Productivity and schematicity in constructional change

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Diachronic construction grammar

- New approach to language change
- Grammar = inventory of form-meaning pairs, aka constructions
- E.g., the way-construction

They hacked their way through the jungle.

We pushed our way into the pub.

\[
\text{NP}_x \ V \text{ Poss}_x \text{ way } \text{PP}_y
\]

‘X moves along Y by V-ing’
Diachronic construction grammar

- Constructions can be defined at any level of generality
- They can be related in a taxonomic network
Two types of change in DCxG

- **Constructionalization**: creation of a new form-meaning pair, usually from instances of existing constructions

- **Constructional change**: change in the properties of existing constructions

- Two aspects of constructional change are often discussed: productivity and schematicity
Schematicity

- The level of generality in the meaning of a construction
- Change in schematicity: a construction takes a more general/specific meaning
Schematicity

- Increase in schematicity: creation or reinforcement of a node higher up the taxonomic hierarchy of constructions
- Reinforcement = the node becomes more available for categorization

Diagram:

- Construction A
- Construction A'
- Construction A1
Productivity

- Property of a construction to be used with new lexical items (‘extensibility’, Barðdal 2008)
- ‘Extensibility’ not measurable in earlier periods
- But its implications can: diachronic variation in the range of lexical fillers that can be used in a construction

Productivity

- Productivity involves the creation of new nodes subordinate to a construction.
- Changes in productivity are measured by the lexical distribution of a construction at different points in time.

Diagram:

- V one's way PP
- Push one's way PP
- Find one's way PP
- Cut one's way PP
- Talk one's way PP
- Make one's way PP
- Split one's way PP
- Buy one's way PP
Productivity and schematicity

- Commonly thought to be interrelated
- A more schematic meaning can be applied to a wider range of situations
- Hence, more items are compatible with the schema
- Conversely, the occurrence of new types may contribute to schema extension
- If a new type is not covered by the schema, the latter can be adjusted (coercion)
Productivity and schematicity

- Schematicity = productivity?
- Can the two notions be collapsed?
- Can the distribution of a construction be used to make claims about its schematicity?

NO to all of the above!
Schematicity $\rightarrow$ productivity?

- Changes in constructional meaning do not always entail changes in productivity
- At best, schematicity defines the productivity domain, i.e., the set of items that *may* be used in the construction
- But not all of these items are necessarily attested at any given time, and they may never be
- Subject to the communicative needs of speakers
- Case in point: *spend* in the *way*-construction
Schematicity $\rightarrow$ productivity?

- First instances in the 1930s: linked to the New Deal
  - Is it true that we can spend our way to prosperity? (1935)
  - There is no recorded instance of any nation having spent its way out of a depression. (1935)
  - Such a statement stands in clear opposition to the Administration’s philosophy of spending our way into recovery. (1939)

- Spend could have been used in the construction earlier

- But it is this socio-historical context that coined it
Schematicity → productivity?

- The literature typically reports gradual expansion of the distribution of constructions.
- E.g., *a lot of / lots of* (Traugott & Trousdale 2013)
  
  *\[ a \ lot_{\text{head}} \ [ \ of \ N \ ] \ \text{‘set of } N \text{’} \rightarrow [ [ a \ lot \ of ] \ N_{\text{head}} \text{’‘many } N \text{’}]

- Constructionalization in the 18\textsuperscript{th} century

- Initially used mostly with concrete nouns

  *a lot of people / goods / land …*

- Open to abstract nouns only from the mid-19\textsuperscript{th} century

  *a lot of power / ideas / love …*
Schematicity → productivity?

- Quantifier *many a N* (Hilpert 2012, Hilpert & Perek 2015)

  *Many a sailor* has suffered from scurvy.

  *For many a day* the flowers have spread.

- Loss of types, especially in some semantic domains, e.g., body parts, emotions, ideas

- No apparent change in constructional meaning
Productivity $\rightarrow$ schematicity?

- Novel combinations are innovative if they are not covered by the schema abstracted over attested uses.
- Hence, the relevant schema is at the level of the lexical slot, NOT the entire construction.

\[ \text{Cx: } \ldots \text{Slot1} \ldots \text{Slot2} \ldots \]

- : attested type
- : new type
Productivity $\Rightarrow$ schematicity?

- If repeated, creative uses that once sounded ‘deviant’ can become conventional

`Cx: ... Slot1 ... Slot2 ...`
Productivity $\rightarrow$ schematicity?

- If repeated, creative uses that once sounded ‘deviant’ can become conventional
- This leads to increased schematicity of the lexical slot

![Diagram](cx_slot1_slot2.png)
Productivity $\rightarrow$ schematicity?

- Productivity affects the schematicity of lexical slots
- But not necessarily that of the entire construction
- This depends on how the new types relate to attested ones AND to the constructional meaning
  - Certain types require/cause adjustments in the constructional meaning, but not others
  - Constructional schematization cannot be assumed without examining this relation at the level of individual instances
The case of the *way*-construction

- Construction initially centered on physical verbs, in line with the diachronic origin (Israel 1996, from OED data)
  
  - *pave, smooth, cut*, etc. (17th century)
  - *bridge, hew, sheer, plough, dig, clear*, etc. (18th century)

- More abstract types are attested later, especially from the 19th century onwards
  
  - *smirk, spell, write* (Israel 1996), *joke, laugh, talk, bully* (Perek 2016)

- Same findings in Perek (2016) in 19th-20th AmE (COHA)

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Distributional semantic plots of verbs in the path-creation sense of the way-construction (Perek 2016)
The case of the *way*-construction

- More semantic diversity → increase in the schematicity of the verb slot
- Is there an increase in schematicity of the rest of the constructional meaning?
- Many new verb classes correspond to unusual ways to cause motion: interaction, commerce, cognition, etc.
  
  More likely to involve abstract, metaphorical motion, e.g.:

  [They talk about Uncle Paul having *bought his way into the Senate*!]
  [She] managed to *talk her way out of the ticket*.
  
  (but: [I]t took Beau more than an hour to *talk his way into the Fort Morgan brig*. → concrete)
The case of the *way*-construction

- Does the construction become more open to more diverse metaphorical motion uses?
- Pilot study restricted to the preposition *into* (1296 tokens from COHA, 1830-2009)
- Categories of abstract uses were identified in the early periods: 1830s, 1840s and 1850s (139 tokens)
- 12 categories of abstract uses in 1830-1859: how well do they cover the later periods?
<table>
<thead>
<tr>
<th>Metaphorical use</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Mind is a Container for Ideas</td>
<td>The conception of vice has hardly found its way into Ophelia's mind.</td>
</tr>
<tr>
<td>The Heart is a Container for Feelings, Emotions, etc.</td>
<td>But a silent sorrow had made its way into her bosom.</td>
</tr>
<tr>
<td>Texts are Containers for Ideas, Stories, Words, etc.</td>
<td>The anecdote has found its way into the newspapers.</td>
</tr>
<tr>
<td>A Group of People is a Container for its Members</td>
<td>He has forced his way into good society.</td>
</tr>
<tr>
<td>States are Containers</td>
<td>He fought his way into notice by a duel with one of the Rutledges.</td>
</tr>
<tr>
<td>Change of Possession</td>
<td>I’m glad the money finds its way into the pockets of the like of him.</td>
</tr>
<tr>
<td>A Whole is a Container for Parts</td>
<td>The black currant should always find its way into every garden.</td>
</tr>
<tr>
<td>Subject, Area of Expertise, etc.</td>
<td>The learned pressed their way into the field of metaphysics.</td>
</tr>
<tr>
<td>Ideas are Moving Entities</td>
<td>In 1811 this new branch of Industry made its way into France.</td>
</tr>
<tr>
<td>Sound/light/diseases are Moving Entities</td>
<td>… the brightest sunlight that ever found its way into a kitchen</td>
</tr>
</tbody>
</table>
Distribution of metaphors in the abstract uses of the way-construction

% of tokens

- group
- heart
- idea
- mind
- misc
- other
- part-whole
- possession
- state
- text

Time periods:
- 1830
- 1860
- 1890
- 1920
- 1950
- 1980
- 2010
Metaphors in the *way*-construction

- Increase in the range of situations conceptualised as motion in uses of the construction

- Some new types:
  - Language is a Container for Words, Expressions, etc.
    - Words from that quarter have *made their way into our speech*.
  - A Role, Job, Function, etc. is a Container
    - He has *[forced his way into top management positions]* at Canal-Randolph.
  - Joining an Institution is Motion
    - ... a 39-year-old New York woman who has finally *[worked her way into college]*

...
A usage-based recent history of the *way*-construction

- Increase in schematicity: the creation of new abstract uses reinforces the more schematic node
- This reinforcement in turn invites the creation of more abstract uses
Summary

- Schematicity and productivity are related
- But not the same phenomenon: they should not be collapsed, they should be kept separate
- Two types of schematicity should be distinguished: at the level of slots and at the level of the entire construction
- Productivity is directly related to the schematicity of slots
- The schematicity of constructions should not be investigated through the lexical distribution
- Rather, by examining the constructs themselves
Thanks for your attention!

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