UPenn – Department of Linguistics
2021A: Ling 620 – Topics in phonetics:
Prosody-Syntax relations
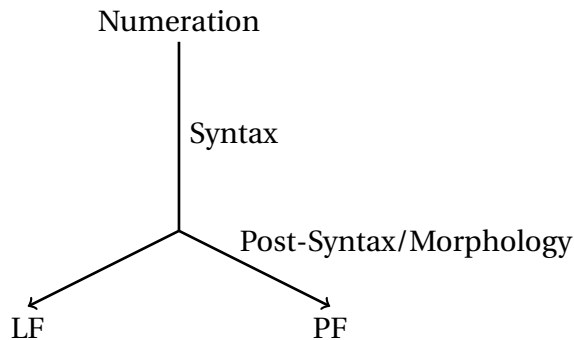
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Topics

1   Notes

1.1   Architectural questions – possible interactions

- Starting point: Y-model

Numeration

Syntax

Post-Syntax/Morphology

LF   PF

- the syntax only manipulates features and performs merge and move operations
- morphology enters the stage post-syntactically (cf. Distributed Morphology)
- semantics interpretes syntax

- What kind of interactions are possible betten syntax and prosody?

- phonology-free syntax: phonlogy cannot drive syntax: there are no syntactic operations that only apply to, e.g., syntactic objects that start in a consonant
- phonology/prosody interprets syntax (comes after syntax, either completely or in cycles); prosody can access deep structure, not just surface structure:
  - assuming that nuclear stress goes onto the lowest constituent/the right-most constituent in English, the stress on the RC-head noun is puzzling at first sight; makes sense under a head-raising analysis of RCs, where the RC-head originates within the RC, Bresnan (1971: 258f.), so-called prosodic reconstruction

  (1)   a.   Mary liked the proPOsal that George left
         b.   Mary liked the proposal that George LEAve.

  (2)   Mary liked the [proPOsal] that George left __

* similarly, nuclear stress differentiates between unergative and unaccusative subjects, which can be made sense of if unaccusative subjects are underlying objects (from Selkirk; facts are somewhat contested and delicate).

(3)   What happened?
    a. JOHNson died __.
    b. John __ WHISTled.

→ for this to be possible, prosody must either be able to see lower copies of movement or apply rather early/cyclically (syntax is interpreted prosodically in small chunks and thus at a point when the object is still in its base position)
* some complications: not all movement types (no prosodic reconstruction with scrambling)

– prosodic well-formedness constrains constrain syntactic operations/act as a filter on certain syntactic structure/operations. Most obvious in case of heavy-NP-shift or extraposition

(4)   a. ??John bought yesterday a book.
    b. John bought yesterday the book he's been wanting to buy in a long time
    c. ??John bought the book he's been wanting to buy in a long time yesterday

* extraposed material is phrased into an independent prosodic constituent of a high type; this is most felicitous with sufficient heaviness; clause-internally, this may lead to violations of layering (a prosodic constituent of a higher type embedded within lower types?)

– prosodic domains constrain genuninely syntactic operations and can be seen as an alternative to syntactic adjacency conditions, see Ackema & Neeleman (2003), Ackema & Neeleman (2004) on agree agreement alternations (allomorphy) occuring in SV/VS-alternations:

(5)   a. Je gaa-t 'you go-2sg'
    b. Morgen ga je 'tomorrow go you'

* the deletion is not possible if there is material between the verb and the pronominal subject
* It is argued that the absence of inflection can be understood as impoverishment rules operating within particular prosodic domains
* A similar approach is pursued for cliticization, pro-drop, complementizer agreement and that-trace effects in Ackema & Neeleman (2004: chapter 7).
! It is not so much the fact that prosody constrains impoverishment that is remarkable here but the fact that operations that may be taken to be core-syntactic actually take place post-syntactically

– phonology drives/influences syntax more directly:

    * Richards (2010); Richards (2016): The prosodic structure of a language influences the availability of overt movement: syntactic and prosodic structures have to be built in parallel

        · The availability of wh-in-situ/overt wh-movement depends on the placement of prosodic (left or right) and the position of the wh-complementizer. For feature checking, the wh-phrase must be in the same prosodic constituent as the wh-complementizer. Some languges can form prosodic domains that include both complementizer and wh-phrase in its base position; in that case, overt movement is not necessary

        · the presence/absence of overt EPP-movement to Spec,TP depends on the nature of the morphology in T, viz., whether it needs support (suffix or not) and, if it needs support, whether there is a prosodic boundary within the verbs of the language, which then are sufficient to support the morphology

    * word order possibilities that cannot arise solely through syntactic operations

        · some operations like the placement of Latin -que or placement of clitics can arguably be handled by post-syntactic operations like Local Dislocation or Lowering, cf. Embick & Noyer (2001) (perhaps preceded by proper syntactic operations)

(6)   Boni pueri bonae-que puellae
        good boys good-and girls
        'Good boys and good girls.'

        · for other word order phenomena it has explicitly been argued that they involve non-syntactic/prosodic movement, e.e.g. Latin and Greek hyperbaton (Agbayani & Golston 2010, Agbayani & Golston 2016), Lowering of subjects in Tagalog (Sabbagh 2014), pronoun post-posing in Irish (Bennett et al. 2016).

(7)   tuas$_2$ etiam [__$_2$ Epiroticas]$_1$ exspecto [__$_1$ litteras]
        aour.acc.pl also Epirian.acc.pl await.1sg letter.acc.pl
        'I also await your letters from Epirus.' Cicero (ad Atticum)

(8)   [ad impium$_1$ [bellum [__$_1$ ac nefarium]]]
        to impious.acc war.acc and wicked.acc
        'to an impious and wicked war' Cicero (in Catilinam)

1. fronting of discourse-prominent material to the begining of an intonation phrase
2. many of the examples involve CSC or LBC violations that we also find in other languages (e.g., Serbo-Croatian), so is this really radically different? There do not seem to be any examples where movement is downward
3. what kind of prosodic operation could implement this movement? Can the restrictions on the operation (clause-boundedness) be reduced to prosodic boundaries (intonation phrase)?
4. the data in Sabbagh (2014) and Bennett et al. (2016) involve more local operations, but they are more careful in that they show that in some cases, an element occupies a surface position it cannot have reached by syntactic means, e.g., a subject having scope over a coordination, but it is realized within the second conjunct; the reordering is a reaction to prosodic constraints regulating the beginning of a prosodic phrase (WEAK/STRONG START)

– syntax constrains prosody in that it naturally delimits the size of domains:

  * observation:

    (9)   Generalization: Phrasal phonological rules are cross-linguistically sensitive to the syntactic constituent structure in some very general sense â words are not just randomly grouped together into phonological domains, but instead are grouped systematically in ways that preserve basic aspects of the underlying syntax.

  * phrasing: not everything goes:

    (10)   a.   (On Monday morning Jane left)
               b.   (On Monday morning) (Jane left)
               c.   *(On Monday) (morning Jane left)

  * Unattested syntax-phonology correspondence:

    (11)   a.   Syntax-phonology mapping algorithm: A phonological break occurs (only) after every adjective in the utterance.
               b.   *(While my best) (friend was buying a small) (black) (coffee I read my new) (book)

  → this follows automatically if syntax plays an important role in the formation of prosodic domains

– different phrasal phonological processes often apply to domains of different sizes (clause, VP, TP etc.)

– big question: can the size of domains be derived from the syntactic computation?

  * yes: direct reference theories, cf. Pak (2008)

    · certain facts follow very naturally under same form of cyclic compuation, viz., phases, e.g., the fact that prosodic processes are usually clause-bound (cannot cross CP-boundaries)

    · at the same time, it seems clear that not all processes correspond neatly to phases as they are currently assumed in Minimalist syntax, especially the vP-phrase seems ill-suited to capture prosodic domains (either too small or too big), see Cheng & Downing (2016), Bonet et al. (2019)

    · the question is thus whether one can come up with a model that is flexible enough to accommodate that different sizes of different processes; Pak (2008) is a concrete proposal

  * no: indirect reference, e.g., Cheng & Downing (2016): there is an intermediate level of representation, governed by prosodic theory theory onto which syntactic structure is first mapped, then phonological rules apply within those structures

  * the indirect reference hypothesis seems to be predominant, but important direct reference approaches have occasionally been proposed

    · given Occam's Razor, direct reference should be preferred (the syntax is there anyway)

    · a big question is what is actually meant by direct reference, and some of the characterizations in the (critical) literature are inaccurate: showing that a prosodic domain does not correspond to an established syntactic domain is not necessarily sufficient to rule out direct reference

    · an explicit proposal that entertains the possibility of post-syntactic re-grouping to account for different domain-sizes is Pak (2008)

- What kind of interactions are possible between semantics and prosody?

  - Given the Y-model, we don't really expect properties of LF to influence PF, but in some cases, that seems to be the case.

    * For instance, focused elements receive prosodic prominence; D-linking affects nuclear stress (no longer on the object but on the verb)

      (12)   a.   I love MARY.
             b.   Johnson had been sick for a long time and then, as was to be expected, Johnson DIED.

    * contrastive topics have their own special intonation contour

      (13)   TEA I likE, but CoFEE I can't stand.

    * what conditions what? are there syntactic features that are interpreted prosodically and semantically? Or do independent prosodic features lead to certain interpretations?
      · the effect of givenness on stress suggests that information structure influences stress independently
      · conversely, the fact that nuclear stress can lead to focus projection may suggest that prosody can lead to information-strutural interpretations without there being explicit features?
      · perhaps, there is some optionality in how stress rules apply, which then receive different interpretation

  - what makes things generally complicated in this area is that there are significant mismatches between information-structure and syntax; there is thus clearly no one-to-one mapping

1.2 Possible concrete topics

1. Concrete examples of direct reference analyses:

   - Cinque (1993)
     claims that nuclear stress in different languages is on the most deeply embedded constituent; eventually not quite correct but perhaps stimulating? Has 2 parts, sentence stress and compound stress; one could focus one just sentence stress, which seems less speculative;
   - Wagner (2005): chapter 6
     About stress; shows that prosodic asymmetries can be captured by referring to function vs. argument and linear precedence (functions that follow are obligatorily subordinated, functions that precede do not have to be).
   - Liberman & Sproat (1992)
     A good choice I think if we want to go deeper into stress

2. Explicit theories of direct reference

   - Pak (2008)
     One could read chapters 1-2 (pp.1-79), which lay out the basic architecture and the arguments in favor of it
     one of the more recent explicit theories of direct reference
   - Seidl (2001)
     perhaps too similar

3. Domains in Prosody and domains in syntax - possible problems for direct reference

   - Cheng & Downing (2016)
     A paper that lists problems for direct reference approaches regarding domains; shows that at least some prosodic domains cannot easily be linked to phases. Should be read after Pak as it raises interesting problems not just for approaches based on phases but for direct reference more generally. Perhaps the biggest challenge comes from the influence of modifiers on phrasing.

4. Examples where prosody constrains syntax (but not necessarily governs it):
   Constraints on word orders (adjacency), but also under syntactic phenomena like agreement, pro-drop,and morphological phenomena like impoverishment

   - Bobaljik & Wurmbrand (2005)
     An argument that extraposition (to VP) is constrained by prosody but not governed by prosody. Restrictions on the possible extraposition sites is determined by prosody: extraposition cannot target VPs within a verb cluster for prosodic reasons, nothing goes wrong syntactically.
   - Feng (2003)
     Another example where prosody/stress assignment functions as a filter for possible word orders
     This article discusses postverbal PPs in Mandarin Chinese and proposes that the constraints on postverbal PPs are not syntactic per se, but prosodic in character. It is shown that the NSR (Nuclear Stress Rule), formulated in terms of government, is responsible for the grammaticality of postverbal PPs in Mandarin Chinese.

- Ackema & Neeleman (2003)
  A proposal that deals with allomorphy/impoverisishment of agreement features in Dutch Arabic and shows that conditions on adjacency need not be stated in syntactic terms but rather can be stated more profitably in prosodic terms; w.r.t. Arabic an alternative to account for why we get full agreement only when the subject fronts, but not under VSO; also used to handle cliticization, also something on wanna-contraction, pro-drop in Celtic and Arabic
- Ackema & Neeleman (2004)
  Extend the logic of the previous paper to complementizer agreement, that-trace effects, case assignment

5. Movement operations that governed by prosody
   These are cases where particular word order options cannot have been generated by syntax (according to the authors) because they violate syntactic principles (locality constraints);

   - Bennett et al. (2016)
     This article analyzes mismatches between syntactic and prosodic constituency in Irish and attempts to understand those mismatches in terms of recent proposals about the nature of the syntax-prosody interface. It argues in particular that such mismatches are best understood in terms of Selkirk's (2011) Match Theory, working in concert with constraints concerned with rhythm and phonological balance. An apparently anomalous rightward movement that seems to target certain pronouns and shift them rightward is shown to be fundamentally a phonological process: a prosodic response to a prosodic dilemma. The article thereby adds to a growing body of evidence for the role of phonological factors in shaping constituent order.
   - Agbayani & Golston (2016)
     We document a fronting process in Latin that is difficult to model as syntactic movement but fairly easy to model as phonological movement. Movement with similar properties has been observed elsewhere in Classical Greek, Russian, Irish and Japanese; we suggest that the Latin movement takes place in the phonological component of the grammar, following the mapping from syntactic to prosodic structure.

6. The nature of the prosodic system shapes syntactic parameters, viz., the presence/absence of overt syntactic movement
   Perhaps the most radical claim: prosodic properties of a language determine whether a language has overt wh-movement or wh-in-situ, whether it has EPP-driven movement to the subject position or not. Instead of reading two chapters, one would also focus on one, perhaps wh-movement, and read the Japanese paper you reviewed in addition

   - Richards (2010)
     One could read chapter 2, which is about overt A-movement to the subject position; the claim is that the prosodic structure of verbs have a strong influence on this, i.e., A-movement takes place to rescue inflectional material in T; this is not necessary if there is a prosodic boundary within the verb (e.g., Romance)
   - Richards (2016)
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   - Kawahara et al. (to appear)
     If we want to go deeper into the wh-in-situ issue

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