

Editorial

An Introduction to the Special Issue “Syntax-Phonology Interface and Recursivity”

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The last decades have seen a renewed interest in the algorithms relating syntactic and prosodic structure since the ban on recursivity that had been prevalent in phonology for a long time was relaxed; see for instance Selkirk (2011) and Elfner (2012) for the Match constraints and Ito and Mester (2009, 2013) for the recursivity of the prosodic structure. The precise mapping mechanisms between morphosyntax and prosodic structure have again become the subject of intensive research. At the same time, empirical questions have also gained attention from different perspectives as well as regarding universal and typological aspects.

This Special Issue “Syntax-Phonology Interface and Recursivity,” published by *Languages*, provides a collection of articles on different aspects of the interface between syntax and the higher-level prosodic constituents Prosodic Word (ω -word), Prosodic Phrase (φ -phrase), and Intonation Phrase (ι -phrase).¹ While some of our authors primarily discuss Prosodic Words (Bögel; Colantoni and Sánchez; Ito and Mester; Miller and Sande; Weber), others concentrate on Prosodic Phrases (Hirayama, Hwang, and Kato; Ishihara and Myrberg; Kügler; Lee and Riedel), and still others discuss Intonation Phrases (Cheng and Downing; Schubö). This Special Issue also contains a few articles on related issues, such as the phonetic cues of information structure (Colantoni and Sánchez; Jabeen; Schubö) and the differential influence of lexical categories on such phonetic cues (Hirayama, Hwang, and Kato). All the articles are couched within the Optimality Theory (OT) framework, except for the last study mentioned.

Given the large set of typologically very diverse languages, it is not surprising that some authors also discuss the universality of the proposed models. The following languages are discussed in this Special Issue: Danish (Ito and Mester); Xitsonga (Lee and Riedel); Chimwiini, Kimatuumbi, Bäsáà, Akan, Connemara Irish, and Northern Biscayan Basque (Cheng and Downing); Anum (Kügler); Urdu (Jabeen); German (Bögel; Schubö); Swedish (Ishihara and Myrberg); Japanese (Ito and Mester; Hirayama, Hwang, and Kato; Ishihara and Myrberg); Blackfoot (Miller and Sande; Weber); Kaqchikel (Miller and Sande); and Quechua and Inuktitut (Colantoni and Sánchez).

Most articles address the theoretical questions central to this Special Issue, i.e., the best optimality-theoretic framework for the syntax-prosody interface and the existence of recursivity of the higher-level categories. The recursive syntactic structure is assumed to be mapped to their corresponding prosodic constituents: grammatical words are mapped to ω -words, syntactic phrases to φ -phrases, and clauses (or illocutionary forces) to ι -phrases. Mapping constraints enforce isomorphism between syntactic structure and prosodic structure, also in the case of recursive syntactic structure. In addition to the mapping constraints, well-formedness constraints, a special form of markedness constraints, are active, allowing the product of the interface constraints to contain mismatches between syntax and prosody and even predicting what form these will take.



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Besides these agreed-upon points, several controversies are apparent among the authors. The first contentious point is the kind of syntax that should be used for the mapping: most theories consider complete syntactic derivations as inputs to the phonology, but a minority of approaches prefer multiple spell-out (Chomsky 2001) so that the vP phase is the first chunk of derivation sent to phonology, with other phases successively being added to the core syntax + prosody. Some of the authors in this Special Issue (Cheng and Downing; Miller and Sande) prefer this derivative syntactic approach.

A second controversial aspect is the number of constituents that are needed in prosody. Do we need more than the three levels that have been mentioned so far? The literature is full of proposals about additional levels in between higher-level prosodic structure, especially in studies by scholars who do not accept recursive structure (e.g., “Clitic Group” by Nespor and Vogel [1986] 2007, “Major and Minor Phrases” by Jun (2005, 2014), “Prosodic Word Group” by Vigário 2014). Or maybe we need fewer? Some authors consider ι -phrases to be the end product of recursive φ -phrases (i.e., Elfner 2012), although none of the authors of the Special Issue have adopted this point of view.

The question of recursivity is particularly controversial. Most authors describe recursive prosody as the embedding of a constituent of a certain level into a larger constituent of the same level. From this perspective, iteration of the same constituent is not recursivity. However, in their contribution, Miller and Sande assume that only iteration is recursive, but embedding is not. Some authors seek to limit recursivity to a single level: either ω -words (Weber), φ -phrases (Cheng and Downing), or even ι -phrases (Jabeen). The question can be paraphrased in the following way: Are some constituents more prone to being recursive than others? Cheng and Downing propose only allowing recursivity for those prosodic constituents that are mapped to recursive syntactic structure.

Related to the question of which constituents can be recursive is the question as to which property of a constituent renders recursivity possible. Researchers have proposed that only morphosyntactic adjuncts create a recursive syntactic category, whereas heads project their own category. In German, this may be true: prefixes have different prosodic structures, but all of them trigger recursivity; whether they are a syllable, a foot, or a ω -word is partially decided by phonological properties (schwa syllables are unstressable syllables) and partially lexically specified (in German, *un-* is a stressed prefix, whereas *in-* is unstressed) (Féry 2024). However, Weber concludes for Blackfoot that prosodic constraints must be responsible for which element is the prosodic head rather than the syntactic and lexical properties of the morphological constituents. They observe that every prefix to the left of a ω -word prosodifies as a ω -word adjunct.

Discussions on the recursivity of prosodic constituents arose in the academic arena in the past when the Strict Layer Hypothesis (Nespor and Vogel [1986] 2007; Selkirk 1984) was considered an inviolable principle reflecting the flatness of the prosodic structure compared with the syntactic one. This principle initially survived in Optimality Theory, even though this framework made all constraints violable. The *min-max* model of Ito and Mester (2009, 2013) achieved a major advance in the acceptance of recursivity in prosody. This model not only recognizes recursivity as a standard prosodic feature but also the existence of different levels of one and the same prosodic constituent. Ito and Mester (2009, 2013) propose, for Japanese, that these different levels provide the prosodic domains in which different phonological processes apply.

In German, both prefixal and suffixal derivative morphemes are added recursively to an existing ω -word. Typologically, suffixes tend to be more tightly bound prosodically to the stem than prefixes. Suffixes can trigger resyllabification with the stem (as in German *kin.disch* ‘childish’ (from *Kind*) and *na.tio.nal* ‘national’ from *Na.tion*), but prefixes never do (as in German *Ur.opa* ‘great grandfather’ and *un.artig* ‘naughty’) (Féry 2024). Nevertheless, many researchers do not accept that recursive ω -words or φ -phrases are signaled by different prosodic cues. Weber does not accept it, even though they show that the left edge of the ω -word in Blackfoot often misaligns with a syntactic constituent via epenthesis at the left edge but never via overparsing material from neighboring morphemes. In short,

this is a highly contentious issue, and several authors argue against recursivity by objecting to exactly this property of the model.

We start the review of the Special Issue articles with the five papers focusing on theoretical issues, especially the recursive power of prosody.

The question of recursivity in prosody is reactivated by [Ito and Mester \(2009, 2013\)](#) in their *min-max* model, which allows every prosodic constituent to be recursive, i.e., a certain level of prosodic structure may appear in different hierarchically ordered forms: a minimal form, one or several intermediate forms, and a maximal form (e.g., ω^{\min} , ω' , and ω^{\max}). In their article in the present Special Issue, “Recursive Prosody and the Prosodic Form of Compounds,” Ito and Mester examine the prosodic recursive structure of compounds as a reflex of their morphosyntactic structure in two typologically different languages, Japanese and Danish, using the syntax-prosody interface Match model of [Selkirk \(2011\)](#) and [Elfner \(2012\)](#), which assumes that morphosyntactic constituents are mapped both at their left and right edges onto corresponding prosodic ones. The authors make a distinction between compounding (or “coordination”) and adjunction. Coordination is a balanced structure: two elements of the same kind come together to form a larger constituent which is again of the same kind, or which is dominated by a higher-level constituent. Adjunction always results from unbalanced structures. A prosodic head is augmented with a different element. In both Japanese and Danish, compounds may consist of two or more ω -words that together form a larger ω -word (coordination), or consist of only one ω -word plus a lower-level prosodic constituent, such as a foot or a syllable (adjunction); regardless of the source of their prosodic complexity, they all end up as ω^{\max} . The authors show that the finer structure they describe can only be accounted for in a non-recursive model if an indefinite number of additional prosodic constituents are added to those making up the prosodic hierarchy, each adjunction or coordination of prosodic material leading to a new level of structure. A final point made in the article is that ω^{\min} , ω' , and ω^{\max} refer to the same category, i.e., they all are ω -words, but their function differs: they can be the head of their extended category, a simple adjunction, or an element of a conjunction or of a more complex pattern of constituency. These different functions motivate and justify recursivity.

Two articles propose limiting the power of recursivity; one of them even argues for entirely banning it from the level of the ω -word. Both argue for their model with reference to spell-out.

First, Cheng and Downing’s article, “Recursion and the Definition of Universal Prosodic Categories,” supports only allowing recursivity in the prosodic structure when motivated by a corresponding recursive syntactic structure, especially when prosodic constituency originates in the mapping of syntactic phasal spell-outs as proposed by [Chomsky \(2001\)](#), i.e., CP and *v*P. Only these constituents are mapped to ι -phrases and φ -phrases, respectively. The mapping is asymmetrical, i.e., only at the right or the left edge of the syntactic constituents, using Align constraints and not Match, with Align being the interface traditionally used for non-recursive interface models ([Truckenbrodt 1999](#), among others). The motivation for severely restricting prosodic recursivity comes from a desire to formulate universal cross-linguistic generalizations about the syntax-prosody mapping and to allow only prosodic representations closely reflecting syntactic ones. Several prosodic parses of languages that have been discussed in the literature are reanalyzed according to these restrictions: Chimwiini, Kimatuumbi, Bàsàà, and Akan, on the one hand, and Connemara Irish and Northern Biscayan Basque, on the other hand. A major result of these constraints is that what were often taken for recursive φ -phrases inside a VP are now ι -phrases. This also holds for subject constituents. For Connemara Irish, the well-formedness constraints BINARYMINIMALITY and STRONG START used in [Elfner’s \(2012\)](#) original analysis play an important role in its reanalysis, as well as the obligatory presence of an ι -phrase corresponding to the *v*P.

The second article arguing against general prosodic recursivity, this time at the Prosodic Word (ω -word) level, is Miller and Sande’s “Is Word-Level Recursion Actually Recursion?” The authors address an issue that most phonologists have discarded in

their search for recursive prosodic patterns, i.e., what they call “recursion” is in fact the iteration of the same category. Additionally, they discard as non-recursive what most authors consider the only true cases of recursivity, i.e., compounding and adjunction. Similar to Cheng and Downing’s proposal, they argue that word-level recursion is actually syntactic cyclic spell-out. Their argumentation is based on two observations: first, compounds often have a different stress pattern than the elements entering into them, as in Japanese; second, prosodically weak elements that are adjoined to existing words, such as clitics and affixes, can present different segmental phenomena, as in Limbu. They claim that recursivity is not needed at the Prosodic Word level if prosodic structure is cyclically evaluated at the syntactic phase boundaries. They argue for a new composite model consisting of Cophonologies by Phase (CbP) and phase-based Prosodic Phonology (Tri-P Mapping). This constitutes a stratal OT approach where morphemes define new strata in having their own specific prosodic requirements and constraint ranking.

Two articles in this Special Issue explicitly compare the merits of Alignment Theory and Match Theory (plus Wrap Theory for one of them).

Weber’s article, “Syntactic Adjunction and Prosodic Word Recursion in Blackfoot,” focuses on the verbal complex in Blackfoot, a strongly head-marking polysynthetic language. Verbal complexes have the form (person–(prefix*)–[STEM]–suffixes), but the focus of the study is on the inner part, i.e., (prefix*)–[STEM]–suffixes. Both the stem + suffixes and the verbal complex are phrasal. The stem is a *vP*/VP phrase containing verbalizing suffixes, which are heads instantiating V^0 and v^0 . This indicates that the stem contains VP and *vP* phrasal projections. The stem-internal, a-categorical $\sqrt{\text{ROOT}}$ is a phrasal adjunct to an intransitive VP or transitive *vP*. The verbal complex is a CP phrase that contains a C^0 merged with an IP complement. This C^0 selects the finiteness of the complement IP phrase. Moreover, different clause-typing suffixes instantiate I^0 . In short, the verbal complex has the internal syntax and distribution of a CP. This complex morphosyntax can be couched in a phase + spell-out approach. Because of the phrasal nature of the verbal complex, the author proposes that the phrasal theories of syntax-phonology correspondence apply. They assume that the verbal complex is a φ -phrase containing the VP/*vP* phrase, a ω -word. This is motivated by several phonological processes taking place at the edges of these constituents, such as epenthesis and vowel coalescence, as well as restrictions on certain types of segments. Both the left and right edges of the ω -word (the VP/*vP* phrase) and the φ -phrase (the verbal complex) have different segmental restrictions that are described in detail in the article. The syllable structure is CV(V) or CV(C) but can be CVVC or CVCC at the end of a φ -phrase. Weber assumes that the φ -phrase needs to be phonologically bigger than the ω -word, and this is achieved by the additional consonant. The left edge of the VP/*vP* phrase is phonologically identical to the left edge of the prefixes, speaking for a recursive structure of the ω -word. It is suggested that the minimal ω -word (the stem) and the recursively larger ones (with added prefixes) need to have exactly the same phonological properties. However, the right edge of a prefix is transparent in contrast to the right edge of a ω -word, i.e., epenthesis and coalescence apply in this context. Weber thus assumes that prefixes are not ω -words; rather, they recursively adjoin to a ω -word. An alternative model without recursivity is proposed by Miller and Sande (this volume). The final part of Weber’s article contains a comparison between Alignment, Wrap, and Match theories. Selkirk’s (1996) typology of clitics serves as a test. The result is that none of the theories can account for the full typology of recursive ω -words with prefixes. In Blackfoot, however, MATCH(XP, ω) requires each *vP* to correspond to a ω -word, accounting in this way for the recursive structure. Even though prefixation is equated with adjunction, Ito and Mester’s *min-max* model plays no role in the choice of the interface model or the asymmetry problem.

In “Match Theory and the Asymmetry Problem: An Example from Stockholm Swedish,” Ishihara and Myrberg address the best way to tackle what they call the “Asymmetry Problem,” i.e., the difference between the left and right alignment between morphosyntactic and prosodic constituents. Match constraints always simultaneously target both edges and thus

cannot express this difference. By contrast, Align constraints can be ranked differently for right and left edges. The authors propose a new restriction in the syntax-prosody mapping called the “Minimal Interface Hypothesis” (MIH): Match constraints are the sole constraints that are allowed to refer to syntactic constituents, i.e., no constraints such as ALIGN-XP, WRAP-XP, and STRESS-XP can be used in the syntax-prosody interface. According to this restriction, the Asymmetry Problem can only be resolved using well-formedness constraints. The authors propose an account for Stockholm Swedish and another one for Japanese. In both cases, recursivity is present in prosodic structure as a direct consequence of the Match constraints. For Swedish, the asymmetry problem is illustrated by left- and right-branching clause embeddings that yield several optional phrasing patterns. ι -phrases are head-final, and the right edges associated with ι -heads have a stronger correlation with syntax than the left edges. As a result, inserting a prosodic left edge that has no corresponding edge in syntax is easier than inserting a prosodic right edge lacking a corresponding syntactic edge. This asymmetry explains the variability in the pattern of the prosodic structure of these sentences. In the case of Japanese, the left edges of φ -phrases have a stronger correlation with syntax: the φ -phrase in Japanese is prosodically left-headed. Because of this, failing to reflect a syntactic left edge in prosody is a more serious violation than failing to reflect a right edge in prosody. The Asymmetry Problem in Japanese is illustrated by a left- vs. right-branching structure in (1) and (2) (see Kubozono 1993 for these structures). Ishihara and Myrberg invoke Kratzer and Selkirk’s (2020) stratal model of the syntax-prosody interface to first derive a prosodic structure that perfectly maps the syntactic structure. This first step is illustrated in (1). The prosodic heads of each φ -phrase are indicated in bold.

(1) The Asymmetry Problem in Japanese:

a. Left-branching structure: Match-compliant structure

[[[naomi-no ane-no] yunomi-no] iro]
 Naomi-GEN sister-GEN teacup-GEN color
 ‘The color of the teacup of the sister of Naomi.’
 $[XP [XP [XP A B] C] D] \rightarrow (\varphi (\varphi (\varphi \mathbf{A B}) C) D)$

b. Right-branching structure: Match-compliant structure

[naomi-no [marui [omoi yunomi]]]
 Naomi-GEN round heavy teacup
 ‘Naomi’s round heavy teacup.’
 $[XP A [XP B [XP C D]]] \rightarrow (\varphi \mathbf{A} (\varphi \mathbf{B} (\varphi C D)))$

In a second step, the Match-compliant structures are transformed under the combined effects of ALIGN(φ , Left, Head(φ), Left), CULMINATIVITY, and BINMAX, thus the well-formedness constraints responsible for the phonological structure. In the left-branching case, prosodic phrasing differs from the syntactic structure under the influence of the binarity constraint BINMAX, as shown in (2a). Adding a head is not problematic. By contrast, the right-branching structure is faithfully kept in the prosody due to the presence of prosodic heads at the left edge of each φ -phrase. Deleting them is not allowed, as shown in (2b).

(2) Prosodic mapping

a. Left-branching structure: rephrasing due to binarity

$(\varphi (\varphi \text{ naomi-no ane-no}) (\varphi \text{ yunomi-no iro}))$
 $(\varphi (\varphi (\varphi \mathbf{A B}) C) D) \rightarrow (\varphi (\varphi \mathbf{A B}) (\varphi C D))$

b. Right-branching structure: no rephrasing

$(\varphi \text{ naomi-no } (\varphi \text{ marui } (\varphi \text{ omoi yunomi}))) *(\varphi (\varphi \text{ naomi-no marui}) (\varphi \text{ omoi yunomi}))$
 $(\varphi \mathbf{A} (\varphi \mathbf{B} (\varphi C D))) \rightarrow (\varphi \mathbf{A} (\varphi \mathbf{B} (\varphi C D)))$

However, we (or at least the first author of the present article) suggest that both *naomi-no ane-no* ‘Naomi’s sister’ and *yunomi-no iro* ‘teacup’s color’ can be considered syntactic DP constituents from the start (and thus we have (teacup’s color) $_{\varphi}$ of (Naomi’s sister) $_{\varphi}$). Compare this with the non-DP structure of *naomi-no marui* ‘Naomi’s round’ or *omoi yunomi* ‘heavy teacup’. If this analysis is correct, Kratzer and Selkirk’s stratal analysis model appears to be superfluous: (2a) is a direct mapping of the syntactic structure, and (1a) does not exist. Both the left- and right-branching structures map their syntactic structure one-to-

one to the prosodic structure, and the well-formedness constraints reflect the syntactic and prosodic structure: they do not transform them.

Three articles assume the recursivity of prosodic structure as a fact in their discussion of data.

In their article “Recursivity and Focus in the Prosody of Xitsonga DPs,” Lee and Riedel show that the unmarked word order of a noun and two lexical modifiers in Xitsonga, a South Bantu language, leads to a single φ^{\max} , signaled by a single instance of penultimate lengthening on the final word and application of H-tone spreading. Recursive prosodic phrases are created in complex DPs with marked word orders as a result of focus alignment. Positioning a modifier in the left-periphery position within the DP domain creates an embedded φ -phrase on this word, mapped to a focus-marked syntactic phrase. This additional φ -phrase is called φ^{foc} , and penultimate lengthening takes place in this pre-nominal modifier. The following noun is also focused, even though it is not part of this φ^{foc} -phrase. A post-nominal quantifier also creates a new embedded φ -phrase when focused. In other words, “the prosody inherits the focus marking.” However, not all marked word orders have the power to create a new φ -phrase. When marked word orders do not create new φ -phrases, scrambling is at play. Scrambling is less constrained by syntax and is thought to be independent of information structural effects. In short, a prosodic phrase is, in the default case, mapped to the syntactic structure, but if focus reorders the elements of a DP, new φ -phrases are created.

Kügler’s article, “Phonological Phrasing and ATR Vowel Harmony in Anum,” describes regressive [+ATR] vowel harmony (RVH) in Anum, a Kwa language, in different syntactic environments. Some syntactic categories allow RVH to take place, whereas others block it. Vowel harmony applies in recursive prosodic phrases but not across maximal prosodic phrases (φ^{\max}). The proposed OT analysis accounts for RVH with syntax-phonology Match Theory and addresses both word-level and phrase-level harmony. Specifically, RVH applies frequently between words that belong to either the same or to different syntactic constituents but is blocked between two verb phrases of a serial verb construction and between any word and a following sentence-final time adverbial. Unexpectedly, RVH takes also place between a sentence-initial subject and a following verb, independent of the size of the subject constituent and the remaining number of words in the sentence. The special behavior of subject constituents that prosodically phrase together with verbs and with constituents of the verb phrase (VP) is discussed in this article. The author suggests that either a phonological well-formedness constraint or a syntactically distinct input may account for phrasing effects with subject constituents in Anum.

Bögel’s article, “Function Words at the Interface: A Modular Approach,” addresses the prosodic nature of the first-person nominative pronoun in Swabian, a southern dialect of German. Like all other pronouns of German, this pronoun has a strong and a weak form, [i:] and [ə] in Swabian. As a weak form, the pronoun is an (affixal) enclitic, which has to be recursively adjoined to a $\omega^{-\max}$ in the *min-max* model of Ito and Mester (2009, 2013), thus obligatorily forming the adjoined part of a larger ω -word. When appearing in its strong form [i:], it is the head of a prosodic word itself; it is a minimal ω -word (ω^{\min}) that, if needed, can host a clitic, to form a larger $\omega^{-\min}$. The promotion of a weak function word to the status of a ω -word shows a possible mismatch between syntactic structure and prosody, because, by its nature, a function word is supposedly not able to be mapped to a ω -word. A plausible solution (though not the one proposed by Bögel) is to assume that as soon as a function word is prosodically prominent (focused or contrastive), it becomes a ω^{\min} and even a larger ω -word via adjunction of a weak clitic. The prosody is responsible for this prosodic promotion rather than the morphosyntax. Bögel uses two corpora to illustrate the distribution of the two forms: a written translation of two Asterix comics in Swabian, and the Zwirner oral corpus, comprising a total of approximately 4 hours of speech by 12 speakers recorded in the 1950s and 1960s. In the final part of her article, Bögel discusses a possible account of function words in the Lexical-Functional Grammar (LFG) framework that consists of dissociating Match-word from the other Match constraints, a proposal that

would lead us too far away from the concerns of this Special Issue if discussed in detail in this introduction.

The remaining four papers consider related aspects of the syntax-prosody interface, such as the effect of lexical category on downstep and the role played by information structure in prosodic cues.

In “Lexical Category and Downstep in Japanese,” Hirayama, Hwang, and Kato find that downstep may be favoured by specific morphosyntactic categories and disfavoured by others. The results of a new production experiment with 20 different left-branching nominal phrases $[[X_1 X_2] N]$ show that the target X_2 is always downstepped relative to the trigger X_1 . X_1 is an accented or unaccented noun N , verb V , or adjective. These results are compared with those of a previously published experiment by the same authors, using right-branching nominal phrases $[X_1 [X_2 N]]$. In this latter structure, when X_1 and X_2 are adjectives, downstep sometimes takes place and sometimes does not, although it always takes place in the other conditions. The discussion focuses on the causes of the deviant behaviour of the adjective. Several explanations are proposed and dismissed, for instance, prosodic structural, syntactic, or semantic ones.

In his study, “Givenness and Stress Rejection,” Schubö addresses the effect of information structure on the distribution of pitch accents in German sentences. He is especially interested in the impact of givenness on phrasal stress assignment in German. A high-ranking optimality-theoretic constraint *STRESS-GIVEN- ι is proposed against post-nuclear stresses on given constituents, at least when another focused word is available to bear the main pitch accent. Schubö endorses a framework in which syntax is indirectly reflected by prosodic structure, with STRESS- φ replacing the older constraint STRESS-XP, which directly reflects syntax. Two other constraints are active in German: RIGHTMOST, which is responsible for a rightmost nuclear stress at the level of the ι -phrase, and MATCH-PHRASE, which requires each lexical XP to be reflected by a corresponding φ -phrase. Phrasal stress is not entirely banned on given constituents, as prenuclear given constituents can be pitch-accented. Schubö does not take a position on the question whether recursive prosodic structure is needed in German, because his data do not require it.

In “The Role of Prosody and Morphology in the Mapping of Informational Structure onto Syntax,” Colantoni and Sánchez describe the impact of morphology and prosody on the expression of information structure in the agglutinative/polysynthetic languages Quechua and Inuktitut. As in Blackfoot, these languages have a rich morphology that allows for complex sentences to be single prosodic words. The observed purely demarcative use of intonation and the relatively flat and non-recursive prosodic structure of the utterance are put in correspondence with the fact that the word rather than the sentence is the domain of syntactic recursion. The authors propose the following continuum of how languages express information structure and other discourse-level properties: One end of the continuum is occupied by languages such as English and Spanish that use prosodic structure, as well as lexical and post-lexical pitch changes and intonational patterns, to express sentence types and the information value of a constituent. These languages do not rely on morphological cues for such grammatical information. At the other end, languages such as Quechua and Inuktitut have a large set of morphemes that convey evidentiality and sentence- and discourse-level distinctions, in particular information structural ones. Particles or affixes are used to mark questions. In the authors’ opinion, the presence of such morphemes eliminates the need for intonational cues such as those found in English and Spanish. In the second part of the article, the authors discuss evidence from Quechua-Spanish and Inuktitut-English bilinguals. They show that intonational patterns emerge in non-intonational languages to distinguish sentence types, whereas morphemes or discourse particles emerge in intonational languages to mark discourse-level features.

Jabeen has two aims in “Word Order, Intonation and Prosodic Phrasing: Individual Differences in Production of Narrow and Broad Focus in Urdu/Hindi.” The first one is to argue for a model of the prosodic hierarchy of Urdu that uses phonetic cues rather than syntactic structure for the definition of the constituents. The second goal is to investigate

speaker variation in the use of phonetic cues as reflexes of focus in Urdu. The results of a semi-spontaneous production experiment involving 12 participants uttering sentences in Urdu with different narrow and wide focus are phonetically analysed, and the results show an extreme variation in the cues entering the analysis. Two cues correlating with narrow focus are discussed in detail. First, post-focal compression is sometimes used but is also very often not present. Second, Féry et al.'s (2016) original observation for Hindi is also used in Urdu: a narrow focus is sometimes signaled by upstepping the high boundary of the preceding phrase. This has the effect of rendering the prosodic boundary immediately preceding the narrow focus more prominent. In syntactic terms, the category of the constituents does not change: it is always a syntactic phrase in the examples provided. However, the author proposes that the φ -phrase can change to an ι -phrase, according to prominent prosodic cues. In the second part of the article, an experiment is discussed in which speakers of Urdu were asked to decide which kind of prosodic boundaries are being used in different environments. All the data used in this experiment were from a single speaker in the first experiment (described as an anomaly by the author because of her abnormal use of phonetic cues for focus). The marking of focus type and phrasing is far from uniform among the speakers of Urdu, and most of the speakers do not change their phonetic cues according to the presence and/or position of focus. On the basis of this experiment and the previous theoretical work by the author, recursivity of prosodic constituents is proposed as being limited to ι -phrases, which sometimes show upstep. This is not true of φ -phrases, which are regularly in a downstep relationship to each other. For this reason, only ι -phrases are optionally recursive. Syntax plays no role in this decision, only tonal scaling. However, in our view, according to the logic of the decision to base recursivity of prosodic constituents on phonetic cues, φ -phrases should be recursive as well as they occasionally are in a downstep relationship with each other.

To summarize, even though some level of consensus about the syntax-prosody interface is evident, this Special Issue's collection of articles reveals several open questions, as listed at the beginning of this introduction, that do not yet have a universally valid answer, such as the recursivity of prosodic structure in all its facets. Some of these issues may have their origin in the language diversity addressed in this Special Issue. When different languages are compared for the best framework, perfect homogeneity of approaches is difficult to obtain. In our view, once recursivity of prosody is allowed, investigation of how the prosodic categories needed for mapping syntax to prosody— ω -word, φ -phrase, and ι -phrase—account for the differences will be necessary. Only more data and more detailed proposals can lead us further.

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Notes

- ¹ In this introduction and for the sake of clarity, we only use the terms ω -word, φ -phrase and ι -phrase, avoiding in this way a proliferation of different names but equivalent concepts such as Accentual Phrase (AP), Intermediate Phrase (ip), or Phonological Phrase (PhP).

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