Magnetic Grammar

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What Phonology and Syntax Have in Common

We consider it unlikely that the modules of syntax and phonology are completely separate.

Main Hypothesis:

The formal apparatus of syntax and phonology is the same, except for differences dictated by the interfaces which these modules serve.
What Phonology & Syntax (Might) Have in Common

- constituent structure / linear order
  - features
  - locality / cyclicity
The Locus of Syntactic Variation

- In Syntactic theory, there has been a lively debate about the locus of variation.

- Roughly 2 possibilities:
  - Variation is in the computational system (e.g., 'parameters')
  - The computational system is universal; variation is in the representational primitives, e.g., features of functional categories.

- Both - Chomsky Conjecture

- Bover
The Locus of Phonological Variation

- Phonologists have always empirically been interested in variation (possibly more so than syntacticians)
- Yet there is less debate on the locus of variation
- Roughly 3 positions:
  - different rule systems (Chomsky & Halle 1968)
  - parameter theory (Hayes 1995)
  - constraint ranking (Prince & Smolensky 2004)

all of these are about variation in the grammar
Towards a Uniform Theory of Variation

The only locus of variation is features:
  - in phonology: has [uvular]
  - in syntax: has [feminine]

But this can not be the only thing you have to learn how features can be combined.
Features Can Be Combined
in a language-specific way

They have properties of attraction and repulsion.

**language 1:**
\[
\begin{array}{c}
F \\
\rightarrow \\
G \\
\leftarrow \\
H
\end{array}
\]

**language 2:**
\[
\begin{array}{c}
F \\
\rightarrow \\
D \\
\leftarrow \\
H
\end{array}
\]

\((F, G, H \text{ are features})\)
Attraction and Repulsion, and Hierarchy

wh-word/phrase

Place

wh-in-situ: Q, WH (Chinese)
wh-mute: A, wh-word

Place harmony: vocalics, place

front harmony: vocalics, front
Attraction

in syntax: \{(wh-\})movement, agreement, ...

in phonology: harmony, assimilation, ...

Verb Movement

Romance: V-to-T
Germanic: V-to-C
English: V-in-situ

features

T\_o\_V
C\_o\_V
\emptyset
Verb Movement in Features

English: In the cinema, John often kisses Mary.

Romance: Au cinéma, Jean embrasse souvent M.

Germanic: In de bioscoop kust Jan Marie vaak
More Syntactic Attractions

- scrambling (in Japanese)
- negative concord
- clitic (doubling)
- ...
Attraction in Phonology

The classic example of attraction in Phonology is Vowel Harmony (Devins 2010).

<table>
<thead>
<tr>
<th>Nom.Sg</th>
<th>Gen.Sg</th>
<th>Nom.Pl</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>kız</td>
<td>kız-ın</td>
<td>kız-lar</td>
<td>'girl'</td>
</tr>
<tr>
<td>ip</td>
<td>ip-ın</td>
<td>ip-ler</td>
<td>'rope'</td>
</tr>
<tr>
<td>sap</td>
<td>sap-ın</td>
<td>sap-lar</td>
<td>'scab'</td>
</tr>
<tr>
<td>pul</td>
<td>pul-un</td>
<td>pul-ler</td>
<td>'stamp'</td>
</tr>
<tr>
<td>jüz</td>
<td>jüz-ün</td>
<td>jüz-ler</td>
<td>'face'</td>
</tr>
<tr>
<td>son</td>
<td>son-un</td>
<td>son-ler</td>
<td>'end'</td>
</tr>
<tr>
<td>höj</td>
<td>höj-ün</td>
<td>höj-ler</td>
<td>'village'</td>
</tr>
</tbody>
</table>

E.g. in Turkish languages.
Static Attraction

Phonology also provides static evidence for attraction.

E.g. in some languages, /m/ is the only nasal consonant.

Nasal, Labial
Repulsion in Syntax

(a Feature repels some other feature)

Repulsion sometimes leads to dislocation
and often to repair:

Italian:

dammì la penna

give-me the pen

*non dammi la penna  →  non dar-mi la penna
give-INF

not
OCP in Syntax

Spanish: *le lo > se lo
el se lo dice
he to him it says

Italian: *si si > a si

Mascioni Abruzzese: *li lu > li

(Manzini 2016) issu li a
he to him gives
he gives it to him

empowerishment
deletion
Repulsion in Phonology

Like in the case of attraction, phonologists' give static evidence for repulsion in inventories.

Dutch does not have voiced velars:

Velar+voice

Van 't Veer (2015) shows that inventories & acquisition thereof can be understood this way.
Development of a Consonantal Inventory
Learning Features

1. voice, labial, coronal
2. nasal, labial
3. continuant > coronal
4. nasal, continuant
5. velar, voice *nasal
6. lateral
7. rhotic

hypothesis: when a language already has features F, G and H is acquired, you posit
\[ H + F, G \]
\[ 2F, 2G \]
Later properties can be removed
OCP in Phonology

Kisundi: nà-rá-zi-bāti-rà ≠ was sewing then
1 PAST them to sew

nà-rá-bāti-rà ≠ was sewing
1 PAST to sew

H H
the domain should not be
too small (not within segment)
but also not too big.
Interaction of Features

Not all features interact; in particular, there is little interaction of syntactic & phonological features. We submit that this may also be a learning effect.
Conclusions

- The framework presented here takes ideas from syntactic theory (Chomsky-Borer) and phonology (feature structure) and combines them.

- The resulting theory can be applied to both; many issues remain but we believe this is a promising avenue.