How Parallel Domains Like Syntax & Phonology Intersect: Unifying the Cycle

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Traditionally, we focus on UG and input. But:

“In recent years this picture has been augmented by a third type of factor: general principles of biological/physical design. [...] For many years, the dominant view has been that syntax and phonology are fundamentally different. [...] But general principles of design may very well be active in syntax and phonology in similar ways.” (van Riemsdijk 2008:227)
Why phonology is different

- Minimalist pursuits appear to lead to the hypothesis that there is a deep asymmetry between the mapping from syntax to meaning and the mapping from syntax to sound/sign.

- Chomsky (2008): Phonology is an ‘ancillary’ module “doing the best it can to satisfy the problem it faces: to map to the SM interface syntactic objects generated by computations that are ‘well-designed’ to satisfy C-I conditions” but unsuited to communicative purposes.

- Still, Minimalist re-definition of phonology & syntax makes them more commensurable
Minimalism in syntax...

- Dramatic reduction in structure (in all modules)
- Simplest assumption: Merge is the only operation of narrow syntax, and the derivational rhythm of spell-out is exploited by the interfaces
- If Merge is truly symmetrical and feature-blind ('wild-type Merge’ or ‘Merge $\alpha$’), properties (and parameters) traditionally attributed to syntax need to be outsourced to the interfaces
- Boeckx (2010b): Spell-out generates interpretive asymmetries such as
  - Agreement (valuation)
  - Copy deletion
  - Linearization
  - Labeling; featural/lexical insertion
  - Stress assignment; prosodic phrasing...
Samuels (2009), following tradition since Chomsky et al. (1956): phonology is cyclic; this is the *direct consequence* of cyclicity (=phases) in syntax. This is the “best-case scenario” (Chomsky 2004:107):

“Assume that all three components [syntax, semantics, & phonology] are cyclic, a very natural optimality requirement and fairly conventional. [...] In the best case, there is a single cycle only.”

Across modules: neural communication via phase coupling/locking

Simplest theory will have exact correspondence between domains: no restructuring, no building of prosodic constituents post-syntactically

Instead, cyclicity of derivation yields emergent structure (consonant with Vergnaud 2003 notion of ‘clock’).
Marvin (2002:74): “If we think of levels in the lexicon as levels of syntactic attachment of affixes, we can actually say that Lexical Phonology suggests that phonological rules are limited by syntactic domains, possibly phases.”

- Phase Impenetrability Condition $\Rightarrow$ locality in morphology & phonology
- Cross-modular responsibility obviates many criticisms of LPM
- Strong claim: morpheme-level phases replace LPM’s hierarchy of strata; clause-level phases replace the prosodic hierarchy
Phases at the interface

At the morpheme level (semantically, morphologically, phonologically):

\[ \delta P \]
\[ \overset{\delta}{\gamma}P \]
\[ \gamma \beta P \]
\[ \beta \alpha \]

1. Merge (\(\beta, \alpha\)): \(\alpha\) accessible to \(\beta\).
2. Merge (\(\gamma, \beta P\)): \(\beta\) accessible to \(\gamma\). \(\alpha\) opaque.
3. Merge (\(\delta, \gamma P\)): \(\gamma\) accessible to \(\delta\). \(\beta P\) opaque.
Phases at the interface

Meter vs. metric vs. metering

Locality restrictions also constrain allomorph choice:
laugh-ter, marri-age, destruc-tion vs. laughing, marrying, destroying
Morpheme-level phase domains are relevant for

- Semantic interpretation (Marantz 2001, Embick 2010)
- Allomorphy & suppletion (Embick 2010)
- Stress placement within words (Marvin 2002, Newell 2008)
- Lexical rule application (Pak 2008)

**Prediction**: If no derivational morphology, then no lexical phonology. This appears to be borne out by Al-Sayyid Bedouin SL (Sandler 2008)
Phases at the interface

But at the clause level (phonologically):

- CP is a domain, subject DP is a domain, VP is a domain
- Adjuncts and moved phrases are domains cross-linguistically
I-phrase (= clause-level phase) domains are marked in several ways:

- Nuclear stress assignment (Kahnemuyipour 2004)
- Post-lexical segmental rules (Seidl 2001)
- Tone sandhi rules & boundary tones
- Clitic placement
- Viability of null-C clauses (An 2007a,b)

How can these domains be reconciled with the phase system?
Seidl (2001), Dobashi (2003) give up on direct correspondence...

- **Ewe**: (S)(V)(O)
  - If O is non-branching: (S)(OV)
- **Italian**: (S)(V)(O)
  - If O is non-branching: (S)(VO) or (S)(OV)
- **French**: (S)(V)(O)
  - If S is non-branching: (SV)(O)
  - If O is non-branching: (S)(OV)
  - If both arguments are non-branching: (SOV)

Relevant parameters: raised position of subject; raised position of object

Striking uniformity - don’t give up yet!
Narita (2011): a Minimalist solution
If no feature percolation, then no XP-XP merger

- Reconciles Uriagereka (1999) command units with phases
- Complex left-branches and phrasal adjuncts phrased separately
- Syntactic account of relevance of branchingness
- Alternative: Boeckx (2010a) transitive vs. intransitive phases
Conclusions

- Given a very minimal(ist) syntax, cyclic spell-out regulates presentation of objects to the interfaces. Phonological cyclicity is parasitic on this property.
- Holding only to Merge and cyclic spell-out, plus direct correspondence of syntactic and phonological domains, makes desirable predictions
- Structure emerges at the interface, rather than being built or modified.

Thank you!

Slides, references, & related material:
http://ling.umd.edu/~bridget


