The “Belgian Tetris”: Assessing the political impact of metaphors on citizens’ perception of Belgian federalism

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Introduction

• Interdisciplinary project
  – Linguistics & political science
  – Metaphors in political discourse
    • Context: Belgian federalism
    – Use of metaphors
      • Citizen data
      – Impact of metaphors?

The political impact of metaphors?

• Key question
  • But the political impact of metaphors is often a no-question:
    – Linguists assume a political impact of metaphors
      • Conceptual Metaphor Theory
        – Fundamental role of metaphors in our perception and comprehension of the world
        – Models explaining how metaphors can frame political issues and shape the perception and comprehension of these issues by the public opinion (strict father vs. nurturer parent)
      • Critical discourse analysis
        – Metaphors = important rhetorical tools
          + Especially in political discourse

 « In political contexts metaphor can be, and often is, used for ideological purposes because it activates unconscious emotional associations and thereby contributes to myth creation: politicians use metaphors to tell the right story»
 « Rhetorically, metaphors contribute to mental representations of political issues, making alternative ways of understanding these issues more difficult and in so doing ‘occupy’ the mind »
 (Chattreris-Black, 2011 : 28)

The political impact of metaphors?

• Key question
  • But the political impact of metaphors is often a no-question:
    – Linguists assume a political impact of metaphors
    – Political scientists do not really look at metaphors

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• Why do we use metaphors in political discourse?
• What effect(s) do they have?
Le Belgian Tetris

From 1831 to 1970, Belgium came down to the central state, the provinces and the municipalities. Except for the prerogatives attributed to the local authorities, the State was taking care of everything. In 1970, the constituent power created new institutions: communities and regions. And every state reform has been the occasion to take competences from the state (from there on called the federal state) to attribute them to federal authorities. This is the big Belgian Tetris, where we see the upper floor that is falling apart (decomposing), block by block, at the benefit of other authorities. In certain cases, the legislator is transferring homogeneous blocks (like education, attributed to the communities in 1989). In other cases, it is only transferring some elements of a competence (it’s the case of tax system: the federal state remains competent but assigned certain prerogatives to the federal entities). From now on, we therefore make a distinction between three types of competences. The ones that are exclusively exercised by the federal state (like Defense, for example). The ones that are exclusively exercised by the Regions and Communities (Education, Town planning, Public works, and so on). An the ones for which each power has a possibility of intervention. In the domain of employment, for instance, the (federal) State is competent for certain domains (unemployment legislation, for instance) and the Regions are competent for other ones (training courses of unemployed people).
**Participants**

- 1st y. French-speaking bachelor students
- Modern Languages + social and political sciences
- Pre-test: N = 623 (but some incompletes)
- Post-test: N = 320 (but some incompletes)

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>493</td>
<td>300</td>
</tr>
<tr>
<td><strong>%</strong></td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Full condition</td>
<td>126</td>
<td>25.6</td>
</tr>
<tr>
<td>Image condition</td>
<td>114</td>
<td>23.1</td>
</tr>
<tr>
<td>Text condition</td>
<td>159</td>
<td>31.9</td>
</tr>
</tbody>
</table>

**Results**

- Free description task
  - Linguistic analysis
  - Political science analysis
- Image association analysis

**XP design**

- Central questions
  - Does the Tetris metaphor have an impact on the representations of Belgian federalism by the citizens?
  - If it does, what type of impact?
- Independent variables
  - 4 xp conditions (various degrees of exposure to input material)
  - Pre-test – post-test
- Dependent variables
  - Representation of Belgian federalism
    - Description task
    - Image association
  - Attitude towards Belgian federalism
    - Statements on a Likert-scale

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Results

• Free description task
  – Linguistic analysis
  – Political science analysis
• Image association analysis

Results

• General harvest
  – Level of political knowledge
  – Length of the description task
  – Lexical influence of the input text
• Image association analysis
• Linguistic analysis
• Political science analysis

General harvest – Political knowledge

• 5 general questions about politics
• One-way ANOVA:
  – DV = score of political knowledge
  – IV = experimental condition
  – No statistically significant differences between the groups: \( F(3,47) = .411, \ p = .745 \)

<table>
<thead>
<tr>
<th>Level of political knowledge</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control condition</td>
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<td>1.24</td>
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<td>5.00</td>
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<tr>
<td>Full condition</td>
<td>2.95</td>
<td>1.22</td>
<td>0.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Image condition</td>
<td>2.99</td>
<td>1.31</td>
<td>0.00</td>
<td>5.00</td>
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<tr>
<td>Text condition</td>
<td>2.81</td>
<td>1.21</td>
<td>0.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Total</td>
<td>2.92</td>
<td>1.24</td>
<td>0.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

General harvest – Free description task (pre-test)

• Mean length (in terms of number of words)
  Linear trend: no input < visual input < textual input < visual and textual input
• One-way ANOVA:
  – Statistically significant differences between the groups: \( F(3,486) = 3.652, \ p < .05 \)

<table>
<thead>
<tr>
<th>Mean length of the descriptions (in words)</th>
<th>Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean score</td>
<td>SD</td>
</tr>
<tr>
<td>Control condition</td>
<td>41.7</td>
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<tr>
<td>Full condition</td>
<td>50.2</td>
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<tr>
<td>Image condition</td>
<td>43.4</td>
</tr>
<tr>
<td>Text condition</td>
<td>47.7</td>
</tr>
<tr>
<td>Total</td>
<td>45.8</td>
</tr>
</tbody>
</table>

(1) Level of political knowledge

(2) Length of descriptions (pre-test)
General harvest – Free description task (post-test)

- No effect anymore between groups
  - One-way ANOVA: ($F_{(3,295)}=.346$, $p=.792$)
- Mean length decreases
  - Effect is globally significant: ($t_{(1,299)}=7.833$, $p<.0001$)
  - Paired t-test: indicate this decreasing tendency is significant for all the conditions as well

<table>
<thead>
<tr>
<th>Mean length of the descriptions (N words)</th>
<th>Post-test</th>
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</thead>
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<tr>
<td>Control condition</td>
<td>37.4</td>
</tr>
<tr>
<td>Full condition</td>
<td>39.4</td>
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<tr>
<td>Image condition</td>
<td>36.1</td>
</tr>
<tr>
<td>Test condition</td>
<td>37.1</td>
</tr>
<tr>
<td>Total</td>
<td>37.8</td>
</tr>
</tbody>
</table>

(2) Length of descriptions (pre+post)

General harvest – Lexical influence (pre-test)

- Lexical overlap between the experimental text and the free descriptions
  - N. of similar lexical items / Total N. of words
- One-way ANOVA:
  - Statistically significant differences between the groups: ($F_{(3,489)}=6.502$, $p<.001$)

<table>
<thead>
<tr>
<th>Lexical influence of the input text on the free description task (Pre-test)</th>
<th>Mean score</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control condition</td>
<td>19</td>
<td>.14</td>
<td>0</td>
<td>76</td>
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<tr>
<td>Full condition</td>
<td>23</td>
<td>.12</td>
<td>0</td>
<td>87</td>
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<tr>
<td>Image condition</td>
<td>20</td>
<td>.13</td>
<td>0</td>
<td>71</td>
</tr>
<tr>
<td>Test condition</td>
<td>25</td>
<td>.12</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>.13</td>
<td>0</td>
<td>78</td>
</tr>
</tbody>
</table>

(3) Lexical influence of the input (pre)

General harvest – Lexical influence (post-test)

- Lexical influence of the text disappears in the post-test
- One-way ANOVA:
  - No statistically significant differences between the group anymore: ($F_{(3,295)}=.922$, $p=.430$)

<table>
<thead>
<tr>
<th>Lexical influence of the input text on the free description task (Post-test)</th>
<th>Mean score</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control condition</td>
<td>21</td>
<td>.15</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
<td>Full condition</td>
<td>24</td>
<td>.14</td>
<td>0</td>
<td>86</td>
</tr>
<tr>
<td>Image condition</td>
<td>25</td>
<td>.19</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>Test condition</td>
<td>25</td>
<td>.16</td>
<td>0</td>
<td>88</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>.16</td>
<td>0</td>
<td>88</td>
</tr>
</tbody>
</table>

(4) Lexical influence of the input (pre+post)
Results

- Free description task
  - Linguistic analysis
  - Political science analysis
- Image association analysis

Linguistic analysis

- Linguistic analysis of the description task
  - To what extent do the participants talk differently about Belgian federalism when having been exposed to the input material?

Linguistic analysis

- Deconstructing the Tetris
  - Tetris is a game
  - Tetris is a puzzle game // complexity of the system
  - Tetris includes levels (// federal entities) and blocks (// competences) moving between the different levels => construction domain
    • Construction of the lower level
    • Deconstruction of the upper level

Linguistic analysis

- Deconstructing the Tetris?
- Small-scale experiment to verify these implications among 86 citizens
- Opinion on 8 statements (Likert-scale)

(1) Belgian federalism is like a Tetris game, it’s a building including different levels (=different state entities);
(2) Belgian federalism is like a Tetris game, the federal entities are constructed step by step.
(3) Belgian federalism is like a Tetris game, it’s constructed by moving blocks (=competences) from one level to the other.
(4) Belgian federalism is like a Tetris game, each block has to find its right place.
(5) Belgian federalism is like a Tetris game, the construction of the lower level implies the deconstruction of the higher level.
(6) Belgian federalism is like a Tetris game, it’s a competition between different players (=state entities)
(7) Belgian federalism is like a Tetris game, it’s a game you can’t win.
(8) Belgian federalism is like a Tetris game, it’s a complex system requesting a lot of thinking to work properly.
Belgian federalism is like a Tetris game.

1. It’s a building including different levels (different state entities).
2. It’s constructed step by step.
3. It’s constructed by moving blocks (competences) from one level to the other.
4. It’s constructed by moving blocks (competences) from one level to the other.
5. It’s constructed by moving blocks (competences) from one level to the other.
6. It’s constructed by moving blocks (competences) from one level to the other.
7. It’s a competition between different players (state entities).
8. It’s a complex system requesting a lot of thinking to work properly.

Deconstructing the Tetris

Linguistic analysis

- Deconstructing the Tetris
  - Low probability that the citizens highlight the game dimension of the Tetris metaphor
  - Higher probability that people make sense of it in terms of complexity or construction

Linguistic analysis

- 8 corpora
  - Keyword analysis
  - Domain analysis

<table>
<thead>
<tr>
<th>Proced</th>
<th>Pretest</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control condition</td>
<td>6,434 words</td>
<td>3,247 words</td>
</tr>
<tr>
<td>Full condition</td>
<td>6,434 words</td>
<td>2,242 words</td>
</tr>
<tr>
<td>Online instruction</td>
<td>6,434 words</td>
<td>2,242 words</td>
</tr>
<tr>
<td>Test condition</td>
<td>6,434 words</td>
<td>2,242 words</td>
</tr>
</tbody>
</table>
Keyword analysis (pre-test)

Keyword analysis (pre-test)

* p < .05, ** p < .01; *** p < .001

Keyword analysis

• Control condition
  – System, Belgium, government, country
• Experimental conditions
  – Competences, domains
  – Text & full conditions
    • State, region, communities, federal, Tetris

Keyword analysis (pre-test)

Keyword analysis (pre-test)

* p < .05, ** p < .01; *** p < .001

Keyword analysis (post-test)

Keyword analysis (post-test)

* p < .05, ** p < .01; *** p < .001

Linguistic analysis

• Keyword analysis
• Domain analysis

Linguistic analysis

• Domain analysis
  – Different framing of the descriptions?
  – Deconstructing the Tetris
    • Tetris is a game
    • Tetris is a puzzle game // complexity of the system
    • Tetris includes levels // federal entities and blocks // competences) moving between the different levels => construction domain
      – Construction of the lower level
      – Deconstruction of the upper level
Linguistic analysis

• Domain analysis
  – Different framing of the descriptions?
  – Defining onomasiological profiles of 5 domains related to the Tetris metaphor (Uniteq)
    • Game domain
    • Complexity domain
    • Construction domain
    • Deconstruction domain
    • Transfer domain

Onomasiological profiles

• Game domain
  – Tetris, puzzle, labyrinth, rule, tactic, match, competition, winner, loser, win, lose, participant, play, game,…
• Complexity domain
  – Complex, difficulty, puzzle, brain-teaser, reflection…
• Construction domain
  – Building, level, block, foundation, structure,…
• Deconstruction domain
  – Deconstruction, destruction, dividing, demolition, cutting-up,…
• Transfer domain
  – Passing, transition, repartition, going from … to …,…

Domain analysis (pre)

• Linguistic analysis of the description task
  – To what extent do the participants talk differently about Belgian federalism when having been exposed to the input material?
  – They do!
    • In the pre-test condition
      – Full condition & textual condition
      – Different words
      – Different framing domains
      – No impact of the image condition
    • Not in the post-test condition
      – Except for the construction domain (full condition)
Polic0cal	
  science	
  analysis

Free
descrip0on
task

• What we know about metaphors in citizens’ discourses about Belgian federalism:
  – Love relationship & Crazy machine

• Free description task: “In ten lines and in your own words, we invite you to describe the Belgian federalism”

• Each response was coded according to 32 variables, grouped along six dimensions:
  – History, institutions, identities, languages, organization, nature of the federal

Political science analysis
Free description task

• Finding: from an identity-loaded perspective to an institutions-based account

• Need to check whether this is not a general pattern, regardless of the groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference to COMMUNITY</td>
<td>0.742</td>
<td></td>
</tr>
<tr>
<td>Reference to REGION</td>
<td>0.739</td>
<td></td>
</tr>
<tr>
<td>Reference to FEDERATION</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Reference to PROVINCE</td>
<td>0.877</td>
<td></td>
</tr>
<tr>
<td>Reference to BRUSSELS</td>
<td>0.732</td>
<td></td>
</tr>
<tr>
<td>Reference to DUTCH-SPEAKING</td>
<td>0.699</td>
<td></td>
</tr>
<tr>
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<td>0.743</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Factor Analysis

Factor 1 | 0.51

Political science analysis
Free description task (post-test)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Q1 (Control group)</th>
<th>Q2 (Image+Test)</th>
<th>Q3 (Image only)</th>
<th>Q4 (Test only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference to PROVINCE/COMMUNE</td>
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<td>12.6%</td>
<td>9.2%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Reference to FLA</td>
<td>14.0%</td>
<td>6.7%</td>
<td>3.7%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Reference to WALLON</td>
<td>13.3%</td>
<td>5.0%</td>
<td>3.7%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Centrifugal nature</td>
<td>16.4%</td>
<td>7.6%</td>
<td>11.0%</td>
<td>21.6%</td>
</tr>
</tbody>
</table>

Political science analysis
Free description task – factor analysis

• Finding: from an identity-loaded perspective to an institutions-based account

• Need to check whether this is not a general pattern, regardless of the groups

<table>
<thead>
<tr>
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<td>0.743</td>
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</table>

Extraction Method: Principal Factor Analysis

Factor 1 | 0.51

Political science analysis
Free description task – regression analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Linear regression predicting Factor 1 (pre-test)</th>
<th>Linear regression predicting Factor 2 (pre-test)</th>
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<tbody>
<tr>
<td>A</td>
<td>Std Err</td>
<td>t</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.054</td>
<td>0.177</td>
</tr>
<tr>
<td>Man</td>
<td>-0.246</td>
<td>0.076</td>
</tr>
<tr>
<td>Political interest</td>
<td>0.038</td>
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<tr>
<td>Q2</td>
<td>0.215</td>
<td>0.060</td>
</tr>
<tr>
<td>Q3</td>
<td>0.751</td>
<td>0.106</td>
</tr>
</tbody>
</table>

Note: N = 492, **p<0.01, ***p<0.001
Political science analysis
Preferred distribution of powers

- Key issue of Belgian federalism: the extent of the autonomy of the R. & C.
- DV = scale from 0 to 10, where '0' = all powers to the R. & C. and '10' = all powers to the federal Authority

Discussion

- Do metaphors have an impact?
  - On the way people frame Belgian federalism
  - On perception (picture task + description task)
  - On opinion (question on autonomy)

Results

- Free description task
  - Linguistic analysis
  - Political science analysis
- Image association analysis

Images analysis – Set-up

Images analysis – Pre-test
Conclusions

- Subjects who were submitted to the textual stimulus (full and text conditions) tend to behave similarly
  - Description task
  - Picture association task
- Subjects who were submitted to the visual stimulus (image condition) and subjects from the control condition tend to behave similarly
- **=> No impact of the image**
- **=> Impact of the text**

(4) Lexical influence of the input (pre+post)

Conclusions

- **=> No impact of the image**
- **=> Impact of the text**
  - Short-term impact
    - (Except for the construction domain)
Discussion

• Central question
  
  (1) Does the Tetris metaphor have an impact on the representations of Belgian federalism by the citizens?
  
• Results for the image condition tend to suggest there is no direct impact of the Tetris metaphor on the representations of the participants
  
• However, reading the text appears to have an impact on the representations of the participants, which might suggest an indirect impact of the metaphor.
  
  — To what extent does the Tetris metaphor contribute to a better integration of the textual information into the participants’ mental representation of the text?

• Impact of the Tetris metaphor on the integration of textual information?
  
  • Tetris metaphor = creative metaphor
  
  • No conceptual frame available
  
  • « Encyclopaedic knowledge has to be ‘searched’ for the hearer to construct a relevant meaning » (Zinken 2007)
  
  • Process of meaning construction might in turn positively influence the construction of the mental representation of the text (at the level of the textbase)
  
  — Communicative function of metaphor
  
  • The use of such a metaphor to frame such political issues might help the reader to understand complex political issues in a given communication context, but do not have an impact on the long-term cognitive representation of the target domain

Discussion

• Long-term impact?
  
  • Interesting increase of the construction domain in the recall of the participants from the full condition (text + image)
    
    — Selection of the image
    
    — Onomasiological profile (linguistic analysis)
  
  • Tetris metaphor might feed the conceptual metaphor
  
  POLITICAL SYSTEMS ARE BUILDINGS

THANK YOU FOR YOUR ATTENTION

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