The Causative Continuum Revisited: A multifactorial analysis of causative constructions in European languages

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Outline

1. The Causative Continuum and iconicity
2. Testing iconicity: a probabilistic space of causatives in 12 European languages
3. Frequency vs. iconicity: a case study of causatives in British English
4. Conclusions
Causative situations

*The strong wind caused the tree to fall.*

Causing event

Caused (effected) event
Some Causative Constructions

Complex clauses

Analytic causatives

Morphological causatives

Lexical causatives

Syntactic integration of causing and caused events
Some Causative Constructions

- *His parents made it so that he went to the concert.*

<table>
<thead>
<tr>
<th>Complex clauses</th>
<th>Analytic causatives</th>
<th>Morphological causatives</th>
<th>Lexical causatives</th>
</tr>
</thead>
</table>

Syntactic integration of causing and caused events
Some Causative Constructions

- *His parents made him go to the concert.*
Some Causative Constructions

- Japanese:
  
  \textit{ik-ase-ta}

  \textit{go-CAUSE-PAST}

  “made go”

Syntactic integration of causing and caused events

- Complex clauses
- Analytic causatives
- Morphological causatives
- Lexical causatives
Some Causative Constructions

- *His parents sent him to the concert.*

Syntactic integration of causing and caused events

- Complex clauses
- Analytic causatives
- Morphological causatives
- Lexical causatives
## Iconicity

<table>
<thead>
<tr>
<th>Study</th>
<th>Less integrated/compact causative</th>
<th>More integrated/compact causative</th>
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<tbody>
<tr>
<td>Givón (1980)</td>
<td>Lower degree of semantic binding between 2 events</td>
<td>Higher degree of semantic binding between 2 events</td>
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</table>
| Comrie (1981; 1989) | Indirect causation  
                           Higher control of Causee                                            | Direct causation  
                           Lower control of Causee                                             |
| Haiman (1983; 1985) | Greater conceptual distance between Cause and Result                | Smaller conceptual distance between Cause and Result                 |
| Givón (1990)   | Human-Agentive Manipulee                                            | Inanimate Manipulee                                                  |
Some problems

- Based on selected examples, not supported statistically
- Conceptual cohesion (directness, binding, etc.) is a very evasive semantic notion, which is difficult to operationalize with the help of objective criteria.
A methodological proposal

• Create a probabilistic semantic map based on tokens of causative constructions in different languages (cf. Wälchli & Cysouw 2012)
• Plot the language-specific causative constructions onto this map and explore the form-meaning mappings in the languages.
PROBABILISTIC SPACE OF EUROPEAN CAUSATIVES
Multilingual corpus of subtitles
For always evil will look to find a foothold in this world.

Not good. Not good at all.

Oh, no. Sebastian.

Good gracious.

Come on.
Data set (1)

- all contexts with analytic causatives in every language from the set
- random samples of equal size to extract lexical causatives from each film
Frequencies of periphrastic causatives

- **FR** - Romance
- **IT** - Romance
- **ES** - Romance
- **PT** - Romance
- **RO** - Romance
- **EN** - Germanic
- **NL** - Germanic
- **DE** - Germanic
- **SV** - Slavic
- **CZ** - Slavic
- **PL** - Slavic
- **SL** - Slavic
Frequencies of lexical causatives

- Romance
- Germanic
- Slavic

FR | IT | ES | PT | RO | EN | NL | DE | SV | CZ | PL | SL

0  | 40 | 20 | 10 | 70 | 90 | 80 | 60 | 90 | 80 | 70 | 50
Data set (2)

- 508 parallel multilingual contexts (Jörg Tiedemann’s alignment software subalign)
- Every context is coded for fine-grained Cx types
Fine-grained constructional types

- ACs with various auxiliaries (e.g. *lassen* + V, *fazer* + V)
- Lexical causatives (transitives and ditransitives)
- Causative verb + Clause (e.g. *dejar* + *que*)
- Causal prepositions (*because of*)
- Causal and resultative subordinate clauses
- Resultative cxs, e.g. *make* + Adj
- Modals
- Particles (*niech* in Polish)
- Reflexives
- Insubordination (*que* + Subj)
- ...
Matrix

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</tbody>
</table>
Gower’s Distances

Situation (row) A
EN: And we make them do it... ...or we kill them. make_V
IT: E glielo facciamo fare ... o lo uccidiamo. fare_V
CZ: Donutíme je to udělat, nebo je zabijeme. donutilit_V

Situation (row) B
EN: Pick up someone my height and build and make them believe it is me. make_V
IT: Individua una della mia corporatura e fa credere loro che sia io. fare_V
CZ: Vyber někoho, kdo je mi podobný a přesvědč je, že jsem to já. Trans

Distance (A, B) = 1 – 2/3 ≈ 0.33
Statistical analysis

- Multidimensional Scaling of the distance matrix.
Statistical analysis

• Multidimensional Scaling of the distance matrix.
• The main principle: the closer two points on the map, the more overlapping constructions they share across the languages. From the isomorphism principle it follows that the corresponding situations are more semantically similar (on average), since more authors of the doculects chose identical constructions to represent these causative situations.
Statistical analysis

• Multidimensional Scaling of the distance matrix.
• The main principle: the closer two points on the map, the more overlapping constructions they share across the languages. From the isomorphism principle it follows that the corresponding situations are more semantically similar (on average), since more authors of the doculects chose identical constructions to represent these causative situations.
• The result is a probabilistic semantic map (Wälchli & Cysouw 2012).
Romance

French

Italian

Spanish

Portuguese

Romanian

Lexical
Analytic
Germanic
Slavic
Interim conclusions

• Across the languages, **lexical** causatives typically express direct (volitional) causation, which involves an active Causer and a passive Causee.
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• **Analytic** causatives typically express letting (especially permission and non-impingement), which involves a high degree of Causee’s autonomy and a relatively passive Causer.
Interim conclusions

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• **Analytic** causatives typically express letting (especially permission and non-impingement), which involves a high degree of Causee’s autonomy and a relatively passive Causer.

• In spite of much variation, the most typical uses of lexical and analytic causatives correspond to the uses that one could predict on the basis of the iconicity hypothesis, although the making/letting distinction is a special “shade” of (in)directness.
FREQUENCY VS. ICONICITY
Frequency vs. iconicity

- Haspelmath (2008) suggests an alternative explanation: causatives representing indirect causation are longer than causatives that denote direct causation because the former are less frequent than the latter (Economy principle). No resort to iconicity is necessary.
Frequency and economy

Kanzler (m) – Kanzlerin (f)

widow (f) – widower (m)
Data

- BNC XML edition
- Parsed by Stanford Parser
- 264 analytic causatives with auxiliaries MAKE, HAVE, CAUSE and almost 130K lexical causatives (transitives) that represent the following pairs:
Alternating pairs

- CAUSE + boil (intr.)/boil (tr.)
- CAUSE + break (intr.)/break (tr.)
- CAUSE + burn (intr.)/burn (tr.)
- CAUSE + change (intr.)/change (tr.)
- CAUSE + close (intr.)/close (tr.)
- CAUSE + connect (intr.)/connect (tr.)
- CAUSE + develop (intr.)/develop (tr.)
- CAUSE + dissolve (intr.)/dissolve (tr.)
- CAUSE + dry (intr.)/dry (tr.)
- CAUSE + fill (intr.)/fill (tr.)
- CAUSE + freeze (intr.)/freeze (tr.)
- CAUSE + gather (intr.)/gather (tr.)
- CAUSE + improve (intr.)/improve (tr.)
- CAUSE + die (intr.)/kill (tr.)
- CAUSE + melt (intr.)/melt (tr.)
- CAUSE + open (intr.)/open (tr.)
- CAUSE + rise (intr.)/raise (tr.)
- CAUSE + rock (intr.)/rock (tr.)
- CAUSE + roll (intr.)/roll (tr.)
- CAUSE + sink (intr.)/sink (tr.)
- CAUSE + split (intr.)/split (tr.)
- CAUSE + spread (intr.)/spread (tr.)
- CAUSE + stop (intr.)/stop (tr.)
- CAUSE + learn (intr.)/teach (tr.)
- CAUSE + turn (intr.)/turn (tr.)

Based on pairs of verbs from Haspelmath (1993)
# Analytic/Lexical ratio in BNC

<table>
<thead>
<tr>
<th>PAIR</th>
<th>ANALYTIC</th>
<th>LEXICAL</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUSE melt (intr.) /melt (tr.)</td>
<td>6</td>
<td>321</td>
<td>0.019</td>
</tr>
<tr>
<td>CAUSE sink (intr.) /sink (tr.)</td>
<td>7</td>
<td>488</td>
<td>0.014</td>
</tr>
<tr>
<td>CAUSE boil (intr.) /boil(tr.)</td>
<td>4</td>
<td>339</td>
<td>0.012</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>CAUSE open (intr.) /open (tr.)</td>
<td>7</td>
<td>10568</td>
<td>0.0007</td>
</tr>
<tr>
<td>CAUSE gather(intr.) /gather (tr.)</td>
<td>1</td>
<td>1754</td>
<td>0.0006</td>
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<tr>
<td>CAUSE improve (intr.) /improve (tr.)</td>
<td>2</td>
<td>7221</td>
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</table>
Correlation with AC ratio (Haspelmath 1993)
Interpretation

• The frequency differences in Analytical/Lexical ratios between the pairs correspond to the degree of spontaneity and autonomy of the caused event and of the direct intervention on the part of the Causer.
Interpretation

• The frequency differences in Analytical/Lexical ratios between the pairs correspond to the degree of spontaneity and autonomy of the caused event and of the direct intervention on the part of the Causer.

• This correlation seems to support the iconicity account.
CONCLUSIONS
Conclusions

• The iconicity factor constrains the use of causative constructions in 12 European languages in terms of directness and indirectness of causation expressed most prominently as ‘making’ and ‘letting’.
Conclusions

• The iconicity factor constrains the use of causative constructions in 12 European languages in terms of directness and indirectness of causation expressed most prominently as ‘making’ and ‘letting’.

• The relative frequencies of analytic vs. lexical causatives in the BNC correlate with the degree of the autonomy of the caused event. Although further research is needed to disentangle economy factors related to length, on the one hand, and the role of iconicity in terms of conceptual cohesion, on the other hand, it seems that these factors do not exclude each other.
### Mixed logistic model

<table>
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<td>CrSem = Inanim</td>
<td>2.655</td>
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<td>CeSem = Inanim</td>
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<td>CeControl=Yes</td>
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<td>0.003**</td>
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<tr>
<td>Polarity = Neg</td>
<td>-1.386</td>
<td>0.018*</td>
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Coref: n.s.

C = 0.903
Discussion

• A supporting argument: the pairs with high Analytical-Lexical ratios reflect more ‘spontaneous’ events (based on cross-linguistic similarities in causative and anticausative alternations in Haspelmath 1993).
Data set

- All instances of analytic causatives with the intransitive verbs (264 obs.)
- An equal random sample of lexical causatives
Variables

- **CrSem**: semantics of the Causer (animate, inanimate, undef.)
- **CeSem**: semantics of the Causee (animate or inanimate)
- **Coref**: coreferentiality between the Causer and other participants (yes or no)
- **Possess**: marked possession relationships between the Causer and other participants (yes or no)
- **Polarity**: positive or negative
- **CeControl**: whether the Causee acts agentively (yes, no, undef.)
- **Ratio**: the log-transformed Analytic/Lexical ratio for every pair
- **Pair**: random effects
Mixed logistic model: fixed main effects

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*Coref*: n.s.  
C = 0.9
ROMANCE

$C > 0.77$
GERMANIC & CZECH

C > 0.89