish, it is restricted to topics [14], while in Estonian, it can also host contrastive topics and other categories. This may be related to the fact that Estonian may have a clause-medial topic position, similar to what has been proposed by [19] for German, see [20].

(iii) [OpP XPi [Op' Op [FinP ~~XPk~~ [Fin' V+Fin [TP XPk [T' T VP]]]]]]

The first option predicts that inverted subject clauses, like low subject clauses, should allow a non-subject constituent in specFinP, along with a constituent in OpP. This is not the case, as shown in (12). This rules out option (i) and suggests that the subject itself is in specFinP, as in options (ii) and (iii).

For the choice between options (ii) and (iii) a comparison with verb movement to Op in Finnish [15] is helpful. In Finnish, the finite verb can move to the head of the OpP in three constructions: Polar questions, contrastive polarity focus, and imperatives. They often involve second position clitics, realizations of Op. All three constructions are incompatible with movement of another constituent to specOpP.

Estonian lacks this entire cluster of phenomena. It lacks the formation of polar questions, polarity focus, and imperative by finite verb fronting. It also lacks second position clitics and contrastive focus fronting. However, some evidence suggests that historically, Estonian may have resembled Finnish. First, there are some marginal constructions involving verb fronting: There is marginal polar question formation by verb fronting, as in (13), there is a particular polarity focus construction, as in (14), and there is the so called narrative V1 in (15).

(13) *Küpsetab ta hästi?*
   bake.3SG 3SG well?
   'Does s/he bake well?'

(14) (*Samamoodi hakkavad talle keeled kergelt külge,*)
   oskab ta ju inglise, soome,
   know 3SG PRT English Finnish
   saksa ja vene keelt.
   German and Russian language.PAR
   '(He's also good at learning languages,) after all, he speaks English, Finnish, German and Russian.'

(15) *Lähen mina hommikul kanu söötma…*
   go.1SG 1SG morning.ADE chicken.PAR.PL feed.INF
   'So there I go one morning to feed the chicken…' [21]

The polar question formation by verb fronting in (13) has been suggested to be a remnant of an earlier situation similar to that in Finnish, cf. [22]. Likewise, second position clitics are known to have historically existed in Estonian, see [23], [24]. Consequently, it is possible that Estonian has lost the second position clitics and most of the movement operations related to these, in particular verb movement to Op, as well as contrastive focus fronting. In this light, it is unlikely that Estonian V2 clauses with an inverted subject involve verb movement to Op. We can thus exclude option (ii) above and retain option (iii).

3.5. The derivation of V2 clauses in Estonian

Following option (iii), we derive V2 for Estonian as follows. The verb moves to Fin, and the subject moves to specFinP. The movement of the subject to specFinP creates a chain of copies. In the unmarked case, the highest copy in specFinP is spelled out. When specOpP is also filled, the spell-out of the subject DP in specFinP is blocked. Instead, a lower copy gets spelled out. This is shown in (16) and in Figure 1.

(16) [Pühapäeviti ~~Mari~~ küpsetab [TP Mari tavaliselt kooki]
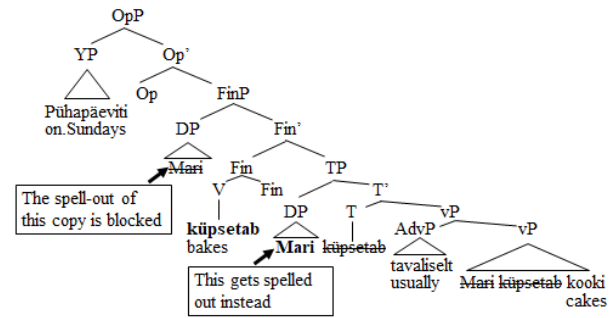   on.Sundays bake.3SG Mari usually cake. PAR

Figure 1: *The derivation of Estonian V2.*

This derivation raises the question what blocks the spell-out of the higher copy of the subject, and why weak pronouns may be spared. The fact that the V2 effect results from a constraint on spell-out, and the fact that a prosodically defined category can escape it, suggest that the blocking factor is phonological in nature. Next we will formulate the hypothesis that a phonological constraint on prosodic structure causes the V2 effect, but spares weak pronouns.

3.6. Accounting for V2 and Exception 1: Prosodic constraint 1

The first exception to V2 consists in the fact that weak pronouns seem to prefer V3 order, especially in spoken language. What distinguishes weak pronouns from full DPs is that they do not affect prosodic phrasing, given that they do not constitute prosodic words. We therefore hypothesize that the constraint that is responsible for V2 but spares weak pronouns is a condition on prosodic phrase structure. More specifically, following insights by [25] and [26], and assuming a recursive prosodic structure along the lines of [27], we propose the following formulation of the constraint: The ι-domain corresponding to a clause contains at most two highest level φ-domains.

An Estonian V2 clause is predicted to correspond to this constraint, as illustrated in (17)–(18). The first φ-domain is constituted by the initial constituent, and the second one is constituted by the rest of the clause. The latter is supported by Estonian accentuation facts [28]. The accentuation facts of Estonian all new clauses suggest the following: (1) a verb is phrased together with its complement, including across intervening prosodic phrases, which become embedded; this is suggested by the fact that a finite verb with a complement is deaccented, independently of whether the verb and the complement are adjacent or not; (2) adjuncts are phrased together with a preceding verb phrase; this is evidenced by the fact that clause-final adjuncts are deaccented.

A V3 clause with a full DP subject however is predicted to have a more articulated structure at the highest level of φ-phrasing, as in (20). This would give rise to a larger number of stronger boundary signals (e.g. longer pre-boundary lengthening) than for V2 clauses, creating the effect of a 'peculiar, slowed down rhythm' – this is how [26, p. 233] impressionistically describes the reason why V3 main clauses are bad in Estonian.

(17) Subject-initial V2: **2 highest φ-domains**

   (ι (φ Mari) (φ küpsetab (φ pühapäeviti) (φ kooki)))
   Mari bake.3SG on.Sundays cake.PAR

(18) V2 with inverted subject: **2 highest φ-domains**

($_\iota$ ($_\varphi$ Pühapäeviti) ($_\varphi$ <u>küpsetab</u> ($_\varphi$ Mari) ($_\varphi$ kooki)))
on.Sundays   bake.3SG   Mari   cake. PAR

(19) V3 with a pronominal subject: **2 highest φ-domains**

($_\iota$ ($_\varphi$ Pühapäeviti) ($_\varphi$ ta   <u>küpsetab</u> ($_\varphi$ kooki)))
on.Sundays   3SG bake.3SG   cake.PAR

(20) V3 with a full DP subject: **3 highest φ-domains**

*($_\iota$ ($_\varphi$ Pühapäeviti) ($_\varphi$ Mari) ($_\varphi$ <u>küpsetab</u> ($_\varphi$ kooki)))
on.Sundays   Mari   bake.3SG   cake. PAR

The prosodic constraint giving rise to V2 simultaneously explains why V3 order is possible with pronominal subjects: pronouns do not affect prosodic phrasing (19). Deriving V3 in Estonian with the pronominal subject is represented as in (21) and Figure 2.

(21) [$_{OpP}$ Pühapäeviti [$_{SpecFinP}$ ta   küpsetab tavaliselt kooki.]
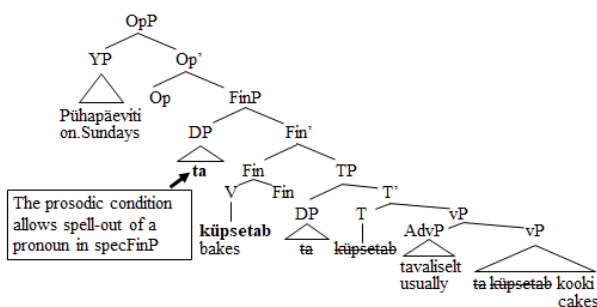on.Sundays   3SG bake.3SG usually   cake.PAR

Figure 2: *Condition 1 allows for V3 with a pronoun.*

More study is needed in future to identify the principles of prosodic phrasing in Estonian, to test the plausibility of the proposed prosodic condition, and to determine the domain of application of the prosodic condition and the V2 effect.

3.7. Accounting for exception 2: Prosodic constraint 2

As mentioned above, there is a second prosody-related exception to Estonian V2. This exception concerns the placement of the finite verb: if the finite verb receives a nuclear accent, it tends to appear lower. We propose to account for this exception with another prosodic constraint affecting the spell-out of the copies in a movement chain. Specifically, we propose that Fin and T have a [uV] feature which probes for V and copies the features of V. The result is a chain of verb copies. In the unmarked case, only the copy in Fin is spelled out. But if the finite verb receives a nuclear accent, spelling it out in Fin would violate a prosodic constraint; therefore, a lower copy gets spelled out, and the higher copies are deleted, as in Figure 3 and (22).
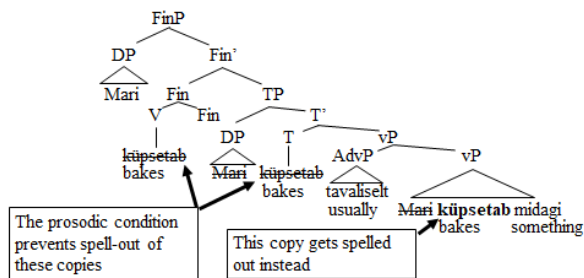

Figure 3: *The V copy in Fin prevented by Condition 2.*

(22) [Mari   tavaliselt [$_{vP}$ KÜPSETAB midagi]
Mari   usually   bake.3SG   something

The prosodic condition that prevents the spell-out of the higher verb copies applies only when the finite verb receives a nuclear accent, that is, when it is the focus exponent. Consequently, this condition is likely to be one that regulates the placement of the nuclear accent, the head of the ι-domain. We therefore tentatively propose that the relevant prosodic constraint concerns the headedness of the ι-domain: The head of the ι-domain is preferably near its right edge. However, more study on Estonian prosodic structure is needed to understand the headedness of Estonian prosodic domains.

3.8. Comparison with Finnish and Swedish

In all three languages, Estonian, Finnish, and Swedish, Fin attracts the finite verb. In Estonian, possibly due to a constraint on prosodic headedness, the verb is not spelled out in Fin when it receives a nuclear accent; instead, a lower copy of the verb is spelled out.

In all three languages, Fin has an EPP-feature attracting a phrasal constituent, in the unmarked case the subject. In Finnish, if it is not the subject it has to be a topic. In Estonian and Swedish, it can be any category. In Swedish, a single constituent can move via specFinP to the left periphery [12]. In Finnish and Estonian, two constituents can move to the left periphery, but in Estonian usually only the higher one gets spelled out. We hypothesize that this is due to a constraint on prosodic structure.

4. Conclusion

The paper has proposed an analysis of Estonian left periphery, and a prosodic account of Estonian V2 and two exceptions to it: verb-third order occurs with weak pronominal subjects, and nuclear-accented finite verbs tend to occur lower in the clause.

Estonian has two left-peripheral positions above the finite verb in Fin: specFinP and specOpP. By default, the subject moves to specFinP, while specOpP hosts for instance interrogative phrases, relative phrases, and contrastive topics.

V2 and the first exception to it are accounted for by a condition on prosodic structure that blocks the spell-out of the highest copy of a DP subject in specFinP when there is a constituent in specOpP. Weak pronouns are not blocked, as they do not affect prosodic phrasing.

The second exception results from a condition on prosodic headedness, which blocks the spell-out of the highest copy of the finite verb and causes a lower copy to be spelled out, if the finite verb receives the nuclear accent.

Estonian is structurally similar to Finnish, with the difference that Estonian has the V2 effect. However, Estonian V2 is syntactically different from Swedish V2, where a single constituent can move to the left periphery.

5. Acknowledgements

6. References

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