Estonian V2 is prosodic

Heete Sahkai (Institute of the Estonian Language, heete.sahkai@eki.ee)
Anne Tamm (Károli Gáspár University, tamm.anne@kre.hu)

Introduction. Our presentation addresses word order variation in Estonian main clauses, which are considered to be predominantly V2. We argue that Estonian V2 is largely a prosodic phenomenon. We argue against an interface model where prosodic constraints cannot affect syntax. Instead, we want to capture the intuition, backed by a corpus of Estonian data, that the position of the finite verb is determined by prosody. More specifically, we offer a preliminary sketch how the Estonian V2 (or the lack thereof) can be accounted for by ranked constraints that affect the p- and c-structure within the parallel architecture model of LFG.

The data. The placement of the finite verb with respect to sentence adverbials varies in Estonian main clauses, as illustrated in (1) and (2). In this minimal pair, the difference in the positioning of the verb is paired with a difference in accentuation: in (1), the verb is deaccented or receives a prenuclear accent, while in (2) it receives the nuclear accent. Specifically, a production study showed that when asked to read sentences like (1) and (2) aloud out of context, the test subjects tend to produce the nuclear accent on the direct object in sentences like (1) (V2), and on the verb in sentences like (2) (non-V2). In other words, when subjects are asked to read a sentence like (2) out of context, they may attribute to it an interpretation which requires the nuclear accent on the verb and the deaccentuation of the argument (a verb focus or verum focus interpretation), while a similar reading is almost never attributed to sentences like (1) (V2) when read aloud out of context.

Some basics of the Estonian prosody and syntax. Estonian has a well argued-for preference for verbs in 2nd position in main clauses despite the fact that it should be considered an OV language (cf. Ehala 2001). In prosody, Estonian displays right-alignment of default phrasal stress, combined with flexible nuclear accent placement due to narrow focus and predicate-argument structure, but also a tendency to align a narrow focus with the right edge of the intonation phrase, as in (3a-c).

Problems with an analysis in the style of a syntax to phonology derivation model. Examples (1) and (2) differ in terms of the position of the finite verb. In (1), it is in the 2nd position, which can be analyzed as I (or T), as it is usually done for languages with both matrix and embedded V2 (cf. Holmberg 2015). Since Estonian can be considered to be on OV language (Ehala 2001), the finite verb in (2) is likely to be located in *v*, rather than V in mainstream generative approaches. Those approaches would propose a movement V to T and V to *v* in the two cases, (1) vs (2), respectively. Subsequently, they would have to derive the different operations from a syntactic difference and to account independently for the difference in accentuation. An unresolved problem that the mainstream approach cannot explain, given the Estonian verb placement and accentuation data, arises since there are no discriminatory syntactic features that could cause the different derivations in (1) versus (2). Intuitively, there is a conflict between the finite verb being in the second position and receiving the nuclear accent. In other words, the reason causing the verb to be in the second position is weaker than the tendency for the nuclear accent to occur near the right edge of the intonation phrase, which in turn is weaker than the tendency for the verb to appear in *v* (to leave the base position).

Towards an alternative account in LFG. The surprising element in our data is the regularity between verb placement and accentuation: V2 lacks nuclear accent, and non-V2 receives primary accentuation. The LFG parallel architecture allows for constraints between various levels. Finite verbs and accents do not appear randomly. Examples (1) and (2) represent regular syntactic variation in verb placement as well as accentuation, but there are no satisfactory syntactic explanations; we pursue an LFG analysis where the primary sentential accent can determine verb placement.

We need an interface model where syntax constrains phonology but crucially also vice versa (e.g., Inkelas and Zec 1995). We use, therefore, a model with parallel levels of syntactic representations such as Asudeh (2006) for LFG. The levels that are involved are the phonological or prosodic structure (p-structure) and syntactic constituent structure (c-structure) within this architecture, as in Butt and King 1998, Mycock (2006), (cf also Mycock and Vincent 2010), Bögel et al (2009). We follow Bögel et al (2010) in allocating the representational levels involved in second position phenomena in parallel architecture; more specifically, we consider the Pashto second position analysis by Bögel (2015) in that we employ both syntactic and prosodic constraints.

We propose an interplay between two constraints. On the one hand we have a c-structure constraint that pertains *to Estonian V2* and, on the other, a constraint at p-structure that concerns *the right-headed nature of Estonian prosodic phrases* (cf. example [3]). At the interface, *the right-headedness constraint must be ranked higher than the V2 constraint*, which can be resolved in an OT style LFG (cf. Bresnan 2000).

We can thus explain the intuition that the accentuation of the finite verb influences the Estonian V2. We are left with some unresolved issues that we believe can be resolved. Discourse functions such as a focus, or other factors, such as quantifiers or accent associated with a particular item in the lexicon, e.g. the particle element of particle verbs, interact with Estonian V2. Once we have more research results on these factors and their exact relationships to prosody, we can incorporate the analyses of Toivonen (2002) and Asudeh et al (2008, 2013), which allow us to handle the construction-like elements from the lexicon, developing their prosodic constraints that have impact on verb placement via p-structure. We could understand Estonian verb placement and accentuation as a kind of "prosodic movement", which allows us to use parts of previous analyses of modern languages as well as ancient ones (cf Lowe 2011). Depending on the results of ongoing research, our data may further need to incorporate analyses where prosody interfaces with information structure or semantic structure as part of the explanation of the data (e.g, O'Connor 2006, Mycock 2006, Mycock and Dalrymple 2011). However, it is crucial to see that these levels of representation interact with V2 (c-structure) via constraints that determine p-structures. If the verb needs to receive accent for any reasons that are determined by other representational levels and interfaces, *then the right-headedness constraint on p-structures overrides the V2 constraint on c-structures.*

Summary. We have solved a major unresolved issue of word order variation in Estonian main clauses. The puzzling data of the varying but predominant V2 property cannot be accounted for in an interface model where prosodic structure is derived from the syntactic structure. Instead, our data led us to the insight that the position of the verb is triggered by prosody. We show how the Estonian V2 placement is determined by two constraints, one at p-structure and the other at c-structure: the right-headedness constraint and V2 constraint, respectively. The right-headedness constraint is ranked higher in our model than the V2 constraint. This ordering of constraints captures our evidence on verb placement in our material and the intuition that prosody triggers syntax in those cases and not vice versa within the parallel architecture model of LFG.

Examples, references, and abbreviations

(1) *Deklaratsioon* ***maini-b*** *ilmselt* *vähemusi*.
declaration[NOM] mention-3SG probably minority.PAR.PL
'Probably the declaration mentions minorities.' (see also Figure 2)

(2) *Deklaratsioon* *ilmselt* ***maini-b*** *vähemusi*.
declaration[NOM] probably mention-3SG minority.PAR.PL
'The declaration probably does mention the minorities.' (see also Figure 3)

(3) a. *Mari* *and-is* *raamatu* *MULLE*. (focus on 'to me')
M[NOM] give-3SG.PST book.ACC to.me
b. *Mari* *and-is* *mulle* *RAAMATU*. (focus on 'book')
M[NOM] give-3SG.PST to.me book.ACC
c. *Raamatu* *and-is* *mulle* *MARI*. (focus on 'Mary')
book.ACC give-3SG.PST to.me M[NOM]
Discourse variations of 'Mary gave me a book.'

(Less known abbreviations: PAR – partitive)

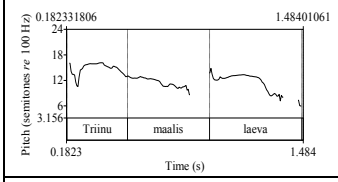

Fig. 1. The verb (maalis) is integrated into the prosodic phrase of the direct object (laeva)

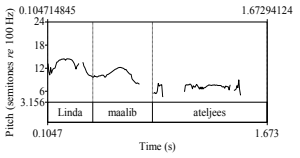

Fig.2. The adjunct (ateljees) is prosodically subordinate to the verb (maalib): the adjunct is deaccented and the verb has the nuclear accent

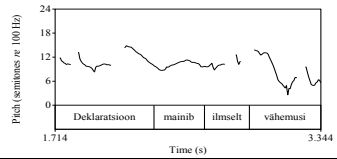

Fig. 3. Nuclear H*L accent on the object (vähemusi) in a V2 sentence

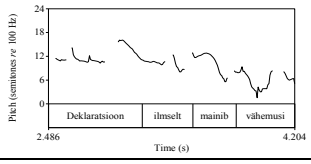

Fig. 4. Nuclear H*L accent on the verb (mainib) in an adverb-verb (non-V2) sentence

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