RESEARCH ARTICLE

Raised and in-situ preverbal foci: A unified prosodic account

Lena Borise[1] , Andreas Pregla[2] and Balázs Surányi[3]

[1]Department of Linguistics and Basque Studies, University of the Basque Country (UPV/EHU); Université Paris Cité, CNRS, Laboratoire de linguistique formelle
[2]Universität Potsdam, SFB 1287[3]
[3]HUN-REN Hungarian Research Centre for Linguistics & Pázmány Péter Catholic University
Corresponding author: Lena Borise; Email: lena.borise@ehu.eus

Abstract
It has been shown in the literature that the preference or requirement for immediately preverbal focus placement, found in a number of languages (especially verb-/head-final ones), can result from different syntactic configurations. In some languages (e.g., in Hungarian), immediately preverbal foci are raised to a dedicated projection, accompanied by verb movement). In others (e.g., in Turkish), preverbal foci remain in situ, with any material intervening between the focus and the verb undergoing displacement), to allow for the focus–verb adjacency. We offer a unified account of the two types of preverbal foci, raised and in situ ones, based on their prosodic requirements. Specifically, we show that both types of foci require alignment with an edge of a prosodic constituent but differ in the directionality of alignment (right or left). Our analysis rests on bringing together two independent existing proposals, Focus-as-Alignment and flexible Intonational Phrase (*ι*)-mapping. We show that this approach makes correct predictions for a number of unrelated Eurasian languages and discuss some further implications of this approach.

1. Introduction

In a number of languages (especially verb-/head-final ones), there is a requirement or a strong preference for narrow foci to surface in a particular position in a clause – namely, immediately preverbally (Kim 1988; Kidwai 1999; van der Wal 2012; a.o.). In languages of this type, placing non-focal material between the narrow focus and the verb is not allowed (or dispreferred). This is illustrated in (1); throughout the paper, (finite) verbs are going to be underscored and narrow foci rendered in SMALL CAPS, to ease their identification.

(1)   a. XP F<small>OC</small> V̲
      b. *^{/??}F<small>OC</small> X̅P̅ V̲

The above has been reported for a number of languages, with the most well-known example being Hungarian (Bródy 1990a; É. Kiss 1998). Preverbal focus has also been reported for numerous languages of the Caucasus, including Chechen (Komen 2007), Ingush (Nichols 2011), Eastern Armenian (EA) (Comrie 1984; Dum-Tragut 2009; Megerdoomian & Ganjavi 2000), Georgian (Skopeteas, Féry & Asatiani 2009; Skopeteas & Fanselow 2010; Borise 2019, 2023), and Iron Ossetic (IrO) (Abaev 1939; Erschler 2008, 2012; Borise & Erschler 2023); languages of India, including Hindi (Mahajan 1990; Dayal 1996; Kidwai 2000; Manetta 2010), Kashmiri (Bhatt 1999; Munshi & Bhatt 2009; Manetta 2011) and Malayalam (Jayaseelan 1996, 2001, 2003); and Turkish (Erguvanlı 1984; Erkü 1983; Göksel & Özsoy 2000; İşsever 2003; Öztürk 2004; Şener 2010; Kamali 2011) and other Turkic languages, as well as Basque (Elordieta 2001; Arregi 2002; Ortiz de Urbina 2002).

Numerous potential explanations for preverbal focus placement have been put forward, couched within various research traditions and bringing in a number of factors that could give rise to it. According to a functional perspective, preverbal foci emerge because focused (i.e. stressed) constituents are perceived as more prominent if adjacent to verbs, which are typically unstressed (Hyman & Watters 1984: 263; Erteschik-Shir 1997; Frascarelli 2000). Within formal syntax-centered approaches, several explanations have been offered, which, while differing in the analytical details, are built on the shared intuition that adjacency results from a structural configuration that involves a specifier and the head. According to one, a head that houses the verb carries/inherits a [+Foc] feature and assigns it to the XP in its specifier, or checks the [+Foc] feature of the XP in its specifier (Horvath 1981, 1986; Tuller 1992; Frascarelli 1999; Kidwai 1999; Miyagawa 2010), which results in linear adjacency between focus and the verb. On an alternative approach, focus–verb adjacency results from the fact that the dedicated syntactic projection that harbors the focus in its specifier immediately dominates the projection that houses the verb in its head, with no material intervening between the specifier of the focus-containing projection and the head of the lower projection (Jo 1995; Aboh 2007; Mycock 2007; Cruschina 2012), which also yields adjacency. Finally, in syntax–prosody interface work, it has been suggested that the immediately preverbal position is targeted by default sentential stress, and narrow foci are placed there because they need to bear sentential stress (Cinque 1993; Vallduví 1995; Arregi 2001; Ishihara 2001; Szendrői 2003, 2017).[1]

A growing body of cross-linguistic work points to the conclusion that there may be two distinct syntactic scenarios in which immediately preverbal foci are found: a structure involving focus raising and one having focus in situ (putting aside cleft constructions). The raising derivation involves A-bar movement of the focal element to the specifier of a projection XP, accompanied by movement of the verb to the head of the same projection, X^0, which results in focus–verb adjacency (e.g. Bródy 1990b, 1995 for Hungarian). In the in situ mechanism, in contrast, immediately preverbal focus placement is achieved with both elements staying in situ and becoming adjacent due to displacement of the material that

---

[1] For a comprehensive summary of the literature on the approaches to preverbal focus placement, see van der Wal (2012).

might intervene between them (e.g. Göksel & Özsoy 2000 on Turkish). The availability of two distinct syntactic mechanisms that produce the same linear result – immediately preverbal focus placement – raises the question whether a unified explanation of this phenomenon is at all possible.

In this paper, we show that, indeed, a unified explanation, which allows us to account for preverbal foci that have either type of underlying syntax, is available and comes from the syntax–prosody interface. Our analysis is built upon and brings together two independent existing ideas. The first one is the Focus-as-Alignment (FA) model (Féry 2013), according to which the main prosodic requirement of a focused constituent is to align with the right or left edge of a prosodic constituent, typically an Intonational Phrase (ι). The second is the flexible ι-mapping hypothesis (Hamlaoui & Szendrői 2015), according to which the size of ι is determined by the syntactic height of the verb.

Bringing together these two approaches allows us to provide a principled account of ι-size as well as focus placement in the prosodic structure, which makes correct predictions for the syntactic structures involved and derives immediately preverbal placement of both types of preverbal foci. Specifically, building on Szendrői's (2003) seminal work on Hungarian, we claim that raised preverbal foci systematically align with left ι-edges, which are created by verb movement, and illustrate this with data from Hungarian (Uralic), EA (Armenian), and IrO (Eastern Iranian). In turn, in situ preverbal foci align with right ι-edges (with the final verb trapped between the focused constituent and the ι-edge), as data from Turkish (Turkic) and Georgian (Kartvelian) show. Our analysis is schematized in (2), where the ι-edges are marked with curly brackets.

(2)   a.   **Raised:** $_\iota${Foc V …}
       b.   **In situ:** $_\iota${… Foc V}

With respect to the architecture of the syntax–prosody interaction and the interface between information structure (IS) and prosody, we assume that prosodic interface requirements, such as the need for alignment with ι-edges, may select from different syntactic structures (and corresponding permutations of word order) that are otherwise derivable in the syntax of a given language (as a result of the application of movements or the inclusion of optionally projected functional phrases). In this, we subscribe to the view that interface prosodic requirements act as a filter on the possible structures that syntax can provide (Samek-Lodovici 2005; Féry & Samek-Lodovici 2006; Neeleman & Van de Koot 2008; a. o.), taking prosody to act as the mediating link between syntax and information-structural focus interpretation (Fanselow 2008; Fanselow & Lenertová 2011).[2] The interaction of interface constraints is modeled in the Optimality Theory (OT) framework (Prince & Smolensky 1993).

Ultimately, our analysis makes the case that in preverbal focus constructions focus–verb adjacency is epiphenomenal across the board: i.e., languages do not actively seek for narrow foci to be immediately preverbal. Instead, preverbal placement is ultimately the side-effect of the prosodic and interface-related requirements of narrow foci. This conclusion, backed by a rich set of case studies of languages exemplifying each of the two

---

[2] We limit our discussion to plain new information focus; special meaning components, like correction, may be associated with dedicated syntax (see Szendrői 2017). The notion of new information focus is operationalized here as referring to those uses of focus that provide an answer to an information question.

main types, finds further support in a novel data pattern from Urakhi Dargwa (UD) (Nakh-Dagestanian), which is predicted by our account but would be hard to accommodate for other approaches.

The paper is structured in the following way. Section 2 provides the background for the argument to follow: the two syntaxes behind preverbal foci (2.1), the IS–prosody interface (2.2), and the syntax–prosody interface (2.3). Section 3 introduces our analysis of raised preverbal foci and substantiates it with data from Hungarian (3.1), EA (3.2), and IrO (3.3). Section 4 turns to in situ preverbal foci and exemplifies our analysis with data from Turkish (4.1) and Georgian (4.2). Section 5 analyzes a special interaction of focus and verb raising in UD. Finally, Section 6 concludes.

2. Background

2.1. *Two possible syntaxes behind preverbal foci*

A language that is canonically used to illustrate the phenomenon of immediately preverbal focus is Hungarian (Uralic). In Hungarian, immediately preverbal placement of narrow foci is obligatory; example (3) below provides a construction with immediately preverbal object focus and demonstrates that inserting any other material – such as the adverb *végül* 'eventually' – between the focus and the verb leads to ungrammaticality.

(3)   (Who did Peter get to like eventually?)
      <Végül>   Mari-T_j   <*végül>   szerette   meg   Péter.   Hungarian
      eventually Mary-ACC[3] eventually love.PST   PRT   Peter
      'Eventually, Peter got to like MARY.'

Another language with obligatorily immediately preverbal focus is Georgian (Kartvelian), as illustrated for subject focus in (4):

(4)   (Who was building a house last year?)
      Šaršan   <saxl-s>   Giorgi   <*saxl-s>   a-šen-eb-d-a.   Georgian
      last_year house-DAT Giorgi.NOM house-DAT VER-build-SF-SM-IPFV.3SG
      'Last year, GIORGI was building a house.'

Despite surface similarities between languages with preverbal focus placement, two distinct types of syntax have been identified as deriving the left-adjacency of the focus to the verb in these cases. Hungarian and Georgian, in fact, represent these two mechanisms. The first mechanism is (i) movement of both the focus and the verb into the specifier and head of the same functional projection (Bródy 1990a on Hungarian; Bhatt 1999 on Kashmiri; Jayaseelan 2001 on Malayalam; Elordieta 2001 on certain types of foci in Basque; a.o.). As motivation for movement, feature-checking in Spec,XP or

---

[3] In the glossed examples, the Leipzig glossing rules are used: 1 – first person, 3 – third person, ABS – absolutive, ACC – accusative, AUX – auxilliary, COP – copula, DAT – dative, DEF – definite, ERG – ergative, GEN – genitive, INF – infinitive, IPFV – imperfective, LOC – locative, NEG – negation, NOM – nominative, PL – plural, PRS – present, PST – past, PTCP – participle, SBJ – subject, SG – singular. We are using the following additional glosses: AOR – aorist, LNK – linker, PRT – verbal particle, PRV – preverb, SF – stem formant, SM – stem marker, SUP – superessive, and VER – version marker.

alignment of the focused constituent with nuclear stress/nuclear pitch accent (NPA), which coincides with the Spec,XP position, have been invoked; these correspond to Bródy's (1990a) and Szendrői's (2003) analysis of Hungarian, respectively. The second mechanism of achieving focus–verb adjacency is (ii) displacement of the material intervening between the focus and the verb, via (post-)syntactic movement or base generation of a non-canonical word order. The displacement may be motivated by the information-structural properties of the displaced material (Şener 2010 on Turkish; Borise 2019; 2023 on Georgian) and/or by the need for the focused constituent to carry the NPA (Arregi 2002 on Basque).

Whether a language with preverbal focus uses mechanism (i) or (ii) may be revealed, albeit in a language-specific manner, by a number of properties associated with the construction. One of these is verb inversion, which is symptomatic of preverbal focus of type (i) but not of type (ii). Verb-inversion phenomena encompass all cases in which an element that is rigidly preverbal in a canonical order appears postverbally in non-canonical orders and in which rightward movement of that element is ruled out. The best-known cases include the inversion of the (auxiliary) verb across the (clitic) subject in languages like English and French. Not all verb inversion operations involve inversion with a syntactic phrase, however. EA displays inversion of the auxiliary with the lexical verb, for instance (see Section 3.2 below). In Hungarian, too, one of the facts supporting a type (i) analysis of preverbal focus is verb inversion (Bródy 1990b). In the canonical order of broad focus utterances like (5a), so-called verbal modifiers, notably including verbal particles (PRTS), occupy an immediately preverbal position. By contrast, in sentences with a preverbal narrow focus the verb surfaces to the left of the verbal modifier, as in (5b).

(5) a. *Péter* [PredP *meg szerette* [vP *Mari-t*]].
        Peter   PRT love.PST   Mary-ACC
        'Peter got to like Mary.'

     b. (Who did Peter get to like, eventually?)
        Végül   *Péter* [FP *MARI-T*ᵢ   *szerette*ᵥ [PredP *meg* tᵥ [vP tᵥ tᵢ]]].
        eventually Peter   Mary-ACC love.PST   PRT
        'Eventually, Peter got to like MARY.'

Another clear diagnostic is long movement of the focused phrase. If a focused constituent originating within an embedded clause is displaced by a movement operation to the immediate left of the matrix verb, then this provides evidence of a raised preverbal focus of type (i) over the in situ focus construction of type (ii). The fact that Hungarian permits long focus movement (É. Kiss 2002: 250–258), as illustrated in (6), provides justification to assigning its preverbal focus to type (i). EA sides with Hungarian in this regard too (see Section 3.2).

(6) *János* HOLNAPᵢ   *akarja* [*hogy indul-j-unk*   tᵢ].
     John   tomorrow wants   that leave-SBJ–1SG
     'John wants us to leave TOMORROW.'

While surface verb inversion and long movement are striking symptoms of a structure of type (i), they are not necessarily found in every language with this kind of preverbal focus

construction (e.g. verb movement may happen to be string-vacuous, and focus raising may happen to be clause-bound in a language). Consequently, their absence does not, strictly speaking, preclude a type (i) analysis.

What diagnostics may be both applicable and revealing in a language is a matter for language-specific empirical investigation. For instance, as syntactic movement, focus fronting may be expected to display island effects (provided that the relevant non-clausal islands can be constructed) or create cross-over effects. If such expected signs of focus movement are systematically lacking, then, unless their absence can be accounted for on the basis of other, independent properties of the language (such as the application of optional scrambling that obviates the crossing configuration that would give rise to a cross-over effect), this points to an in situ focus construction of type (ii).

This can be illustrated with Georgian, in which neither the focus nor the verb undergoes dedicated focus-related movement – instead, the focus–verb adjacency results from the displacement of intervening material to the left/right periphery. The cumulative evidence for this comes from, among others, the lack of movement effects associated with the focused constituent (e.g. island effects), the strict ban on cross-clausal focus movement, as well as the relative positioning of narrow foci and non-topicalized low adverbs (Borise 2019, 2023). For the sake of illustration, the latter is shown in (7): the focused constituent being placed below *iʃviatad* 'seldom' points to it being found low in the clausal structure – i.e. lower than the clause where a discourse projection FP may be found:[4]

(7)   ('How many students does the teacher seldom call on?')
       Masts'avlebel-i iʃviatad SAM-ZE   NAK'LEB ST'UDENT'-*s i-dzax-eb-s.*
       teacher-NOM   seldom three-on less   student-DAT VER-call-SF-PRS.3SG
       'The teacher seldom calls on FEWER THAN THREE STUDENTS.'

Georgian also offers an additional, language-specific test for the position of focus, which is based on the relative positioning of foci and negative indefinites. Specifically, it can be shown that negative indefinites in Georgian stay in their base positions and do not undergo A- or A-bar movement. When co-occurring with narrow foci, the relative order of negative indefinites and narrow foci is only compatible with in situ placement of narrow foci as well – as opposed to movement of foci to FP; for details, see Borise (2019, 2023).

Taken together, these facts demonstrate that Georgian foci remain in situ, and the adjacency with the verb is achieved via displacement of the would-be intervening material. This is illustrated in (8):

(8)   (Who was building a house last year?)
       Šaršan   saxl-s$_i$ [$_{VoiceP}$ *GIORGI* t_i *a-šen-eb-d-a*].
       last_year house-DAT   Giorgi.NOM   VER-build-SF-SM-IPFV.3SG
       'Last year, GIORGI was building a house.'

---

[4] This is in contrast with the behavior of wh-phrases in Georgian, which consistently surface above adverbs like *iʃviatad* 'seldom', as in (i). Descriptively, wh-phrases in Georgian also appear immediately preverbally, but, unlike narrow foci, belong to the raising/type (i) construction:

(i)   *Masts'avlebel-i ra   raodenob-is st'udent'-s i-dzax-eb-s   iʃviatad?*
       teacher-NOM   what number-GEN student-DAT VER-call-SF-PRS.3SG seldom
       'What number of students does the teacher seldom call on?'

To recap, despite the surface similarity, preverbal foci may be derived via two distinct syntactic configurations. It might seem that the two types of preverbal foci represent coincidentally identical outcomes of two unrelated grammatical processes, but we propose that a unified account rooted in the prosodic requirements of foci is possible.

2.2. *The interface between information structure and prosody: The Focus-as-Alignment model*

The analysis that we propose is built on bringing together two existing proposals. The first one is the FA model, proposed in Féry (2013). The main insight of the FA model is that focused constituents are required to be aligned with the right or left edge of a prosodic domain – most commonly, an *ι*. In order to achieve this alignment, a language may employ a number of strategies, including syntactic movement (and, possibly, post-syntactic displacement), an alternative syntactic structure (e.g. a cleft), insertion of a prosodic boundary, or enhancement of an existing prosodic boundary. According to the FA model, prosodic prominence, which is often taken to be a universal prosodic property of focus (Truckenbrodt 2005; Büring 2010; a. o.) may, but does not have to, co-occur with prosodic alignment. In other words, prominence and alignment of foci with prosodic boundaries are taken to be independent from each other (it is worth noting, though, that prosodic prominence also preferentially aligns with prosodic boundaries; more on this below).

The FA approach goes against the traditional assumption that prominence, in the form of the NPA, is an intrinsic, and/or the sole, required prosodic correlate of focus; this is the key tenet of the Focus-as-Prominence (FP) model (Jackendoff 1972; Reinhart 1995; Truckenbrodt 1995; Zubizarreta 1998; Gussenhoven 2008; Büring 2010; a.o.). At least two pieces of evidence provide support for the FA as opposed to the FP approach. The first one is the existence of languages in which foci are aligned with prosodic boundaries but do not carry the NPA, because it is realized elsewhere in the clause: e.g. Nɬeʔkepmxcin/Thompson River Salish (Koch 2008a, 2008b); see also Hoot (2012) for stress–focus mismatch in the case of focus on prenominal modifiers in Spanish. The second one is languages that do not provide evidence for a phonologically meaningful NPA, such as French (Féry, Hörnig & Pahaut 2010) and Georgian (Dzidziguri 1954; Alkhazishvili 1959; Zhghenti 1963, 1965a).

Féry (2013) formalizes the FA approach as a series of violable constraints within the framework of OT. The key constraints are two ALIGN constraints (McCarthy & Prince 1993; Selkirk 1996; a.o.) that are responsible for the alignment of the focused constituent with an *ι*-boundary, as in (9). The higher-ranked one of the two determines whether a given language displays right- (9a) or left-alignment of focus (9b).

(9)   ALIGN-FOCUS[5]
    a. ALIGN-R(FOCUS, *ι*)
        Align a narrowly focused constituent with the **right** boundary of an Intonational Phrase (*ι*).
    b. ALIGN-L(FOCUS, *ι*)
        Align a narrowly focused constituent with the **left** boundary of an Intonational Phrase (*ι*).

---

[5] We use a unified constraint-naming scheme, which does not necessarily correspond to that in the sources cited. Constraints of the form ALIGN-R/L(X, Y) mean 'align the right/left edge of every X with the right/left edge of Y'.

The FA approach also incorporates the view that alignment of a prosodic boundary with the main locus of prosodic prominence (e.g. an NPA) is enforced by a set of dedicated constraints (Truckenbrodt 1995; Samek-Lodovici 2005). Here we adopt the Align-head constrains in (10), where HEAD refers to the NPA.[6] As with the Align-focus constrains, higher ranking of one of these constraints ensures that it is dominant in a language.

(10)   Align-head
    a. Align-R(HEAD, ι)
        Align the head of each Intonational Phrase (ι) with its **right** boundary.
    b. Align-L(HEAD, ι)
        Align the head of each Intonational Phrase (ι) with its **left** boundary.

Crucially, the lack of a direct link between focus and prominence (i.e. the absence of constraints directly aligning the narrowly focused constituent with nuclear prominence) in the FA approach means that the alignment of focus with prominence is mediated by alignment of both with a prosodic boundary – i.e. it is obtained in those languages where both (9a) and (10a), or (9b) and (10b), are high-ranked. Accordingly, the FA approach can successfully account for languages like Nɬeʔkepmxcin/Thompson River Salish, in which foci and prominence align with different edges of ι (left and right, respectively; Koch 2008a, 2008b), and languages like French and Georgian, in which foci are not aligned with nuclear prominence due to their lack of a phonological notion of a NPA.[7]

In addition to the Align constraints, Féry (2013) employs a lower-ranked constraint that penalizes word order permutations that deviate from the canonical word order (CWO) in a language, as shown in (11). Lower ranking of CWO means that it is violated in languages that employ specific syntactic configurations for the expression of narrow focus.

(11)   Canonical Word Order (CWO)
    Realize the canonical word order.

To illustrate the workings of the FA approach, consider the example of Italian, in which narrow foci (e.g. those found in responses to *wh*-questions) surface clause-finally and carry prosodic prominence (Samek-Lodovici 2005; cf. also Szendrői 2001), as shown in (12a). Crucially, placing the narrowly focused constituent anywhere other than the clause-final position – even if that corresponds to a canonical subject-verb (SV) word order, as in (12b) – results in infelicity.

---

[6] Féry (2013), drawing on Truckenbrodt (1995), employs Align-R(ι, HEAD) constraints rather than Align-R(HEAD, ι) constraints, as we do, following Samek-Lodovici (2005). This choice will be important for the discussion of Turkic and Georgian in Section 4, where nested ιs are attested, but there is no requirement for the edge of each ι to be aligned with a head.

[7] According to the main alternative that Féry (2013) argues against, the indirect alignment approach, focus is aligned left or right only because focus is aligned with the main prominence (a.o., Truckenbrodt 1995; Szendrői 2003; Samek-Lodovici 2005), and the main prominence, in turn, is independently aligned left or right within a prosodic constituent.

(12) (Who has laughed?)
  a. $_ι${*Ha riso   GIANNI*}   Italian
       has laughed John
       'JOHN has laughed.'

  b. ?? $_ι${*GIANNI ha riso*}
          John   has laughed
       'JOHN has laughed.' (Féry 2013: 694)

Féry (2013) analyzes Italian as a language with right-aligned foci and right-aligned prominence, which translates into high-ranked ALIGN-R(FOCUS, $ι$) and ALIGN-R(HEAD, $ι$), which are unranked with each other but both outrank CWO. This is illustrated in (13); here and in other tableaux, focus is indicated by SMALL CAPS and the NPA by **boldfacing**. In (13), candidate (a) satisfies both ALIGN-R(FOCUS, $ι$) and ALIGN-R(HEAD, $ι$), and the violation on CWO that it incurs is not fatal. Candidate (b) violates both higher-ranked constraints, and candidate (c) violates ALIGN-R(FOCUS, $ι$); these violations of the higher-ranked constraints take both (b) and (c) out of the race.

(13)

Gianni ha riso (Focus = *Gianni*)	ALIGN-R(FOCUS, $ι$)	ALIGN-R(HEAD, $ι$)	CWO
a. ☞ $_ι${Ha riso **GIANNI**}			*
b. $_ι${**GIANNI** ha riso}	*	*	
c. $_ι${GIANNI ha **riso**}	*		

(Féry 2013: 696)

In contrast with Italian, Hungarian is known to align foci with the left edge of an $ι$, while also making them prosodically prominent via alignment with an NPA (Szendrői 2001, 2003), as in (14a). Note that, as in (5) above, the verb undergoes inversion over the verbal particle – here, *fel*. Deviating from this pattern – including the unmarked, broad focus word order (without the verb–particle inversion), as in (14b) – results in infelicity in this context.

(14) (Did the man kick a table?)
  a. *Nem*, $_ι${*egy SZÉKET rúgott fel a férfi*}   Hungarian
       no, a   chair kicked PRT the man
       'No, the man kicked a CHAIR.' (Féry 2013: 703)

  b. **Nem*, $_ι${*a férfi fel rúgott egy SZÉKET*}
       no,   the man PRT kicked a   chair
       ('No, the man kicked a CHAIR.')

According to the FA approach, Hungarian is a mirror image of Italian, in that both foci and prosodic prominence are subject to left alignment, due to high ranking of ALIGN-L(FOCUS, $ι$) and ALIGN-L(HEAD, $ι$). Both of these constraints, again, outrank CWO; note that Féry (2013) follows (Szendrői 2003: 64) in assuming that the CWO within the VP/PredP in Hungarian is VSO.[8]

---

[8] Note that this approach by itself does not account for the availability of the verb–particle inversion and makes no claims about the mechanism that underlies it.
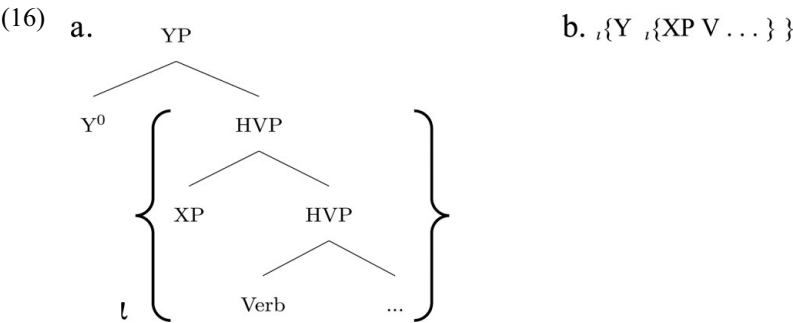
(15)

fel rúgott a férfi egy széket (Focus = *egy széket*)	ALIGN-L(FOCUS, ι)	ALIGN-L(HEAD, ι)	CWO
a. ☞ $_\iota${**EGY SZÉKET** rúgott fel a férfi}			*
b. $_\iota${fel rúgott a férfi **EGY SZÉKET**}	*	*	
c. $_\iota${**fel rúgott** a férfi EGY SZÉKET}	*		
d. $_\iota${a férfi fel rúgott **EGY SZÉKET**}	*	*	*

(Féry 2013: 703)

To sum up, the FA approach derives focus placement and focus prominence from alignment with prosodic boundaries and successfully accounts for focus placement in a variety of languages. That said, the FA model alone cannot account for immediately preverbal focus placement (nor was it intended to). It offers no principled account of syntax–prosody mapping between ι and syntactic constituents (e.g. in Hungarian ι may correspond to PredP or FP) or focus–verb adjacency as such.

2.3. *The syntax–prosody interface: The flexible ι-mapping hypothesis*

ιs are commonly taken to correspond to syntactic 'clauses', but there is no unanimity on the exact syntactic counterpart of ι: e.g. CPs (Truckenbrodt 2005), TPs (Zerbian 2006), and phases (Cheng & Downing 2007) have been proposed to systematically correspond to ιs. In this paper, we adopt the flexible ι-mapping hypothesis (Hamlaoui & Szendrői 2015), which provides a general account of the cross-linguistic variation in the size of the ι containing the core clause. According to it, the size of the ι – the 'core' ι for our purposes – is determined syntactically: ι corresponds to the highest projection that hosts overt verbal material – 'the verb itself, the inflection, an auxiliary, or a question particle' (Hamlaoui & Szendrői 2015: 80) (henceforth: HVP, for highest verbal projection). This is schematized in (16a), where the bracketed part of the tree, corresponding to the HVP, is labelled ι. This means that the size of the core ι of a clause is flexible and does not rigidly correspond to any predetermined syntactic projection.

(16)   a.   b. $_\iota${Y $_\iota${XP V . . . } }

Elements that are syntactically outside the HVP (including material projected above, or adjoined to, the HVP) are mapped to prosodic positions outside the core ι. In main clauses, these elements are included in a more encompassing, MAXIMAL ι (16b), since Hamlaoui & Szendrői (2015) adopt the hypothesis that constituents expressing an entire illocutionary act are also mapped to an ι (Selkirk 2005). This leads to there being a nested ι-structure, with the maximal ι undominated and embedding the core ι (see Selkirk 2011; Ito & Mester 2012, 2013 for similar proposals).

The alignment of the HVP with ι is enforced by the two syntax–prosody mapping constraints in (17); the corresponding prosody–syntax mapping constraints are low-ranked and not listed here.

(17) **Syntax–prosody mapping**
    a. ALIGN-L(HVP, ι)
        Align the left edge of the HVP with the left edge of an ι.
    b. ALIGN-R(HVP, ι)
        Align the right edge of the HVP with the right edge of an ι.

To illustrate, in Hungarian, narrow foci undergo movement to a functional projection FP, accompanied by raising of the verb to the head of the same projection, as discussed in more detail in Section 2.1. This means that when FP is projected, by virtue of the verb raising to F^0, FP corresponds to the HVP, and, as such, it gets mapped to an ι. Hamlaoui & Szendrői (2015) follow the Focus-to-Accent/ Focus-as-Prominence view in assuming the Stress–Focus Correspondence principle, which requires focus to contain the main ι-level prominence (for a classic formulation, see Reinhart 1995). Taking this together with the assumption that in Hungarian the main ι-level prosodic prominence is left-aligned within ι (Szendrői 2003), it is explained why narrow focus is raised to Spec,FP: because in this position it will contain the main prominence of ι. In contrast to narrow focus, left-peripheral topics are structurally higher than the HVP and, accordingly, outside of the core ι. Topic- and focus-placement are schematized in (18a). Similarly, in a broad-focus clause, where the HVP corresponds to PredP, ι is co-extensive with PredP, while the verbal arguments further to the left are outside of it. This is shown in (18b). The assumed intonational phrasing is supported by accentuation patterns in declaratives and in polar interrogatives (Hamlaoui & Szendrői 2015).

(18) a.
            $_\iota\{$ $\}$
        [$_{TopP}$ *Péter*$_s$ [$_{FP}$ *MARI-T*$_o$ *szerette*$_v$ [$_{PredP}$ *meg* [$_{VP}$ t_s t_v t_o]]]]
        Peter   Mary-ACC love.PST   PRT
        'Peter got to like MARY.'

    b.
                   $_\iota\{$ $\}$
        [$_{TopP}$ *A* *postás-t*$_o$ [$_{TopP}$ *a* *kutya*$_s$ [$_{PredP}$ *meg* *harapta*$_v$ [$_{VP}$ t_s t_v t_o]]]
        the postman-ACC   the dog.NOM   PRT bite.PST
        'The dog bit the postman.'

Notably, the specifier of the HVP is part of the ι, but the proposal makes it clear that the specifier of the HVP does not have to be occupied by a focal constituent, since topical constituents are also allowed in the HVP – e.g. in Bàsàá (Bantu). The authors are explicit that 'it is not the topical or focal nature of a peripheral element that primarily determines whether it is phrased inside or outside the core intonational phrase […] rather, phrasing is dependent on the highest overt position of the verb' (Hamlaoui & Szendrői 2015: 83).

3. Raised preverbal foci: Analysis

Our analysis brings together the two approaches outlined in the previous section. Following the flexible ι-mapping hypothesis, we take the size of ι to be determined by the HVP.

Following the FA model, we assume that focused constituents align with prosodic edges – in the sample of languages discussed in this paper, ι-edges.

Before proceeding, we should make it clear that our aim is not to provide an exhaustive analysis of the prosodic structure in the languages surveyed here – which would take us well beyond the scope of the current paper. Instead, our aim is to demonstrate that the distribution of the two types of preverbal foci can be captured by our hybrid approach. As such, we are not making claims e.g. about the distribution of smaller prosodic constituents, such as φ-phrases, which correspond to individual syntactic phrases, since the properties of φ-formation in some clausal regions of the lesser studied languages surveyed here (e.g. the postverbal region in IrO) are neither fully understood yet nor consequential for our proposal.

Accordingly, we make some analytical choices that allow us to capture the relevant facts without referring to the level of φ-phrases (our hope is that once the relevant φ-related facts are fully established for our languages, our analysis can be recast in terms of full prosodic structure that includes both φ- and ι-phrases). With ALIGN-FOCUS constraints, we assume that violations are incurred whenever non-focal material intervenes between the focused constituent and the ι-edge (Féry 2013), with more intervening material – quantified for the present purposes by the number of prosodic words – incurring more violations. With ALIGN-HEAD constraints, violations are incurred whenever another pitch accent separates the NPA from the ι-edge.

Let us start with the raised preverbal foci, as exemplified by Hungarian in Section 2.1. The account we propose borrows from Szendrői (2003) and Hamlaoui & Szendrői (2015), but in contrast to them, we adopt the FA model of the focus–prosody interface instead of the classic Focus-to-Accent view. We propose that the main constraint that governs the distribution of the raised preverbal foci is high-ranked ALIGN-L(FOCUS, ι), which ensures that raised preverbal foci align with a left ι-edge. Syntactically, raised foci move to the specifier of a functional projection FP (commonly labeled FocP), with F^0 targeted by the raised verb. By virtue of attracting the verb, FP becomes the HVP and determines the height of the left ι-edge via ALIGN-L(HVP, ι). In other words, verb movement creates the left ι-edge that the focused constituent then aligns with. If a raised preverbal focus is prosodically prominent (which is language-specific), that is due to the conspiracy of ALIGN-L(FOCUS, ι) and ALIGN-L(HEAD, ι) (Féry 2013). In sum, the three constraints – ALIGN-L(FOCUS, ι), ALIGN-L(HVP, ι), and ALIGN-L (HEAD, ι) – account for the behavior of raised preverbal foci. Three languages that fall into this class are Hungarian, EA, and IrO. Since the maximal ι is irrelevant for focus alignment in these languages, we do not mark it in examples for the sake of simplicity.

Importantly, the raising of the verb and the focus to an FP projection only occurs if a narrow focus is present in the sentence to satisfy these interface alignment constraints. In neutral (broad focus) sentences, neither of these movements takes place, as they would be gratuitous: They would not serve the satisfaction of any alignment constraint at the prosodic interface, neither would they be independently licensed syntax-internally. We can model this by assuming a markedness constraint that penalizes extra functional structure, such as Minimal Projection (Grimshaw 1993) or No Structure (Dekkers 1999) – in Chomsky's (1993) terms, a representational economy constraint:[9]

(19)   NO FUNCTIONAL PROJECTIONS (*FP)
       No functional projections should be created.

---

[9] Due to the intrinsic difficulty of both defining and identifying CWO (e.g. in languages that allow for more than one order in neutral broad focus utterances), we do not adopt the constraint CWO in our analysis. Any syntactic markedness due to the displacement of focus that is relevant to our discussion is addressed by *FP.

In the presence of a narrow focus, this constraint, militating against extra functional projections, needs to be violated in order to satisfy the (more highly ranked) interface alignment constraints. However, if no narrow focus is present, projecting a functional phrase (whether or not any movements take place to its head and specifier) will violate (19) and will therefore be deemed suboptimal. In short, the violation incurred by the extra functional structure captures the markedness of dedicated focus fronting and verb movement.

A syntactic prediction of our analysis is that, due to the Spec–Head configuration involved, no phrasal material should be allowed between the raised focus and the verb.[10] This prediction is borne out in Hungarian (where only clausal negation, a head left-adjoined to the verb, can intervene; Bródy 1990b; É. Kiss 1998), IrO (with some exceptions; Borise & Erschler 2023), and EA (where only prefixed negation and the lexical part of light verbs can intervene; Dum-Tragut 2009: 632–634). In the remainder of this section, we discuss each of these languages.

3.1. Hungarian

Our account of Hungarian is similar to the one in (15) in that it involves the constraints ALIGN-L(FOCUS, ι) and ALIGN-L(HEAD, ι). Crucially, though, it also includes the constraint in (17a), which mandates that the height of the left ι-edge corresponds to the left edge of the HVP. Accordingly, instead of stipulating the correspondence of ι-size to different syntactic projections in different contexts (e.g. FP in narrow focus contexts), essentially following Szendrői's (2003) and Hamlaoui & Szendrői's (2015) insight, we can derive this correspondence in a principled way. Most importantly, preverbal focus placement in Hungarian is derived by virtue of the fact that focus is aligned with the left ι-edge, which, in turn, is determined by the structural height of the verb. The only syntactic position that satisfies this requirement is Spec,FP, which leads to immediately preverbal focus placement. This is shown in (21) for the example (20b); (20a) is provided for context.

(20) a. **Broad focus:**
    [_{PredP} *Fel rúgott a férfi egy széket*].
        PRT kicked the man a chair
    'The man kicked a chair.'

    b. **Object focus:**
    (What did the man kick?)   cf. (14)
    [_{FP} *Egy* SZÉKET *rúgott* [_{PredP} *fel a férfi*]]
       a chair kicked   PRT the man
    'The man kicked A CHAIR.'

Prosodically, the NPA on the leftmost constituent within the ι is represented by a HL* pitch accent (e.g. Szendrői 2003), aligned with the initial syllable of the focused constituent, given that Hungarian has initial lexical stress. While the left edge of the core ι does not have its own marking (beyond the NPA aligned with it), prefocal material, if available, often ends

---

[10] We adopt the classical X-bar theoretic view of phrase structure, not permitting multiple specifiers.

in a high boundary tone (Surányi, Ishihara & Schubö 2012; Genzel, Ishihara & Surányi 2015), which acts as an indirect marker of the upcoming left *ɩ*-boundary.

In our OT account, the Hungarian focus facts are derived via the interplay of ALIGN-L (FOCUS, *ɩ*), ALIGN-L(HEAD, *ɩ*) (where the head of *ɩ* is the NPA), and ALIGN-L(HVP, *ɩ*). The constraints are unranked with respect to each other and not violated by the winning candidate, (21a).[11] *FP is ranked below the other constraints, meaning that the violation incurred by (21a) is not consequential. In (21b, c), the verb has raised to PredP, with its specifier occupied by the PRT. Note that we take violations of ALIGN-L(FOCUS, *ɩ*) and ALIGN-L (HEAD, *ɩ*) to be cumulative: in (21c), removing the narrowly focused constituent *egy széket* 'a chair' from the left *ɩ*-edge by one prosodic word, *fel rúgott* 'kicked', results in one violation of ALIGN-L(FOCUS, *ɩ*), whereas in (21b), removing it from the left *ɩ*-edge by two prosodic words, *fel rúgott* 'kicked' and *a férfi* 'the man', results in two violations of ALIGN-L (FOCUS, *ɩ*). This will be important in the account of in situ preverbal foci.[12]

(21) Deriving object focus (focus = SMALL CAPS, NPA = **boldface**):

fel rúgott a férfi egy széket (Foc = egy széket)	ALIGN-L (FOCUS, *ɩ*)	ALIGN-L (HEAD, *ɩ*)	ALIGN-L (HVP, *ɩ*)	*FP
a. ☞ *ɩ*{**EGY SZÉKET** <u>rúgott</u> fel a férfi}				*
b. *ɩ*{**fel <u>rúgott</u>** a férfi EGY SZÉKET}	**			
c. *ɩ*{**fel <u>rúgott</u>** EGY SZÉKET a férfi}	*			
d. *ɩ*{EGY SZÉKET **<u>rúgott</u>** fel a férfi}		*		*
e. *ɩ*{**a férfi** <u>rúgott</u> fel EGY SZÉKET}	***			*

3.2. Eastern Armenian

EA, an Indo-European language spoken in the Caucasus, is another verb-final language that is described as having immediately preverbal focus (Comrie 1984; Dum-Tragut 2009; Megerdoomian & Ganjavi 2000). In a broad-focus EA clause, if the verbal complex consists of a participle and a copula, the copula follows the participle, as shown in (22); note that definite objects in EA typically surface postverbally (Megerdoomian 2002; Dum-Tragut 2009: 562).

(22) **Broad focus:**
     Ara-n   nkarel   e   Dilidžan-i   vank^h-er-ə.
     Ara-DEF draw.PTCP COP.3SG.PRS Dilijan-GEN monastery-PL-DEF
     'Ara drew the monasteries of Dilijan.' (Hodgson 2013)

In the context of narrow focus, the copula raises past the participle and cliticizes to the narrowly focused constituent, as in (23). This inversion is obligatory and provides initial evidence in favor of EA having a raised preverbal focus configuration.

---

[11] Constraints that are not ranked with regard to each other are evaluated in all their possible rankings (also known as the multiple-rankings approach). For the present purposes, we do not formally distinguish lack of ranking between constraints from constraint ties.

[12] As noted in the Introduction, we adopt the view that the candidates evaluated at the interface in the OT competition are the output of the syntactic module of grammar. Accordingly, we take each candidate set to be defined by the syntactic properties of a given language: The candidates correspond to syntactic structures that are licensed in the narrow syntax in the language at issue.

(23) **Subject focus:**
(Who drew the monasteries of Dilijan?)
*Dilidžan-i   vank^h-er-ə   A*RA*-N   e   nkarel.*
Dilijan-GEN monastery-PL-DEF Ara-DEF COP.3SG.PRS draw.PTCP
'ARA drew the monasteries of Dilijan.' (Hodgson 2013)

A definitive piece of evidence in favor of raised preverbal foci in EA comes from long focus movement. To illustrate, (24a) provides a broad-focus example of a clause with an infinitival complement. As (24b) shows, when the complement of the infinitive – here, *t'atroni bemě* 'theater stage' – is focused, it is raised out of the infinitival clause into the matrix clause and immediately followed by the inverted copula. We analyze this as movement of focus to a specifier of a high FP projection in the matrix clause, accompanied by movement of the copula to the head of the same projection.

(24) a. **Broad focus:**
[CP *Banvornerě   sksel   en*   [CP *k'andel   t'atroni   bemě*]].
worker.PL.DEF begin.PTCP COP.3PL   destroy.INF theater.DAT stage.DEF
'The workers began destroying the theater stage.' (Dum-Tragut 2009: 556)

b. **Object focus:**
(What did the workers begin to destroy?)
[CP *Banvornerě* [FP *T'ATRONI   BEMĚN*j   *en*v   [TP *sksel*   t_v
worker.PL.DEF   theater.DAT stage.DEF.LNK COP.3PL   begin.PTCP
[CP *k'andel*   t_j]]]].
destroy.INF
'The workers began destroying THE THEATER STAGE.' (Serine Avetisyan, personal communication, February 2019)

A note about the status of the copula is in order. Traditionally, examples like (23) and (24b) have been treated as cases of mobile auxiliary cliticization, given the clitic-like behavior of the auxiliary (Tamrazian 1994; Kahnemuyipour & Megerdoomian 2011). Most verbal tenses in EA, including simple present, are analytical and, thus, include the auxiliary. Nonetheless, the correct generalization is that preverbal foci in EA immediately precede finite verbs and do not necessarily involve auxiliaries (Pregla 2024). This can be demonstrated with synthetic tenses like aorist, shown in (25), in which the finite verb behaves in the same way as the auxiliary in (23) and (24b), immediately following the narrow focus. We take this to indicate that both auxiliaries and other finite verbs can occupy the head of the HVP in EA. Accordingly, we propose that in EA, similarly to Hungarian, foci are raised and left-aligned with an *ι*-edge, which corresponds to the HVP (namely, the FP projected to house focus).

(25) **Subject focus (synthetic tense)**
(Who gave the toy the child?)
a. *A*NIN   *tavets*   *xałalik'e rexayin.*
Ani.LNK give.AOR.3SG toy.DEF   child.DAT.DEF
'ANI gave the toy to the child.'

b. #*ANIN*   *xałalik'e* *tavets*   *erexayin.*
   Ani.LNK toy.DEF   give.AOR.3SG child.DAT.DEF
   (intended: 'ANI gave the toy to the child.') (Zhanna Mkrtchyan, personal
   communication, August 2022)

Prosodically, narrow foci in EA carry an NPA of the H*+L shape, anchored to the stressed syllable, which is typically final or, if the final vowel is a schwa, penultimate in a prosodic word (Dum-Tragut 2009: 395, 619; Skopeteas 2021; Seyfarth et al. 2024). According to Chakmakjian, Dolatian & Skopeteas (2024), the left edge of the prosodic constituent that contains the focus and the verb to the exclusion of other – e.g. prefocal – material (i.e. in our terms, the ɩ, though Chakmakjian et al. implicitly take it to be a φ) is marked by a low initial boundary tone -L and characterized by phrasing the narrowly focused constituent together with the verb (which is not the case in broad focus contexts).

The OT account is provided in (26). Because narrow foci in EA are prosodically prominent – i.e. they carry the NPA (Dum-Tragut 2009: 395, 619; Seyfarth et al. 2024) – the constraint ALIGN-L(HEAD, ɩ) is included in the tableau. As in Hungarian, the winning candidate honors the three ALIGN constraints, unranked with each other, and violates the lower-ranked *FP. For the sake of brevity, we only consider candidates with the word order characteristic of preverbal narrow focus; *modulo* the relevant language-specific facts (i.e. inversion of the auxiliary with the lexical verb), the EA facts would pattern like the Hungarian ones in (21).

(26)   Deriving object focus (focus = SMALL CAPS, NPA = **boldface**):

Banvornerĕ sksel en k'andel t'atroni bemĕ (Foc = *t'atroni bemĕ*)	ALIGN-L (FOCUS, ɩ)	ALIGN-L (HEAD, ɩ)	ALIGN-L (HVP, ɩ)	*FP
a. ☞ Banvornerĕ, {**T'ATRONI BEMĔN** en sksel k'andel}				*
b. ɩ{**Banvornerĕ** T'ATRONI BEMĔN en sksel k'andel}	*		*	*
c. ɩ{Banvornerĕ **T'ATRONI BEMĔN** en sksel k'andel}	*	*	*	*

3.3. Iron Ossetic

Similarly to Hungarian and EA, IrO, a verb-final Iranian language spoken in the Caucasus, is described as placing foci immediately preverbally (Abaev 1939; Erschler 2008, 2012).[13] This is shown in (27b), with the broad focus counterpart provided in (27a) for comparison.

(27)   a. **Broad focus:**
      Abon Mædinæ Alan-əl   ɐwwænd-ə.
      today Madina Alan-SUP believe-PRS.3SG
      'Madina believes Alan today.'

   b. **Subject focus:**
      ('Who believes Alan today?')
      Alan-əl   MʏDINʏ ɐwwænd-ə   abon.
      Alan-SUP Madina believe-PRS.3SG today
      'MADINA believes Alan today.'

---

[13] IrO also allows for postverbal focus placement (Borise & Erschler 2023), in a manner similar to Georgian, described in Section 4.2. As the properties of postverbal focus placement in IrO are not fully understood yet, we leave them for future research.

The evidence for the raised status of IrO preverbal foci comes not from the inversion of the finite verb with a particle or participle, like in Hungarian or EA, but from the interaction of narrow foci, wh-phrases, and negative indefinites. In IrO, each of these constituent types, if not co-occurring with others, must surface immediately preverbally. When co-occurring, though, the strict *focus >> wh >> neg >> V* order is obtained, regardless of e.g. thematic roles, as shown in (28).[14] This suggests that the elements in the preverbal cluster take up their surface positions via movement. Accordingly, we propose that immediately preverbal foci in IrO (even when not co-occurring with *wh*-phrases of negative indefinites) undergo movement to the specifier of a dedicated projection, accompanied by raising of the verb. Except for wh-phrases and negative indefinites, (practically) no other elements can intervene between the narrowly focused constituent and the verb.[15]

(28)   [CP *nɐ=χɐzar-ə*   [FP *ɐrmɐʃt alan-əl* [WP *tʃi*   [NegP *nikʷə*
        our=house-LOC   only   A.-SUP   who   never
        [Neg' *ɐwwɐnd-ə*]]]]]?
        believe-PRS.3SG
        'In our family, who never believes only Alan?'

On the prosody side, IrO preverbal foci are left-aligned with an ι-edge and carry an NPA H*, aligned with the initial or second syllable of the leftmost prosodic word of the focused constituent, depending on vowel quality. The left ι-edge itself is unmarked, but the topicalized constituent(s) that precede it, if any, carry a characteristic L+H* contour (Borise & Erschler 2022, 2023). The OT account of preverbal focus placement in IrO is provided in (30), deriving the example of preverbal subject focus in (29), repeated from (27b) for convenience.

(29)   **Subject focus:**
       ('Who believes Alan today?')
       Alan-əl   Mɐdinɐ   ɐwwɐnd-ə   abon.
       Alan-SUP   Madina   believe-PRS.3SG   today
       'MADINA believes Alan today.'

(30)   Deriving subject focus (focus = SMALL CAPS, NPA = **boldface**):

abon Mɐdinɐ Alanəl ɐwwɐndə (Foc = Mɐdinɐ)	ALIGN-L (FOCUS, ι)	ALIGN-L (HEAD, ι)	ALIGN-L (HVP, ι)	*FP
a. ☞ *Alanəl ι{MɐDINɐ ɐwwɐndə abon}*				*
b. *ι{Alanəl MɐDINɐ ɐwwɐndə abon}*	*		*	*
c. *ι{Alanəl MɐDINɐ ɐwwɐndə abon}*	*	*	*	*

To recap, for languages like Hungarian, EA, and IrO, it can be shown that immediately preverbal foci are raised and accompanied by verb movement, which yields focus–verb

---

[14] In these more complex IrO constructions, language-specific evidence (the distribution and type of pitch accents) suggests that a narrow focus is still aligned with the left ι-edge, though the ι in question is not determined by the HVP, in violation of ALIGN-L(HVP, ι). See examples (42) and (49) in Borise & Erschler (2023) for details.

[15] Additionally to wh-phrases and negative indefinites, narrow foci can be separated from the verb by adverbs in the superlative grade and the adverb *aftɐ* 'so, in this way' (Erschler 2012); we leave the analysis of these structures for future research.

adjacency. We propose, building on Szendrői ([2003](#)), Féry ([2013](#)), and Hamlaoui & Szendrői ([2015](#)), that the movements in all these languages are motivated by the need for the focused constituent to left-align with the ι-edge, which is created by verb movement. Preverbal placement of raised foci, therefore, is the by-product of the need for adjacency with the ι-edge, which itself is derived with reference to the position of the verb.[16]

4. In situ preverbal foci: Analysis

The other type of preverbal foci is the one exemplified in Section 2.1 by Georgian. In languages of this type, neither the focused constituent nor the verb undergoes dedicated (focus-related) movement – instead, focus–verb adjacency is achieved by the intervening material moving from in between the focus and the verb to the left or to the right.

We propose that in situ preverbal foci are aligned with the right ι-edge due to ALIGN-R (FOCUS, ι).[17] As was the case for raised preverbal foci, the HVP determines ι-size, but now it is the right ι-edge that plays the key role in focus placement, via high-ranked ALIGN-R(HVP, ι). To bring focus as close as possible to satisfying ALIGN-R(FOCUS, ι), the material intervening between the focus and the verb is displaced (e.g. topicalized). However, the clause-final syntactic position of the verb means that the focused constituent still necessarily violates ALIGN-R(FOCUS, ι), being separated from the ι-edge by the verb – nevertheless, this proves to be the 'lesser evil' option, with all other candidates faring even worse.[18] In previous work, Büring ([2010](#)) briefly refers to this language type as 'relaxed-edge' languages, suggesting that focus gains prominence by getting almost aligned with a right prosodic edge. As we show below, though, there are a number of language-specific reasons due to which fully edge-adjacent focus may not be available, and in situ preverbal focus is found instead. With respect to prosodic prominence, ALIGN-R(HEAD, ι) ensures that focus, aligned (even if not perfectly) with the ι-edge, carries the NPA (if there is one in a given language). The ι-final verb is rendered unsuitable for stress placement by a high-ranked constraint *X-STRESS, discussed below, which ensures that phrases but not heads carry stress (Duanmu [2000](#); cf. also Truckenbrodt [2007](#)).

The languages of this type in our sample include Turkish and some other Turkic languages (e.g. Uyghur) and Georgian (Kartvelian). They are discussed in detail below.

---

[16] Hamlaoui & Szendrői's ([2015](#)) approach predicts that, in this context, rightward movement of the verb could also license a (leftward) specifier for focus fronting to target, in a language in which focus is aligned with the left ι-edge. We do not know whether such a language exists. Szendrői ([2017](#): 15), who briefly mentions this typological prediction (albeit formulated in terms of prominence alignment), suggests that if this gap is real, it may be accidental, simply being due to 'the relatively low number of languages that have verb movement to a high right-peripheral position.'

[17] Building on Hamlaoui & Szendrői ([2015](#)), Szendrői ([2017](#)) offers a tentative typology of the positions of the verb and focus in a clause, in which she raises the possibility that Turkish and/or Japanese preverbal focus could arise from right-alignment of the NPA – as a counterpart of focus fronting, which involves a left-aligned NPA. Our analysis transposes this idea into FA (focus as alignment) terms and shows it to be the case in several verb-final languages.

[18] ALIGN-L/R(FOCUS, ι) is systematically violated in other cases as well: e.g. When focus cannot be sub-extracted from a bigger constituent, it may inevitably be separated from the ι-edge by the nonfocal part of that bigger constituent.

4.1. Turkish

Along with Hungarian, Turkish is one of the most well-described languages with immediately preverbal focus placement (Erkü 1983; Erguvanlı 1984; Göksel & Özsoy 2000; İşsever 2003; Öztürk 2004; Şener 2010; Kamali 2011). Neutral broad-focus clauses in Turkish are verb-final, as in (31), while narrow foci are strongly preferred to be placed immediately preverbally, as in (31b).[19]

(31)   a. **Broad focus:**
        Eşim   dün   pazarda   ineğimizi   <u>sattı</u>.
        partner.1SG yesterday market.LOC cow.1PL.ACC sell.PST
        'My partner sold our cow at the market yesterday.'

   b. **Subject focus:**
        ('Who sold your cow at the market yesterday?')
        Dün   pazarda   ineğimizi   EŞIM   <u>sattı</u>.
        yesterday market.LOC cow.1PL.ACC partner.1SG sell.PST
        'MY PARTNER sold our cow at the market yesterday.'

In the context of narrow focus, the placement of prefocal – as well as postverbal – elements is determined by strict IS-requirements. Only contrastive and aboutness topics can precede preverbal foci, though, notably, the order of prefocal elements is flexible: cf. (31b) and (32):

(32) **Subject focus:**
        ('Who sold your cow at the market yesterday?')
        Dün   ineğimizi   pazarda   EŞIM   <u>sattı</u>.
        yesterday cow.1PL.ACC market.LOC partner.1SG sell.PST
        'MY PARTNER sold our cow at the market yesterday.'

When the preverbal element is focused, Turkish allows for constituents that represent given, backgrounded information to follow the verb. Their relative order is also flexible, as in (33). In the literature on Turkish, these facts – the IS-requirements on prefocal and postverbal material and the flexible relative order of constituents within the prefocal and postverbal field – have been taken to mean that the non-focal material undergoes movement to the peripheries of the clause; this leads to the adjacency between the focus and the verb, which are not subject to focus-related movement. There is agreement in the literature that Turkish does not have a dedicated focus projection (Butt & King 1996; Göksel & Özsoy 2000; Şener 2010; a.o.).

---

[19] In addition to immediately preverbal foci, Turkish allows for foci to be placed further to the left from the verb, separated from it by other material. We do not consider these non-immediately preverbal foci here, because they are reported to either receive a contrastive interpretation (Kural 1997; Kornfilt 1997; İşsever 2003) or carry extra pragmatic emphasis (Kiliçaslan 2004) (though see Gürer 2020; Kamali & Krifka 2020; Atasoy 2022, for the opposing view that non-immediately preverbal foci in Turkish can be interepreted as new information foci). Prosodically, they are separated from the following clausal material and carry a low boundary tone LL% (Özge 2003; see also Kamali 2014). We conjecture that, for the purposes of contrast/emphasis, an extra, non–HVP-related ι-boundary may be inserted in these cases; we leave them for further research.

(33) **Subject focus:**
('Who sold your cow at the market yesterday?')

a. *Dün   EŞIM   <u>sattı</u>   pazarda   ineğimizi.*
yesterday partner.1SG sell.PST market.LOC cow.1PL.ACC
'MY PARTNER sold our cow at the market yesterday.'

b. *Dün   EŞIM   <u>sattı</u>   ineğimizi   pazarda.*
yesterday partner.1SG sell.PST cow.1PL.ACC market.LOC
'MY PARTNER sold our cow at the market yesterday.'

In terms of general clausal architecture in Turkish, it has been argued that verbs raise to Asp^0/T^0, on the right of the clausal spine (Aygen 2004; Yarbay et al. 2008). Non-quantificational subjects raise to Spec,AspP, while Spec,TP is reserved for quantificational elements, which may or may not be subjects (Öztürk 2004, 2005). It has also been suggested that (non-clausal) postverbal constituents in Turkish result from movement to the right and land (and take scope) very high in clausal structure (Kural 1997; Kornfilt 2005; Şener 2005; a.o.). If so, postverbal constituents are outside of the HVP, which corresponds to AspP/TP.

On the prosody side, based on the flexible *ι*-mapping hypothesis, this means that postverbal constituents are predicted to be outside of the core *ι*. That is, the core *ι* encompasses all clausal material other than the postverbal constituents (it also excludes left-peripheral topics, though this is less relevant for the present purposes). This correspondence between basic clausal syntax and prosody in Turkish is schematized in (34a) and illustrated in (34b):

(34) a. $_{ι\text{-}max}${ $_{ι\text{-}core}${   }   }
         [CP   [AspP/TP ...   ] postverbal element(s)]

b. $_{ι\text{-}max}${ $_{ι\text{-}core}${   }   }
         [CP   [AspP/TP *Dün   EŞIM   <u>sattı</u>*] *pazarda ineğimizi*]
                        yesterday partner.1SG sell.PST   market.at cow.1PL.ACC
         'MY PARTNER sold our cow at the market yesterday.'

Postverbal constituents in Turkish are strictly deaccented (Özge & Bozsahin 2010); even pitch accents on lexically accented words are removed (Güliz Güneş, personal communication, August 2023). There is strong evidence for an NPA, which targets the immediately preverbal position and is expressed as a H* pitch accent; the right edge of the core *ι*, aligned with the right edge of the verb, carries a low boundary tone LL% (even in the presence of postverbal material) (Özge 2003).

We propose that in Turkish preverbal foci align with the right *ι*-edge.[20] Our OT analysis, therefore, relies on the right-edge versions of the three key ALIGN constraints employed in Section 3: ALIGN-R(FOCUS, *ι*), ALIGN-R(HEAD, *ι*), and ALIGN-R(HVP, *ι*). Now that we are dealing with nested *ι*s and several right *ι*-edge targets of alignment, as in (34), we need to fine-tune our analysis. To do so, we adopt the constraint FOC$_{ι\text{-}core}$ (Borise 2023), which is based on the insight in Szendrői (2003):[21]

---

[20] Our approach is similar in spirit to Gürer's (2020), who proposes that Turkish foci are contained within the rightmost phonological phrase (*φ*) in the *ι*.

[21] FOC$_{ι\text{-}core}$, in fact, has two functions: In addition to ensuring that the narrowly focused constituent appears within the core *ι*, it also bans displacement of clausal material out of the HVP in all-new sentences because that would put the displaced elements, which are part of (broad) focus, outside of the core *ι*.

(35) Foc$_{\iota\text{-}core}$
　　 A focused constituent must be contained within the core ι.

To model NPA placement, we employ a markedness constraint *X^0-Stress, (36), inspired by Duanmu's (2000: 146) descriptive rule *Nonhead Stress*. It captures the empirical generalisation that, in a configuration [$_{XP}$ YP X^0], the option for the syntactic head X^0 to carry a (nuclear) pitch accent is marked, both typologically and language-internally – compared to the phrase YP doing so. Without (36), a right-aligning verb-final language would assign NPA to the verb.[22]

(36) *X^0-STRESS
　　 In a configuration [$_{XP}$ YP X^0], where YP is an argument of X^0, and XP is an extended projection of a syntactic head X^0, do not assign an accent to X^0.

Our OT analysis is provided in (37). As before, the three ALIGN constraints (this time targeting the right ι-edge) are unranked with respect to each other. Additionally, they are also outranked by *X^0- STRESS (*FP is left out here and below, as the relevant candidates do not differ in terms of the functional projections they contain). The winning candidate, (37a), incurs a violation of ALIGN-R(FOCUS, ι) but still fares better than its competitors. Candidates (37b) and (37d) lose because the violations of ALIGN-R(FOCUS, ι) and ALIGN-R(HEAD, ι) get worse with each prosodic word that separates the focus from the right ι-edge and with each pitch accent that separates the NPA from the right ι-edge. Candidate (37c) – or any other candidate with an accented verb – is suboptimal because it violates *X^0- STRESS, even though it aligns the NPA perfectly with the right ι-edge.

(37) Deriving focus on *eşim* (focus = SMALL CAPS, NPA = **boldface**):

Dün eşim satın aldı pazardan ineğimi. (Foc = eşim)		*X^0-STRESS	FOC$_{\iota\text{-}core}$	ALIGN-R (FOCUS, ι)	ALIGN-R (HEAD, ι)	ALIGN-R (HVP, ι)
a. ☞	$_{\iota\text{-}max}${$_{\iota\text{-}core}${*dün EŞIM satt*$_{\underline{\text{ı}}}$} *ineğimizi pazarda*}			*		
b.	$_{\iota\text{-}max}${$_{\iota\text{-}core}${**EŞIM** *dün satt*$_{\underline{\text{ı}}}$} *ineğimizi pazarda*}			**	*	
c.	$_{\iota\text{-}max}${$_{\iota\text{-}core}${*dün EŞIM* **satt**$_{\underline{\text{ı}}}$} *ineğimizi pazarda*}	*		*		
d.	$_{\iota\text{-}max}${$_{\iota\text{-}core}${*EŞIM* **dün** *satt*$_{\underline{\text{ı}}}$} *ineğimizi pazarda*}			**		
e.	$_{\iota\text{-}max}${$_{\iota\text{-}core}${*dün satt*$_{\underline{\text{ı}}}$} *ineğimizi pazarda* **EŞIM**}		*			

Our approach to Turkish can be extended to some other Turkic languages, though additional strategies would be needed to account for other language-specific focusing strategies – e.g. left-peripheral information focus in Uyghur (Çetinkaya 2023).

4.2. Georgian

Georgian (Kartvelian) differs from the languages discussed here so far in that, even though the OV word order is understood to be the underlying one, neutral broad-focus declaratives

---

[22] *X^0-STRESS is to be thought of as a shorthand, standing for a class of constraints that bring about the markedness of stressed syntactic heads. We leave the exact set of constraints that comprise *X0-Stress open, since nothing in the current argument hinges on this choice. Possible constraint sets that derive the same effect are provided by Truckenbrodt (2006) and Selkirk (2011).

can have an OV (object-verb) or VO (verb-object) word order (Aronson 1990; Harris 1993; Nash 1995; Boeder 2005; Skopeteas, Féry & Asatiani 2009; Skopeteas & Fanselow 2010; a. o.), as in (40).

(40)   **Broad focus:**

    a.   *Šaršan   Giorgi   saxl-s   a-šen-eb-d-a.*   OV
       last_year Giorgi.NOM house-DAT VER-build-SF-SM-IPFV.3SG
       'Last year, Giorgi was building a house.'

    b.   *Šaršan   Giorgi   a-šen-eb-d-a   saxl-s.*   VO
       last_year Giorgi.NOM VER-build-SF-SM-IPFV.3SG house-DAT
       'Last year, Giorgi was building a house.'

Like other languages discussed here, Georgian has a requirement for preverbal placement of narrow foci, as shown in (41):

(41)   **Subject focus:**
    ('Who was building a house last year?')
    Šaršan   saxl-s   GIORGI   a-šen-eb-d-a.
    last_year house-DAT Giorgi.NOM VER-build-SF-SM-IPFV.3SG
    'Last year, GIORGI was building a house.'

In the context of preverbal narrow focus, like in Turkish, given material can also appear postverbally:

(42)   **Subject focus:**
    ('Who grew poor last year?')
    MARIAM-I   ga-gharib-d-a   šaršan.
    Mariam-NOM PRV-grow_poor-SM-AOR.3SG last_year
    'MARIAM grew poor last year.'

Georgian preverbal foci are similar to those in Turkish, in that they do not undergo any focus-specific movement, and the adjacency with the verb results from the intervening material moving out from between the focus and the verb into the left and right peripheries of the clause. This is based on several pieces of evidence, such as lack of island effects, lack of weak cross-over effects, and interaction with adverbs, all of which suggest that Georgian preverbal foci are found in situ; see Borise (2023, 2019) for details. Another, Georgian-specific test for the in situ status of preverbal foci comes from the interaction between preverbal foci and negative indefinites (neg-words). Several pieces of evidence combine to show this. First, it is independently known that there is no movement for case in Georgian – i.e. case is assigned to nominals in situ (Legate 2008; Nash 2017). Second, neg-words in Georgian have been shown to resist movement into the left or right peripheries of the clause (Borise 2019, 2023). Combined, these two facts suggest that neg-word subjects in Georgian are necessarily found in situ. As (43) shows, though, a narrowly focused object can only be found to the right of an in situ neg-word subject – i.e. quite low in the clausal structure. Since it would be unmotivated to postulate a discourse projection within the thematic domain of the clause, evidence of this sort also points to the in situ status of Georgian preverbal foci.

(43) **Object focus:**
(What did no-one buy today?)
Dghes [$_{vP}$ *ara-vin* [$_{VP}$ *P'AMIDOR-I* *(ar)* *i-q'id-a*]]
today   NEG-who   tomato-NOM NEG VER-buy-AOR.3SG
'No-one bought TOMATOES today.'

Georgian differs from Turkish in several important ways, though. As already mentioned, both OV and VO are unmarked in broad focus. Following previous work by Skopeteas & Fanselow (2010), we take broad-focus, neutral VO to be derived via short movement of the verb over the object. This is in line with the approach in which neutral word orders can be derived via semantically vacuous movement of a syntactic head or a phrase that contains the head (Cinque 2005; Abels & Neeleman 2012), as opposed to e.g. phrasal movement to the right (cf. Abels 2016; Neeleman 2017; Pregla 2024).

Georgian also has more than one option for narrow focus placement: In addition to immediately preverbal focus, it allows for posverbal foci. This is the case for both arguments and adjuncts. To illustrate, the main possibilities for object and subject focus placement are provided in (44) and (45), respectively. Note that, if the focus is postverbal, there is a preference for it to be the only postverbal constituent; if there are other postverbal constituents in the same clause (not all speakers allow for this), there is a preference for focus to be the right-most one.

(44) **Object focus:**
('What did grandma clean yesterday?')
a. *Guʃin*   *bebia*   *SAMZAREULO-S* *a-lag-eb-d-a*.   SO$_F$V
   yesterday grandma.NOM kitchen-DAT VER-clean-SF-SM-IPFV.3SG
   'Grandma cleaned THE KITCHEN yesterday.'

b. *Guʃin*   *SAMZAREULO-S* *a-lag-eb-d-a*   *bebia*.   O$_F$VS
   yesterday kitchen-DAT VER-clean-SF-SM-IPFV.3SG grandma.NOM
   'Grandma cleaned THE KITCHEN yesterday.'

c. *Guʃin*   *bebia*   *a-lag-eb-d-a*   *SAMZAREULO-S*. SVO$_F$
   yesterday grandma.NOM VER-clean-SF-SM-IPFV.3SG kitchen-DAT
   'Grandma cleaned the kitchen yesterday.'

(45) **Subject focus:**
('Who cleaned the kitchen yesterday?')
a. *Guʃin*   *samzareulo-s* *BEBIA*   *a-lag-eb-d-a*.   OS$_F$V
   yesterday kitchen-DAT grandma.NOM VER-clean-SF-SM-IPFV.3SG
   'GRANDMA cleaned the kitchen yesterday.'

b. *Guʃin*   *BEBIA*   *a-lag-eb-d-a*   *samzareulo-s*. S$_F$VO
   yesterday grandma.NOM VER-clean-SF-SM-IPFV.3SG kitchen-DAT
   'GRANDMA cleaned the kitchen yesterday.'

c. *Guʃin*   *samzareulo-s* *a-lag-eb-d-a*   *BEBIA*.   OVS$_F$
   yesterday kitchen-DAT VER-clean-SF-SM-IPFV.3SG grandma.NOM
   'GRANDMA cleaned the kitchen yesterday.'

Syntactically, postverbal foci have been shown to be derived via right-adjunction (Borise 2019, 2023).[23] In contrast with elements moved to the right in Turkish, though, Georgian postverbal foci tend to take narrow scope with respect to left-peripheral material and TP-level adverbs, which suggests that they are not necessarily found very high in the clausal structure. Most importantly for our purposes, though, by virtue of being adjuncts, postverbal foci in Georgian are outside of the HVP, and, accordingly, outside of the core ι. This is schematized in (46). Note that in Georgian, unlike in Turkish, 'postverbal elements' in (46) can be represented either by given material, as was shown in (42), or narrow focus, as in (44c) or (45c).

(46)   a. $_{\iota\text{-}max}\{$ $_{\iota\text{-}core}\{$ $\}$ $\}$
            $[_{CP}$ $[_{AspP/TP}$ …]   postverbal element(s)]

Note also that we label the XP that corresponds to the core ι (i.e. the HVP) as 'AspP/TP' in (46). For several reasons, this choice is not obvious, but we believe that it is on the right track. It is not obvious because, as already mentioned, subjects do not raise to Spec,TP, and instead stay low in their base positions and are assigned case there (nominative, ergative, or dative; see Legate 2008; Nash 2017). There is also contradictory evidence with respect to the height of the material that is topicalized/dislocated into the left periphery in Georgian (CP or below), which leaves the occupancy of Spec,AspP/TP unclear.

With respect to the position of the verb, we adopt the view that the verb in Georgian clause stays low, possibly as low as V^0, and that the direction of the clausal spine switches from head-final to head-initial quite low – possibly at vP (Borise 2019), which allows for short V^0-to-v^0 movement to derive neutral VO clauses, as discussed with respect to (40b). This, however, means that the right and left edges of HVP – and, accordingly, ι – are derived quite differently in Turkish and Georgian.

In Turkish, with the clause being head-final and the verb raising to Asp^0/T^0, the right edge of the HVP/ι corresponds to the raised position of the verb, while the left edge is determined by the left-hand specifier of the HVP; the HVP extends from Spec,HVP on the left to the head of the HVP on the right. This is schematized in (47a). In contrast, in Georgian, the right edge of the HVP/ι corresponds to the low position of the verb. Because the clause becomes head-initial at vP, the height of the left HVP-edge, however, is not immediately clear.

The fact that the verb stays low would speak in favor of a very small HVP – as small as VP. On the other hand, Georgian has famously well-developed aspectual and agreement verbal morphology, which must be generated in the higher functional heads (cf. Lomashvili 2011). To reconcile that with the low position of the verb, we assume that verbal morphology is combined with the verbal root via post-syntactic lowering (cf. Georgieva, Salzmann & Weisser 2021). However, we take the fact that e.g. aspectual/tense morphology is generated in Asp^0/T^0 to mean that the left edge of the HVP in Georgian corresponds to AspP/TP, given that the verbal morphology acts as the head of the highest projection that hosts overt verbal material (which is defined by Hamlaoui & Szendrői (2015: 80) as 'the verb itself, the

---

[23] Due to the necessarily non-neutral status of clauses with (postverbal) narrow focus, we do not take e.g. SVO$_F$ to result from short movement of the verb, unlike neutral SVO. Furthermore, deriving non-object postverbal foci – e.g. OVS$_F$ – via verb movement would be problematic, as there is evidence that the preverbal object can be in situ in such cases. Therefore, for the sake of derivational uniformity of postverbal foci, we also adopt the right-adjunction analysis here.

inflection, an auxiliary, or a question particle'; see Section 2.3 above). Accordingly, the prediction is that the HVP should not be smaller than AspP/TP. We assume, therefore, that the core ι in Georgian corresponds to the HVP as schematized in (47b).

(47)   a. **Turkish**   b.   **Georgian**

$_{\iota\text{-core}}\{$ $\}$ $_{\iota\text{-core}}\{$ $\}$

       $[_{\text{TP/AspP}}$ Subject $[_{vP} [_{VP} \ ] \ ]$ Verb $]$ $[_{\text{TP/AspP}} T^0/Asp^0 [_{vP} [_{VP}$ Verb $]]]$

We propose that Georgian foci are similar to Turkish in that they align with the right ι-edge.[24] Georgian prosody, though, is markedly different from Turkish, since there is no evidence for a phonologically meaningful NPA (Dzdiziguri 1954; Alkhazishvili 1959; Zhghenti 1963, 1965b) – instead, the prosodic structure in Georgian consists of Accentual Phrases (APs) that, in broad focus contexts, are usually co-extensive with prosodic words, with each AP carrying a pitch accent and a boundary tone (Vicenik & Jun 2014).[25] In preverbal focus contexts, a narrowly focused constituent is phrased together with the verb into a single prosodic constituent, an Intermediate phrase, characterised by a high pitch accent H* on the narrowly focused constituent, a H+L phrase accent on the verb and a low final boundary tone, which co-occurs with and is overridden by L%, the low ι-final boundary tone (Vicenik & Jun 2014). Postverbal focus contexts are characterized by a high final boundary tone H% on the core ι, a low pitch accent L* on the narrowly focused constituent, and a L% at the end of the maximal ι (Skopeteas et al. 2009; Skopeteas & Féry 2010). In OT terms, the absence of NPA means that *X^0-Stress and Align-R(head, ι) are irrelevant to Georgian; for the sake of simplicity, we omit them in the tableaux.

The possibility of both preverbal and postverbal narrow foci, we argue, stems from the constraint Foc$_{\iota\text{-core}}$ being unranked with respect to the remaining Align constraints, Align-R (focus, ι) and Align-R(HVP, ι) – instead of being ranked above them, like in Turkish. This approach allows us to derive both the preverbal and postverbal focus configurations, as illustrated e.g. in (44) and (45) for object and subject foci. This is shown in the tableaux (48) and (49), respectively.

(48)   Deriving object focus (focus = SMALL CAPS):

gufin bebia samzareulos alagebda (Foc = *samzareulos*)	FOC$_{\iota\text{-core}}$	ALIGN-R (FOCUS, ι)	ALIGN-R (HVP, ι)
a. ☞ $_{\iota\text{-max}}\{Gufin \ _{\iota\text{-core}}\{bebia\ \text{SAMZAREULOS}\ \underline{alagebda}\}\}$		*	
b. ☞ $_{\iota\text{-max}}\{Gufin \ _{\iota\text{-core}}\{bebia\ \underline{alagebda}\}\ \text{SAMZAREULOS}\}$	*		
c. ☞ $_{\iota\text{-max}}\{Gufin \ _{\iota\text{-core}}\{\text{SAMZAREULOS}\ \underline{alagebda}\}\ bebia\}$		*	
d. $_{\iota\text{-max}}\{Gufin \ _{\iota\text{-core}}\{\text{SAMZAREULOS}\ bebia\ \underline{alagebda}\}\}$		*!*	

---

[24] The analysis of Georgian focus offered in Féry (2013) postulates a constraint VerbAdjacency (Focus is adjacent to the verb). We do not adopt this analysis here, because a central aim of this paper is to account for the adjacency in question.

[25] We opt for using the label APs rather than φs for Georgian to reflect the fact that APs are more consistently co-extensive with prosodic words than φs, which typically correspond to syntactic phrases (June 1993). Formation of larger, φ-size prosodic constituents – e.g. noun+adjective combinations – is optional (Vicenik & Jun 2014) and does not constitute the basic level of prosodic constituency in Georgian.

(49)　Deriving subject focus (focus = SMALL CAPS):

gufin bebia samzareulos alagebda (Foc = *bebia*)	FOC$_{\iota\text{-}core}$	ALIGN-R (FOCUS, ι)	ALIGN-R (HVP, ι)
a. ☞ $_{\iota\text{-}max}${*Gufin* $_{\iota\text{-}core}${*samzareulos* BEBIA *alagebda*} }		*	
b. ☞ $_{\iota\text{-}max}${*Gufin* $_{\iota\text{-}core}${*samzareulos alagebda*} BEBIA}	*		
c. ☞ $_{\iota\text{-}max}${*Gufin* $_{\iota\text{-}core}${BEBIA *alagebda*} *samzareulos*}		*	
d. 　$_{\iota\text{-}max}${*Gufin* $_{\iota\text{-}core}${BEBIA *samzareulos alagebda*}}		*!*	

Before wrapping up, we would like to point out an interesting prediction that our account makes. Because focus–verb adjacency in the case of in situ preverbal foci is achieved via displacement of intervening material, we predict that the elements that cannot move out (e.g. for independent syntactic reasons) would remain as interveners. We have some evidence that this is indeed the case. Recall that, in Georgian, negative indefinites are always found in situ. The prediction is that a preverbal subject focus will necessarily be separated from the verb by the negative indefinite object. This is indeed the case, as shown in (50a) (though subject to some interspeaker variation: Some speakers only allow the $O_{neg}VS_F$ alternative, with postverbal subject focus, which does not run into this problem). For comparison, an example with the reversed theta-roles, in which neither argument is in situ, as in (50b), is starkly ungrammatical.

(50)　(Who bought nothing?')
　　　a.　%*MANANA-M　ara-per-i　　　ar　i-q'id-a.*
　　　　　Manana-ERG　NEG-thing-NOM　NEG　VER-buy-AOR.3SG
　　　　　'MANANA bought nothing.'

　　　b.　(What did no-one buy?)
　　　　　*GHVINO　ara-vin　ar　i-q'id-a.
　　　　　wine.NOM　NEG-who　NEG　VER-buy-AOR.3SG
　　　　　('No-one bought WINE.')

To recap, we have shown that languages with in situ preverbal foci, like Turkish and Georgian, can be successfully modelled as languages in which foci are aligned with the right ι-edge. Here, the right-alignment is necessarily imperfect, in that the verb separates the narrowly focused constituent from the right ι-edge; still, other candidates fare even worse. Importantly for the overall topic of this paper, the obligatory adjacency of in situ preverbal foci and the verb proves to be circumstantial – i.e. there is nothing about the preverbal positioning *per se* that is beneficial for focus placement. The same can be said about the obligatory adjacency of raised preverbal foci and verbs – here, too, the adjacency results from independent syntactic and prosodic properties (i.e. verb raising determining the left ι-edge and the focus aligning with it).

5. An argument for focus alignment of in situ focus: The case of Urakhi Dargwa

Bringing together the patterns discussed in the previous sections, we can conclude that preverbal foci result from a combination of two factors: the directionality of the alignment of

the focus in prosody and the position of the verb in syntax. Fronted preverbal foci are found in cases where the verb undergoes raising, enlarging the HVP. As the left boundary of the HVP corresponds to left edge of ι, and as the focus has a requirement to align with the left ι-edge, the preverbal position of the focus is derived. In this scenario, verb raising interacts with focus placement indirectly through the effect it has on the location of ι-edges.

In the case of in situ preverbal foci, by contrast, the immediately preverbal position of the focus is coincidental. Here, the focus is required to be right aligned at the level of prosody, but it cannot be absolutely final in the ι that contains it because the verb happens to follow it for independent syntactic reasons: The verb is typically in situ (or it raises to an inflectional head on the right). As the verb is, by definition, part of the HVP, it necessarily falls within ι, following the otherwise right-aligned focus before the right ι-edge. This gives rise to a violation of the right-alignment requirement imposed on focus, but, because the position of the verb is normally regulated by independent syntactic factors (such as the directionality of the headedness of phrases and the absence or presence of morphosyntactic triggers for verb raising), this violation is inevitable and is, therefore, tolerated in the OT competition.

Hypothetically, if in a language of this latter type the height of the position of the verb happened to allow some flexibility (in terms of raising on the left side of the clausal spine), then, this would open the door to an indirect interaction between focusing and the raising of the verb in the case of in situ focus as well. Data from Urakhi Dargwa, henceforth UD (Nakh-Dagestanian), suggest that this language presents a case in point. UD is a typical verb-final language: Neutral broad-focus declaratives are verb-final, as in (51), while narrow focus is immediately preverbal, as in (52). Given that narrow focus contexts like (52) are strictly verb-final, i.e. no material can follow the verb in (52) – we take UD preverbal foci to be of the in situ, right-aligned type.

(51) *Xunuyin   muruys   dag   sawɣat   bitxib.*
      woman.ERG man.DAT yesterday present.ABS gave
      'Yesterday a/the woman gave a/the man a/the present.' (Dzhuma Abakarova, personal communication, February 2017)

(52) **Subject focus:**
      (Who gave the present to the man?)
      Muruys   dag   sawɣat   XUNUYIN   bitxib.
      man.DAT yesterday present.ABS woman.ERG gave
      'Yesterday a/the WOMAN gave a/the man a/the present.' (Dzhuma Abakarova, personal communication, February 2017)

The in situ character of UD preverbal foci is further supported by the fact that no inversion can take place within the verb cluster in the context of narrow preverbal focus, as shown in (53) – in contrast e.g. with the EA facts discussed in Section 3.2, where auxiliary-participle inversion is obligatory.

(53) **Object focus:**
      (What does the woman want to give to the man?)
      Xunuys   muruys   SAW AT   bitxis   biguli   sabi.
      woman.DAT man.DAT present.ABS give.INF want:PTCP AUX.PRS
      'The woman wants to give the man A PRESENT.' (Dzhuma Abakarova, personal communication, February 2017)

Unlike other languages of this type surveyed here, though, UD also has an alternative focus construction, in which the verb is raised to the second position, and the focused constituent is clause-final, as in (54).

(54) **Subject focus:**
(Who gave the present to the man?)
  a. *Sawɣat*   <u>*bitxib*</u>   *dag*   *muruys*   XUNUYIN.
     present.ABS   gave   yesterday   man.DAT   woman.ERG
     'Yesterday a/the WOMAN gave a/the man a/the present.'
  b. *Dag*   <u>*bitxib*</u>   *muruys*   *sawɣat*   XUNUYIN.
     yesterday   gave   man.DAT   present.ABS   woman.ERG
     'Yesterday a/the WOMAN gave a/the man a/the present.' (Dzhuma Abakarova, personal communication, February 2017)

In (54), the focused subject appears in the clause-final position instead of its canonical position preceding the other verb dependents, as in (52). The order of the prefocal constituents is as free as it is in Turkish, as evidenced by (54a) and (54b). Crucially, raising the verb to the second position interacts with focusing: The verb-second option is licensed only in the context of narrow focus but not in the case of broad focus; and if the focus is realized postverbally in the construction, it can only appear clause-finally. This pattern indicates that (54) is closely related to the immediately preverbal focus construction in (52): it is derived by raising the verb, thus stranding the focus in the clause-final position. In contrast with raised preverbal foci, though, the fact that verb movement in (54) raises the left edge of the HVP is irrelevant for focus placement, as focus is right aligned. Instead, the purpose of verb movement is providing more optimal alignment of focus with the right ι-edge, by removing the intervening verb.

This interaction can be straightforwardly captured in our FA-based approach, as follows.[26] Unlike in the case of raised preverbal foci, the effect of verb movement lies not in extending the HVP – since, linearly speaking, the right edge of the HVP (and, therefore, the position of the right edge of the core ι) remains unaffected by verb raising in UD. As a point of departure, recall that the violation of ALIGN-R(FOCUS, ι) and ALIGN-R(HEAD, ι) cannot be skirted in the case of in situ focus in Turkish and Georgian, where the verb is more rigidly final. Georgian optionally sidesteps this violation by postposing the focus and aligning it with the maximal ι instead of the core ι: The cost is the violation of FOC$_{\iota\text{-}core}$, while the gain is perfect alignment with an ι-edge, without the intervention of the verb. We suggest that, to the same end, to circumvent imperfect right-alignment of the focus, UD optionally removes the verb itself, raising it to the second position. In this case, optimal alignment comes at the cost of syntactic markedness through the application of extra verb movement.

This account holds, developing Féry's (2013) ideas, that adjacency to a prosodic edge may be the main guiding principle in the case of immediately preverbal in situ focus placement. This is in stark contrast with more syntax-centered approaches, according to which foci occupy the most deeply embedded position (e.g. Cinque 1993; Zubizarreta 1998). Clearly, on such approaches, focus is not expected to interact with verb raising, as the latter does not affect the syntactic position of an in situ focus in any way.

---

[26] UD also permits focus-fronting, but, as far as we can tell, that construction appears limited to contrastive uses (like in Italian) and, as such, falls outside the scope of the present paper; see Pregla (2024).

Finally, it is worth noting that this interaction also poses a challenge to indirect alignment/Focus-as-Prominence models (such as Truckenbrodt 1995; Szendrői 2003; Samek-Lodovici 2005), according to which it is nuclear prominence that is aligned with a prosodic edge, rather than focus itself (see footnote 6). According to these models, focus is associated with nuclear prominence, and nuclear prominence is aligned with a prosodic edge, thereby indirectly causing focus to be edge-aligned. The interaction between focus and verb raising found in UD is problematic for such an approach precisely because the verb can be raised only in the context of a narrow focus but not in a broad-focus context. This fact is expected in the FA-based model developed here. That is because, while the verb intervenes between the focus constituent and the right ι-edge in the context of narrow focus, it is a proper part of the focus constituent in the context of broad focus; as such, it does not separate a (broad) focus from the ι-edge. The situation is different in a indirect alignment/Focus-as-Prominence approach. Here, the nuclear prominence is only separated from the right ι-edge by a final verb independently of whether that nuclear prominence is part of a narrow focus or a broad focus. Verb raising would improve edge alignment of the NPA only if the verb was accented in the final position, but even then, it would do so both in narrow focus and in broad focus contexts. This makes Focus-as-Prominence models ill-suited to capture the limitation of UD verb raising to narrow focus sentences. By contrast, as we have seen, the same asymmetric pattern falls into place in our Focus-as-Alignment approach.

6. Conclusion

Immediately preverbal focus placement is a well-recognized pattern in numerous languages, especially verb-final ones, but the reasons for focus–verb adjacency are unclear. In this paper, we proposed an account that addresses the need for adjacency in these configurations and shows that the focus–verb adjacency is only circumstantial and largely epiphenomenal. Bringing together two independent theoretical proposals, the FA model (Féry 2013) and the flexible ι-mapping hypothesis (Hamlaoui & Szendrői 2015) approaches, allowed us to provide a unified account of immediately preverbal focus placement in verb-final languages, even though the two types of immediately preverbal foci, raised and in situ ones, have different syntax. Doing so without bringing in prosodic requirements would be a challenge.

The main insight of the current approach is that raised preverbal foci align with the left edge of ι, created by the raised verb, whereas in situ preverbal foci align with the right edge of ι, with the verb unable to 'get out of the way' for the purposes of focus-edge alignment. It is the imperfect focus alignment caused by the verb in the in situ structures that allows us to model the alternative postverbal focus placement in languages like Georgian as well as the otherwise unexpected interaction of verb raising with narrow focus in UD.

References

Abaev, Vasilij I. 1939. *Iz osetinskogo èposa: 10 nartovskix skazanij [From Ossetian epos: 10 Nart legends].* Leningrad: USSR Academy of Sciences.

Abels, Klaus. 2016. The fundamental left–right asymmetry in the Germanic verb cluster. *Journal of Comparative Germanic Linguistics* 19, 179–220. https://doi.org/10.1007/s10828-016-9082-9.

Abels, Klaus & Ad Neeleman. 2012. Linear asymmetries and the LCA. *Syntax* 15.1, 25–74.

Aboh, Enoch O. 2007. Leftward focus versus rightward focus: The Kwa-Bantu conspiracy. In Nancy C. Kula & Lutz Marten (eds.). *SOAS Working Papers in Linguistics* 15, 81–104.

Alkhazishvili, Archil. 1959. Porjadok slov i intonacija v prostom povestvovateljnom predloženii gruzinskogo jazyka [Word order and intonation in simple declarative clauses in Georgian]. *Fonetika* 1, 367–414.

Aronson, Howard. 1990. *Georgian: A reading grammar*. Bloomington, IN: Slavica Publishers Inc.

Arregi, Karlos. 2001. Focus and word order in Basque. Ms., MIT. https://home.uchicago.edu/karlos/Arregi-2001-focus.pdf (accessed 9 November 2016).

Arregi, Karlos. 2002. *Focus on Basque movements*. Doctoral dissertation, MIT.

Atasoy, Atilla. 2022. Production, perception, and processing of focus in Turkish. Ph.D. thesis, Universität Potsdam.

Aygen, Gülşat. 2004. Finiteness, case and clausal architecture. *MIT Occasional Papers in Linguistics* 23.

Bhatt, Rakesh Mohan. 1999. *Verb movement and the syntax of Kashmiri* (Studies in Natural Language and Linguistic Theory, vol. 46). Boston: Springer.

Boeder, Winfried. 2005. The South Caucasian languages. *Lingua* 115.1–2, 5–89.

Borise, Lena. 2019. *Phrasing is key: The syntax and prosody of focus in Georgian*. Ph.D. dissertation, Harvard University.

Borise, Lena. 2023. The syntax of wh-phrases, narrow foci, and neg-words in Georgian. *The Linguistic Review* 40.2, 173–215.

Borise, Lena & David Erschler. 2022. Mora count and the alignment of rising pitch accents in Iron Ossetic. *Proceedings of Speech Prosody* 11, 871–875. https://doi.org/10.21437/SpeechProsody.2022-177.

Borise, Lena & David Erschler. 2023. Flexible syntax-prosody mapping of intonational phrases in the context of varying verb height. *Phonology* 39.2, 1–42.

Bródy, Michael. 1990a. Some remarks on the focus field in Hungarian. *UCL Working Papers in Linguistics* 2.20, 1–25.

Bródy, Michael. 1990b. Remarks on the order of elements in the Hungarian focus field. In István Kenesei (ed.), *Approaches to Hungarian*, vol. 3, 95–121. Szeged: JATE.

Bródy, Michael. 1995. Focus and checking theory. In István Kenesei (ed.), *Approaches to Hungarian*, vol. 5, 29–44. Szeged: JATE.

Büring, Daniel. 2010. Towards a typology of focus realization. In Malte Zimmermann & Caroline Féry (eds.), *Information structure: Theoretical, typological, and experimental perspectives*, 177–205. Oxford & New York: Oxford University Press.

Butt, Miriam & Tracy Holloway King. 1996. Structural topic and focus without movement. In *Proceedings of the First LFG Conference*. Stanford: CSLI Publications.

Çetinkaya, E. 2023. The linguistic realization of focus in Uyghur: Can the two focusing strategies be used interchangeably? *Poznan Studies in Contemporary Linguistics* 59.1, 27–41. https://doi.org/10.1515/psicl-2022-2001.

Chakmakjian, Samuel, Hossep Dolatian & Stavros Skopeteas. 2024. Word stress and prosodic events in Eastern Armenian. *Proceedings of Speech Prosody* 2024, 1170–1174. https://doi.org/10.21437/SpeechProsody.2024-236.

Cheng, Lisa & Laura J. Downing. 2007. The prosody and syntax of Zulu relative clauses. *SOAS Papers in Linguistics* 15. 51–63.

Chomsky, Noam. 1993. *Lectures on government and binding*. New York: Walter de Gruyter.

Cinque, Guglielmo. 1993. A null theory of phrase and compound stress. *Linguistic Inquiry* 24, 239–297.

Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36.3, 315–332.

Comrie, Bernard. 1984. Some formal properties of focus in Modern Eastern Armenian. *Annual of Armenian Linguistics* 5, 1–21.

Cruschina, Silvio. 2012. *Discourse-related features and functional projections*. Oxford & New York: Oxford University Press.

Dayal, Veneeta. 1996. *Locality in WH quantification: Questions and relative clauses in Hindi*. Dordrecht: Springer Netherlands.

Dekkers, Joost. 1999. *Derivations & evaluations. On the syntax of subjects and complementizers*. Amsterdam: Netherlands Graduate School of Linguistics. https://www.lotpublications.nl/derivations-evaluations-on-the-syntax-of-subjects-and-complementizers (accessed 23 December 2023).

Duanmu, San. 2000. *The phonology of Standard Chinese*. Oxford & New York: Oxford University Press.

Dum-Tragut, Jasmine. 2009. *Armenian: Modern Eastern Armenian* (London Oriental and African Language Library, vol. 14). Amsterdam & Philadelphia: John Benjamins.

Dzidziguri, Shota. 1954. *Dziebani kartuli dialekt'ologiidan [Studies in Georgian dialectology]*. Tbilisi: Samecniero-metoduri k'abinet'is gamomcemloba.

É. Kiss, Katalin. 1998. Identificational focus versus information focus. *Language* 74.2, 245–273.

É. Kiss, Katalin. 2002. *The syntax of Hungarian*. Cambridge: Cambridge University Press.

Elordieta, Arantzazu. 2001. *Verb movement and constituent permutation in Basque* (LOT Series 47). Utrecht: Utrecht University.

Erguvanlı, Eser Emine. 1984. *The function of word order in Turkish grammar*. Berkeley: University of California Press.

Erkü, Feride. 1983. *Discourse pragmatics and word order in Turkish*. Ph.D. dissertation, University of Minnesota.

Erschler, David. 2008. On wh-question formation in Iron Ossetic: A case for areal influence. *Presented at Syntax of the World's Languages III*, September 25–28, 2008, Berlin, Germany.

Erschler, David. 2012. From preverbal focus to preverbal "left periphery": The Ossetic clause architecture in areal and diachronic perspective. *Lingua* 122.6, 673–699.

Erteschik-Shir, Nomi. 1997. *The dynamics of focus structure*. Cambridge: Cambridge University Press.

Fanselow, Gisbert. 2008. In need of mediation: the relation between syntax and information structure. *Acta Linguistica Hungarica* 55.3–4, 397–413.

Fanselow, Gisbert & Denisa Lenertová. 2011. Left peripheral focus: Mismatches between syntax and information structure. *Natural Language & Linguistic Theory* 29.1, 169–209.

Féry, Caroline. 2013. Focus as prosodic alignment. *Natural Language & Linguistic Theory* 31.3, 683–734.

Féry, Caroline, Robin Hörnig & Serge Pahaut. 2010. Phrasing in French and German: an experiment with semi-spontaneous speech. In Christoph Gabriel & Conxita Lleó (eds.), *Intonational phrasing at the interfaces: Cross-linguistic and bilingual studies in Romance and Germanic*, 11–41. Amsterdam: John Benjamins.

Féry, Caroline & Vieri Samek-Lodovici. 2006. Focus projection and prosodic prominence in nested foci. *Language* 82.1, 131–150. https://doi.org/10.1353/lan.2006.0031.

Frascarelli, Mara. 1999. Subject, nominative case, agreement and focus. In Lunella Mereu (ed.), *Boundaries of morphology and syntax*, 195–217. Amsterdam: John Benjamins.

Frascarelli, Mara. 2000. *The syntax-phonology interface in focus and topic constructions in Italian*, vol. 50. Dordrecht: Kluwer.

Genzel, Susanne, Shinichiro Ishihara & Balázs Surányi. 2015. The prosodic expression of focus, contrast and givenness: A production study of Hungarian. *Lingua* 165, 183–204.

Georgieva, Ekaterina, Martin Salzmann & Philipp Weisser. 2021. Negative verb clusters in Mari and Udmurt and why they require postsyntactic top-down word-formation. *Natural Language & Linguistic Theory* 39.2, 457–503. https://doi.org/10.1007/s11049-020-09484-w.

Göksel, Aslı & A. Sumru Özsoy. 2000. Is there a focus position in Turkish? In Aslı Göksel & Celia Kerslake (eds.), *Studies on Turkish and Turkic languages: Turkologica* 4, 219–228. Wiesbaden: Harrasowitz.

Grimshaw, Jane Barbara. 1993. *Minimal projection heads and optimality*. New Brunswick, NJ: Rutgers University. http://ruccs.rutgers.edu/images/tech_rpt/tr-4/minproj4.pdf (accessed 10 October 2023).

Gürer, Aslı. 2020. *Information structure within interfaces: Consequences for the phrase structure*. Berlin: De Gruyter Mouton.

Gussenhoven, Carlos. 2008. Notions and subnotions in information structure. *Acta Linguistica Hungarica* 55, 381–395.

Hamlaoui, Fatima & Kriszta Szendrői. 2015. A flexible approach to the syntax-phonology mapping of intonational phrases. *Phonology* 32.1, 79–110.

Harris, Alice C. 1993. Word order harmonies and word order change in Georgian. In Rosanna Sornicola, Erich Poppe & Ariel Shisha-Halevy (eds.), *Stability, variation and change of word-order patterns over time*, 133–163. Amsterdam: Benjamins.

Hodgson, Katherine. 2013. Discourse configurationality in Eastern Armenian: The nominal projection. M.Phil. thesis, University of Cambridge.

Hoot, Bradley. 2012. Narrow focus on pre-nominal modifiers in Spanish: An optimality-theoretic analysis. In Kimberly Geeslin & Manuel Díaz-Campos (eds.), *Selected Proceedings of the 14th Hispanic Linguistics Symposium*, 293–307. Somerville, MA: Cascadilla Proceedings Project.

Horvath, Julia. 1981. *Aspects of Hungarian syntax and the theory of grammar*. Doctoral dissertation, UCLA.

Horvath, Julia. 1986. *FOCUS in the theory of grammar and the syntax of Hungarian*. Dordrecht: Foris Publications.

Hyman, Larry M. & John R. Watters. 1984. 'Auxiliary focus'. *Studies in African Linguistics* 15, 233–273.

Ishihara, Shinichiro. 2001. Stress, focus, and scrambling in Japanese. In: Guerzoni, Elena & Ora Matushansky (eds.), *MIT Working Papers in Linguistics: A few from building* E39, 142–175. Cambridge, MA: MIT.

İşsever, Selçuk. 2003. Information structure in Turkish: The word order–prosody interface. *Lingua* 113.11, 1025–1053.

Ito, Junko & Armin Mester. 2012. Recursive prosodic phrasing in Japanese. In Toni Borowsky, Shigeto Kawahara, Takahito Shinya & Mariko Sugahara (eds.), *Prosody matters: Essays in honor of Elisabeth Selkirk*, 280–303. London: Equinox.

Ito, Junko & Armin Mester. 2013. Prosodic subcategories in Japanese. *Lingua* 124, 20–40. https://doi.org/10.1016/j.lingua.2012.08.016.

Jackendoff, Ray S. 1972. *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.

Jayaseelan, Karattuparambil A. 1996. Question-word movement to focus and scrambling in Malayalam. *Linguistic Analysis* 26.27, 63–83.

Jayaseelan, Karattuparambil A. 2001. IP-internal topic and focus phrases. *Studia Linguistica* 55.1, 39–75. https://doi.org/10.1111/1467-9582.00074.

Jayaseelan, Karattuparambil A. 2003. Question words in focus positions. *Linguistic Variation Yearbook* 3, 69–99. https://doi.org/10.1075/livy.3.05jay.

Jo, Mi-Jeung. 1995. The theory of syntactic focalization based on a subcategorization feature of verbs. In Katalin É. Kiss (ed.), *Discourse configurational languages*, 335–374. Oxford & New York: Oxford University Press.

Jun, Sun-Ah. 1993. *The phonetics & phonology of Korean prosody*. Ph.D. dissertation, Ohio State University.

Kahnemuyipour, Arsalan & Karine Megerdoomian. 2011. Second-position clitics in the vP phase: The case of the Armenian auxiliary. *Linguistic Inquiry* 42.1, 152–162.

Kamali, Beste. 2011. *Topics at the PF interface of Turkish*. Doctoral dissertation, Harvard University. http://gradworks.umi.com/34/62/3462503.html (accessed 11 September 2016).

Kamali, Beste. 2014. Beyond morphosyntax: Interrogative Intonation and its role in morphosyntax in Turkish. *Turkic Languages* 18, 189–206.

Kamali, Beste & Manfred Krifka. 2020. Focus and contrastive topic in questions and answers, with particular reference to Turkish. *Theoretical Linguistics* 46.1–2, 1–71. https://doi.org/10.1515/tl-2020-0001.

Kidwai, Ayesha. 1999. Word order and focus positions in Universal Grammar. In Georges Rebuschi & Laurice Tuller (eds.), *The grammar of focus*, 213–244. Amsterdam & Philadelphia: John Benjamins.

Kidwai, Ayesha. 2000. *XP-adjunction in universal grammar: Scrambling and binding in Hindi-Urdu* (Oxford Studies in Comparative Syntax). Oxford & New York: Oxford University Press.

Kiliçaslan, Yilmaz. 2004. Syntax of information structure in Turkish. *Linguistics* 42.4, 717–765. https://doi.org/10.1515/ling.2004.024.

Kim, Alan Hyun-Oak. 1988. Preverbal focusing and type XXIII languages. In Michael Hammond, Edith A. Moravcsik & Jessica Wirth (eds.), *Studies in syntactic typology*, 147–169. Amsterdam & Philadelphia: John Benjamins.

Koch, Karsten A. 2008a. *Intonation and focus in Nɬeʔkepmxcin (Thompson River Salish)*. Doctoral dissertation, University of British Columbia.

Koch, Karsten A. 2008b. Focus projection in Nɬeʔkepmxcin (Thompson River Salish). In Charles B. Chang & Hannah J. Haynie (eds.), *Proceedings of the 26th West Coast Conference on Formal Linguistics*, 348–356. Somerville, MA: Cascadilla Proceedings Project.

Komen, Erwin. 2007. *Focus in Chechen*. Master's thesis, Leiden University.

Kornfilt, Jaklin. 1997. *Turkish*. London & New York: Routledge.

Kornfilt, Jaklin. 2005. Asymmetries between pre-verbal and post-verbal scrambling in Turkish. In Joachim Sabel & Mamoru Saito (eds.), *The free word order phenomenon: its syntactic sources and diversity*, 163–180. Berlin & New York: Mouton de Gruyter.

Kural, Murat. 1997. Postverbal constituents in Turkish and the Linear Correspondence Axiom. *Linguistic Inquiry* 28.3, 498–519.

Legate, Julie Anne. 2008. Morphological and abstract case. *Linguistic Inquiry* 39.1, 55–101.

Lomashvili, Leila. 2011. *Complex predicates: The syntax-morphology interface* (Linguistik Aktuell/Linguistics Today, vol. 174). Amsterdam; Philadelphia: John Benjamins.

Mahajan, Anoop Kumar. 1990. *The A/A-bar distinction and movement theory*. Ph.D. thesis, Massachusetts Institute of Technology.

Manetta, Emily. 2010. Wh-expletives in Hindi-Urdu: the vP phase. *Linguistic Inquiry* 41.1, 1–34.

Manetta, Emily. 2011. *Peripheries in Kashmiri and Hindi-Urdu: The syntax of discourse-driven movement*, vol. 4. Amsterdam; Philadelphia: John Benjamins.

McCarthy, John J. & Alan Prince. 1993. Generalized alignment. In Geert Booij & Jaap van Marle (eds.), *Yearbook of morphology* 1993, 79–153. Dordrecht: Kluwer.

Megerdoomian, Karine. 2002. *Beyond words and phrases: A unified theory of predicate composition*. Ph.D. dissertation, University of South California.

Megerdoomian, Karine & Shadi Ganjavi. 2000. Against optional Wh-movement. In *Proceedings of Western Conference on Linguistics (WECOL)*, vol. 12, 358–369. Fresno, CA: Department of Linguistics, California State University.

Miyagawa, Shigeru. 2010. *Why agree? Why move?* (Linguistic Inquiry Monograph). Cambridge, MA: MIT Press.

Munshi, Sadaf & Rajesh Bhatt. 2009. Two locations for negation: Evidence from Kashmiri. *Linguistic Variation Yearbook* 9.1, 205–240.

Mycock, Louise. 2007. Constituent question formation and focus: a new typological perspective. *Transactions of the Philological Society* 105.2, 192–251.

Nash, Léa. 1995. *Portée argumentale et marquage casuel dans les langues SOV et dans les langues ergatives: l'Exemple du géorgien* [*Argumental scope and casual marking in SOV and ergative languages: The example of Georgian*]. Ph.D. dissertation, Paris 8.

Nash, Léa. 2017. The structural source of split ergativity and ergative case in Georgian. In Jessica Coon, Diane Massam & Lisa deMena Travis (eds.), *The Oxford handbook of ergativity*, 175–200. Oxford: Oxford University Press.

Neeleman, Ad. 2017. PP-over-V meets Universal 20. *The Journal of Comparative Germanic Linguistics* 20.1, 3–47. https://doi.org/10.1007/s10828-017-9085-1.

Neeleman, Ad & Hans Van de Koot. 2008. Dutch scrambling and the nature of discourse templates. *The Journal of Comparative Germanic Linguistics* 11.2, 137–189.

Nichols, Johanna. 2011. *Ingush grammar*. Berkeley & Los Angeles: University of California Press.

Ortiz de Urbina, Jon. 2002. Focus of correction and remnant movement in Basque. In Xabier Artiagoitia, Patxi Goenaga & Joseba Lakarra (eds.), *Erramu Boneta: Festschrift for Rudolf P.G. De Rijk*, 511–524. Bilbao: Universidad del País Vasco/Euskal Herriko Unibertsitatea.

Özge, Umut. 2003. *A tune-based account of Turkish information structure*. Master's thesis, Middle East Technical University. https://open.metu.edu.tr/handle/11511/13228 (accessed 23 December 2023).

Özge, Umut & Cem Bozsahin. 2010. Intonation in the grammar of Turkish. *Lingua* 120.1, 132–175.

Öztürk, Balkız. 2004. *Case, referentiality and phrase structure*. Ph.D. dissertation, Harvard University.

Öztürk, Balkız. 2005. *Case, referentiality, and phrase structure* (Linguistik Aktuell 77). Amsterdam: Benjamins.

Pregla, Andreas. 2024. *Word order variability in OV languages*. Ph.D. thesis, University of Potsdam.

Prince, Alan & Paul Smolensky. 1993. Optimality Theory: Constraint interaction in generative grammar. Technical report 2. Rutgers University Center for Cognitive Science.

Reinhart, Tanya. 1995. *Interface strategies*. Ms., University of Utrecht.

Samek-Lodovici, Vieri. 2005. Prosody-syntax interaction in the expression of focus. *Natural Language & Linguistic Theory* 23, 687–755.

Selkirk, Elisabeth. 1996. The prosodic structure of function words. In *Signal to syntax: Bootstrapping from speech to grammar in early acquisition*, 187–213. Mahwah, NJ: Lawrence Erlbaum.

Selkirk, Elisabeth. 2005. Comments on intonational phrasing in English. In Sonia Frota, Marina Cláudia Vigário & Maria João Freitas (eds.), *Prosodies: With special reference to Iberian*, 11–58. Berlin: Mouton de Gruyter.

Selkirk, Elisabeth. 2011. The syntax-phonology interface. In John A. Goldsmith, Jason Riggle & Alan C. L. Yu (eds.), *The handbook of phonological theory*, vol. 2, 435–483. Hoboken, NJ: Wiley Blackwell.

Şener, Serkan. 2005. Postverbal constituents in Turkish: They are still high! Presented at ConSole XIV, University of Basque Country (EHU/UPV).

Şener, Serkan. 2010. *(Non-)peripheral matters in Turkish syntax*. Doctoral dissertation, University of Connecticut.

Seyfarth, Scott, Hossep Dolatian, Peter Guekguezian, Niamh Kelly & Tabita Toparlak. 2024. Armenian (Yerevan Eastern Armenian and Beirut Western Armenian). *Journal of the International Phonetic Association* 54.1, 445–478.

Skopeteas, Stavros. 2021. Distinguishing tonal events within word-final stress: Focus and question intonation in Eastern Armenian. Ms., University of Göttingen.

Skopeteas, Stavros & Gisbert Fanselow. 2010. Focus in Georgian and the expression of contrast. *Lingua* 120.6, 1370–1391. https://doi.org/10.1016/j.lingua.2008.10.012.

Skopeteas, Stavros & Caroline Féry. 2010. Effect of narrow focus on tonal realization in Georgian. *Proceedings of Speech Prosody* 5.

Skopeteas, Stavros, Caroline Féry & Rusudan Asatiani. 2009. Word order and intonation in Georgian. *Lingua* 119.1, 102–127. https://doi.org/10.1016/j.lingua.2008.09.001.

Surányi, Balázs, Shinichiro Ishihara & Fabian Schubö. 2012. Syntax-prosody mapping, topic-comment structure and stress-focus correspondence in Hungarian. In Gorka Elordieta Alcibar & Pilar Prieto (eds.), *Prosody and meaning*, 35–72. Berlin: Mouton de Gruyter. https://doi.org/10.1515/9783110261790.35.

Szendrői, Kriszta. 2001. *Focus and the syntax-phonology interface*. Ph.D. dissertation, University College London.

Szendrői, Kriszta. 2003. A stress-based approach to the syntax of Hungarian focus. *The Linguistic Review* 20, 37–78.

Szendrői, Kriszta. 2017. The syntax of information structure and the PF interface. *Glossa: A Journal of General Linguistics* 2.1, 32. https://doi.org/10.5334/gjgl.140.

Tamrazian, Armine. 1994. *The syntax of Armenian: Chains and the auxiliary*. Ph.D. thesis, University of London. https://search.proquest.com/openview/fc422b24aed8e1158f451107fc077322/1?pq-origsite=gscholar&cbl=2026366&diss=y. (11 December, 2023).

Truckenbrodt, Hubert. 1995. *Phonological phrases–their relation to syntax, focus, and prominence*. Doctoral dissertation, MIT.

Truckenbrodt, Hubert. 2005. A short report on intonation phrase boundaries in German. *Linguistische Berichte* 203, 273–296.

Truckenbrodt, Hubert. 2006. Phrasal stress. In Keith Brown (ed.), *Encyclopedia of language and linguistics*, 572–579. Amsterdam: Elsevier.

Truckenbrodt, Hubert. 2007. The syntax–phonology interface. In Paul de Lacy (ed.), *The Cambridge handbook of phonology*, 435–456. Cambridge & New York: Cambridge University Press.

Tuller, Laurice. 1992. The syntax of postverbal focus constructions in Chadic. *Natural Language & Linguistic Theory* 10.2, 303–334.

Vallduví, Enric. 1995. Structural properties of information packaging in Catalan. In Katalin É. Kiss (ed.), *Discourse-configurational languages*, 122–153. Oxford & New York: Oxford University Press.

van der Wal, Jenneke. 2012. Why does focus want to be adjacent to the verb? Presented at Parametric variation in discourse configurationality, 45th meeting of the Societas Linguistica Europaea, Stockholm University, August 29–September 1, 2012.

Vicenik, Chad & Sun-Ah Jun. 2014. An Autosegmental-Metrical analysis of Georgian intonation. In Sun-Ah Jun (ed.), *Prosodic typology* II, 154–186. Oxford: Oxford University Press. http://doi.org/10.1093/acprof:oso/9780199567300.003.0006.

Yarbay Duman, Tuba, Gülşat Aygen & Roelien Bastiaanse. 2008. The production of Turkish relative clauses in agrammatism: Verb inflection and constituent order. *Brain and Language* 105.3, 149–160. https://doi.org/10.1016/j.bandl.2007.11.001.

Zerbian, Sabine. 2006. Expression of information structure in the Bantu language Northern Sotho. Humboldt-Universität zu Berlin PhD Dissertation.

Zhghenti, Sergi. 1963. *Kartuli enis rit'mik'ul-melodik'uri st'rukt'ura [The rhythmic-melodic structure of Georgian language]*. Tbilisi: Tsodna.

Zhghenti, Sergi. 1965a. Intonacionnyj stroi gruzinskogo jazyka. In *Voprosy fonetiki kartvel'skix jazykov [Questions of phonetics of Kartvelian languages]*, 268–276. Tbilisi: Ganatleba.

Zhghenti, Sergi. 1965b. Ob udarenii v gruzinskom jazyke [On stress in Georgian]. In *Voprosy fonetiki kartvel'skix jazykov [Questions of phonetics of Kartvelian languages]*, 260–264. Tbilisi: Ganatleba.

Zubizarreta, Maria Luisa. 1998. *Prosody, focus, and word order*. Cambridge, MA: MIT Press.