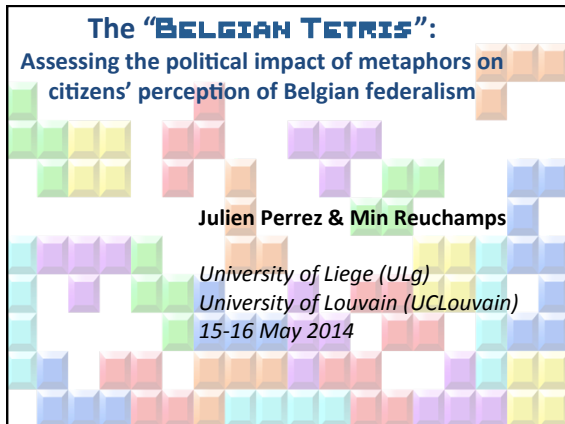


**The “BELGIAN TETRIS”:**  
Assessing the political impact of metaphors on  
citizens’ perception of Belgian federalism



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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?

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## 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 >> nurturant parent).
    - Critical discourse analysis
      - Metaphors = important rhetorical tools
        - » Especially in political discourse

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« 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 »

(Charteris-Black, 2011 : 28)

## The political impact of metaphors?

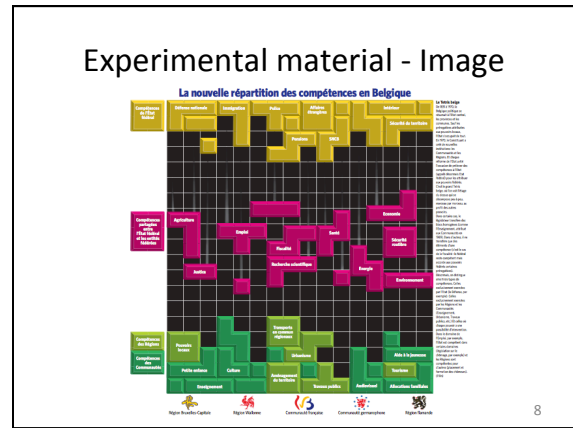
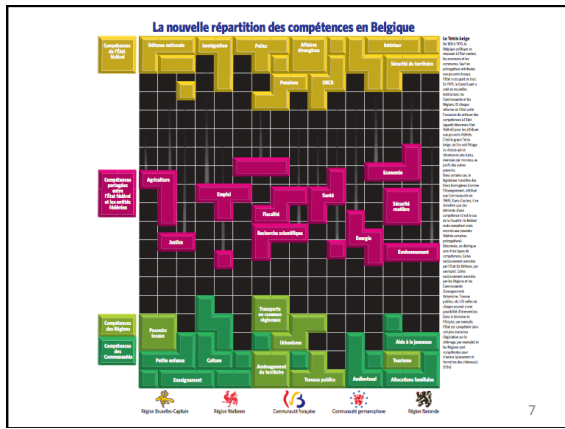
- Key question
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  - Political scientists do not really look at metaphors

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## 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
- Why do we use metaphors in political discourse?
- What effect(s) do they have?

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### Experimental material - Text

#### Le Tetris belge

De 1831 à 1970, la Belgique politique se résumait à l'Etat central, les provinces et les communes. Sauf les prérogatives attribuées aux pouvoirs locaux, l'Etat s'occupait de tout. En 1970, le Constituant a créé de nouvelles institutions : les Communautés et les Régions. Et chaque réforme de l'Etat a été l'occasion de prélever des compétences à l'Etat (appelé désormais Etat fédéral) pour les attribuer aux pouvoirs fédérés. C'est le grand Tetris belge, où l'on voit l'étage du dessus qui se décompose peu à peu, morceau par morceau, au profit des autres pouvoirs. Dans certains cas, le législateur transfère des blocs homogènes (comme l'Enseignement, attribué aux Communautés en 1989). Dans d'autres, il ne transfère que des éléments d'une compétence (c'est le cas de la fiscalité : le fédéral reste compétent mais accorde aux pouvoirs fédérés certaines prérogatives). Désormais, on distingue ainsi trois types de compétences. Celles exclusivement exercées par l'Etat (la Défense, par exemple). Celles exclusivement exercées par les Régions et les Communautés (Enseignement, Urbanisme, Travaux publics, etc.). Et celles où chaque pouvoir a une possibilité d'intervention. Dans le domaine de l'Emploi, par exemple, l'Etat est compétent dans certains domaines (législation sur le chômage, par exemple) et les Régions sont compétentes pour d'autres (placement et formation des chômeurs).\*

#### The Belgian tetris

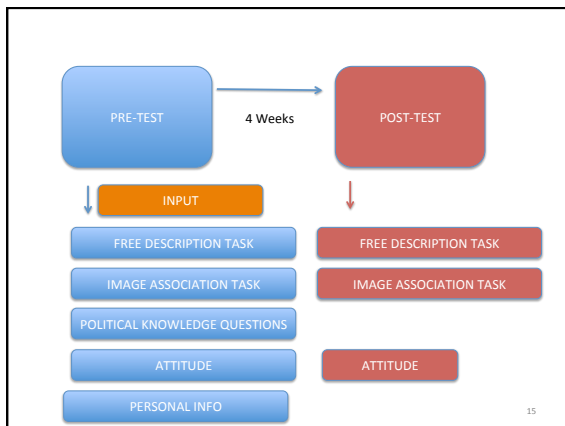
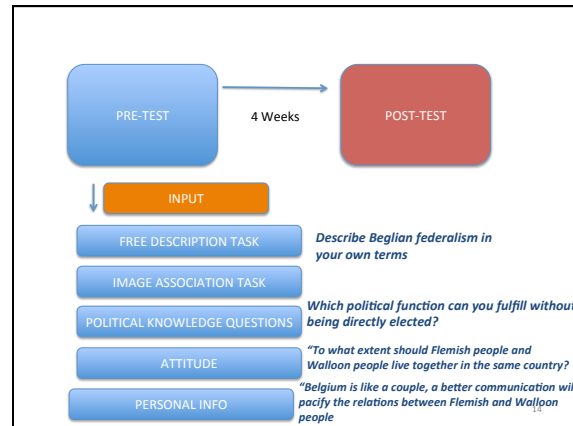
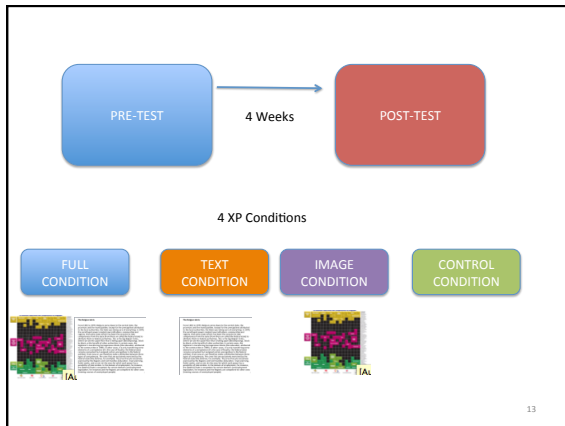
From 1831 to 1970, Belgium came down to the central state, the provinces and the municipalities. Except for the prerogatives attributed to the local authorities, the State was taking care of everything. In 1970, the constituent power created new institutions: communities and regions. And every state 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).

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#### 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?



- ### 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

### Participants

- 1<sup>st</sup> 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)

	Pre-test		Post-test	
	N	%	N	%
Control condition	126	25.6	82	27.4
Full condition	125	25.4	79	26.4
Image condition	114	23.1	65	21.7
Text condition	128	26.0	73	24.4
Total	493	100.0	300	100.0

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

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  - Linguistic analysis
  - Political science analysis
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### 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

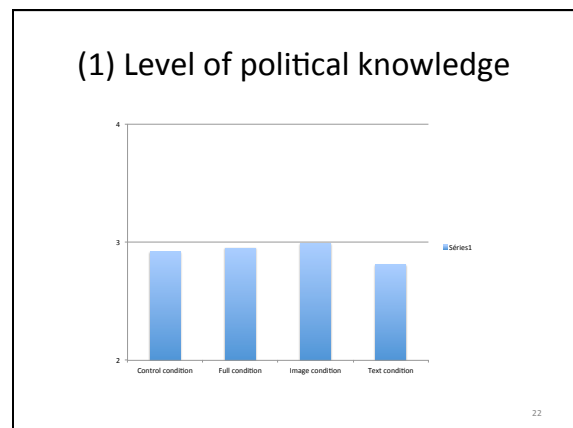
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### General harvest – Political knowledge

- 5 general questions about politics
- One-way ANOVA:
  - DV = score of political knowledge
  - IV = experimental condition
  - No statistically significant differences between the groups: ( $F_{(3,479)} = .411$ ,  $p = .745$ )

	Level of political knowledge			
	Mean score	SD	Min	Max
Control condition	2.92	1.24	.00	5.00
Full condition	2.95	1.22	.00	5.00
Image condition	2.99	1.31	.00	5.00
Text condition	2.81	1.21	.00	5.00
Total	2.92	1.24	.00	5.00

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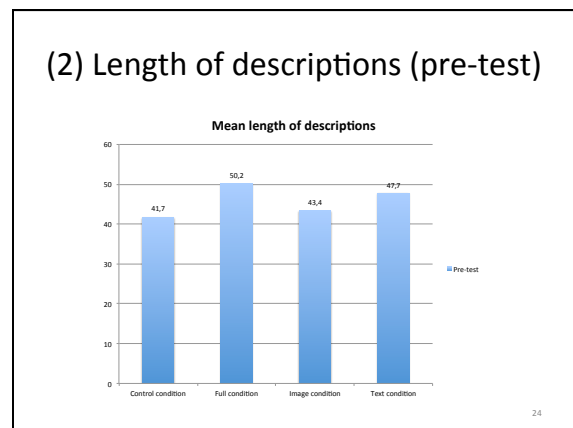


### General harvest – Free description task (pre-test)

- 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: ( $F_{(3,489)} = 3.652$ ,  $p < .05$ )

	Mean length of the descriptions (N words) Pre-test			
	Mean score	SD	Min	Max
Control condition	41.7	22.9	3	120
Full condition	50.2	21.3	3	128
Image condition	43.4	23.6	5	126
Text condition	47.7	23.9	3	127
Total	45.8	23.1	3	128

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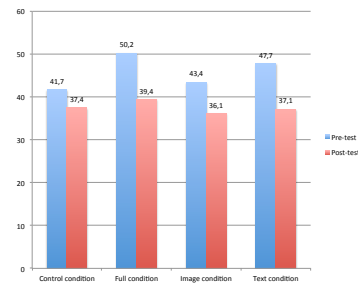


### General harvest – Free description task (post-test)

- 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

	Mean length of the descriptions (N words) Post-test			
	Mean score	SD	Min	Max
Control condition	37.4	18.7	3	80
Full condition	39.4	20.0	3	85
Image condition	36.1	20.6	3	98
Text condition	37.1	22.1	3	126
Total	37.6	20.3	3	126

### (2) Length of descriptions (pre+post)

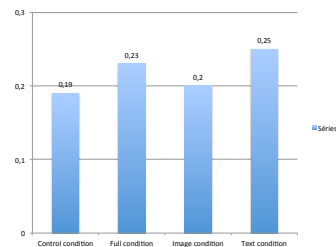


### General harvest – Lexical influence (pre-test)

- 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: ( $F_{(3,489)}= 6.502, p < .001$ )

	Lexical influence of the input text on the free description task (Pre-test)			
	Mean score	SD	Min	Max
Control condition	.19	.14	.0	.78
Full condition	.23	.12	.3	.67
Image condition	.20	.13	.0	.71
Text condition	.25	.12	.0	.75
Total	.22	.13	.0	.78

### (3) Lexical influence of the input (pre)

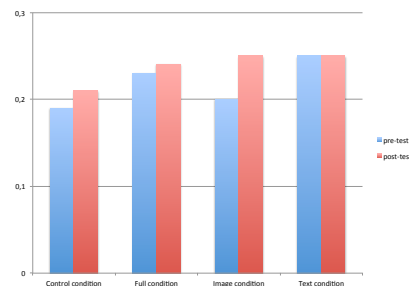


### General harvest – Lexical influence (post-test)

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

	Lexical influence of the input text on the free description task (Post-test)			
	Mean score	SD	Min	Max
Control condition	.21	.15	.0	.78
Full condition	.24	.14	.0	.86
Image condition	.25	.19	.0	.85
Text condition	.25	.16	.0	.88
Total	.24	.16	.0	.88

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



## Results

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

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## 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?*

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## 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

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## Linguistic analysis

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

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(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.

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(1) Belgian federalism is like a Tetris game, it's a building including different levels (=different state entities) ;

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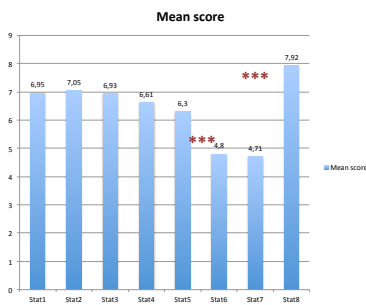
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### Deconstructing the Tetris



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### 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

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### Linguistic analysis

- 8 corpora
  - Keyword analysis
  - Domain analysis

	Pre-test	Post-test
Control condition	5.406 words	3.247 words
Full condition	6.469 words	3.282 words
Image condition	4.972 words	2.678 words
Text condition	6.199 words	2.919 words

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### Linguistic analysis

- Keyword analysis
- Domain analysis

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## Keyword analysis (pre-test)

Table 10 - Comparison of the full condition corpus to the control condition corpus (PRE-TEST)

Key word	Freq. PRQ2	% PRQ2	Freq. PRQ1	% PRQ1	Keyness P
ETA1	116	1.03	39	0.68	27.30 ***
DOMAINES	12	0.17	0	0.00	14.51 ***
COMPETENCES	117	1.70	53	0.93	14.42 ***
POUVOIRS	65	0.94	29	0.44	13.91 ***
FEDERES	14	0.20	1	0.02	11.16 ***
NOUVELLES	9	0.13	0	0.00	10.98 ***
FONCTIONS	9	0.13	0	0.00	10.88 ***
EXERCICES	7	0.10	0	0.00	8.86 ***
ETA1	71	1.03	34	0.59	7.39 **
EMPOCI	6	0.09	0	0.00	7.25 **
SNCB	6	0.09	0	0.00	7.25 **
CERTAINS	18	0.26	4	0.07	7.23 **
EXEMPLE	13	0.19	2	0.03	7.10 **
AUTRES	22	0.32	6	0.10	6.99 **
OCCUPE	10	0.15	1	0.02	6.97 **
PARLAIRES	10	0.15	1	0.02	6.97 **
FLAMANDE	4	0.06	13	0.23	6.95 **
PAYS	31	0.45	47	0.82	-7.01 **
BELGIQUE	42	0.61	61	1.07	-8.03 **
SYSTEME	26	0.38	43	0.75	-8.05 **
NOUS	3	0.04	13	0.23	-8.75 **
EST	147	2.13	180	3.15	-12.67 ***

Table 11 - Comparison of the image condition corpus to the control condition corpus (PRE-TEST)

Key word	Freq. PRQ3	% PRQ3	Freq. PRQ2	% PRQ2	Keyness P
DOMAINES	14	0.27	0	0.00	20.07 ***
OCCUPE	12	0.23	1	0.02	11.96 ***
IMMIGRATION	7	0.13	0	0.00	10.33 **
FEDERE	6	0.11	0	0.00	8.85 **
SECURITE	6	0.11	0	0.00	8.85 **
CHARGE	6	0.11	0	0.00	8.85 **
FEDERAL	74	1.41	49	0.88	7.61 **
POLISE	5	0.10	0	0.00	7.36 **
IMPORTANCE	5	0.10	0	0.00	7.38 **
COMPETENCE	6	0.15	1	0.02	6.83 **
EN	72	1.37	121	2.12	-4.83 **
BELGIQUE	29	0.55	81	1.07	-4.99 **
POUVOIR	22	0.42	93	0.93	-10.72 ***

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

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

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## Keyword analysis (pre-test)

Table 12 - Comparison of the text condition corpus to the control condition corpus (PRE-TEST)

Key word	Freq. PRQ4	% PRQ4	Freq. PRQ1	% PRQ1	Keyness P
ETA1	106	1.62	39	0.68	23.97 ***
DOMAINES	13	0.20	0	0.00	16.32 ***
REGIONS	133	2.03	68	1.19	13.69 ***
COMMUNAUTES	122	1.86	64	1.12	11.82 ***
ENSEIGNEMENT	19	0.29	3	0.05	10.91 ***
TETRIS	8	0.12	0	0.00	10.04 **
PROFIT	8	0.12	0	0.00	10.04 **
PEU	22	0.34	5	0.09	9.38 **
ETA1	72	1.10	34	0.59	9.32 **
ETE	30	0.46	9	0.16	9.27 **
DESORMAIS	7	0.11	0	0.00	8.79 **
CREE	7	0.11	0	0.00	8.79 **
EXEMPLE	13	0.20	2	0.03	7.59 **
CHOMAGE	6	0.09	0	0.00	7.53 **
ETA1	10	0.15	1	0.02	7.38 **
PLUS	67	1.02	34	0.59	7.01 **
PARTE	17	0.26	4	0.07	7.00 **
SYSTEME	26	0.40	43	0.75	-6.91 **
BELGIQUE	41	0.63	61	1.07	-7.21 **
GOUVERNEMENT	4	0.06	14	0.24	-7.34 **
POLITIQUE	9	0.14	25	0.44	-10.20 ***
NEVEAU	3	0.05	16	0.28	-11.64 ***
PAYS	19	0.29	47	0.82	-16.48 ***
EST	121	1.85	180	3.15	-21.62 ***

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

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

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## Keyword analysis

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

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## Keyword analysis (post-test)

Table 13 - Comparison of the full condition corpus to the control condition corpus (POST-TEST)

Key word	Freq. PRQ2	% PRQ2	Freq. PRQ1	% PRQ1	Keyness P
PROVINCES	11	0.32	0	0.00	15.20 ***
DIVISE	9	0.28	1	0.03	7.32 **

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table 14 - Comparison of the image condition corpus to the control condition corpus (POST-TEST)

Key word	Freq. PRQ3	% PRQ3	Freq. PRQ1	% PRQ1	Keyness P
OCCUPANT	7	0.25	0	0.00	11.14 ***
PROVINCES	5	0.18	0	0.00	7.98 **
RESULTAT	5	0.18	0	0.00	7.98 **
PROPRE	8	0.28	1	0.03	7.69 **
PARTAGENT	13	0.46	4	0.12	6.95 **

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table 15 - Comparison of the text condition corpus to the control condition corpus (POST-TEST)

Key word	Freq. PRQ4	% PRQ4	Freq. PRQ1	% PRQ1	Keyness P
DEFENSE	5	0.16	0	0.00	7.46 **

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

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

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## Linguistic analysis

- Keyword analysis
- Domain analysis

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## 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

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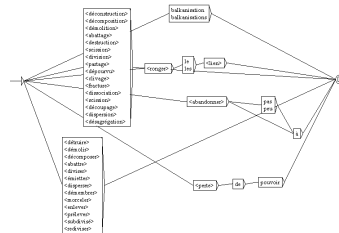


### Linguistic analysis

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

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### Linguistic analysis



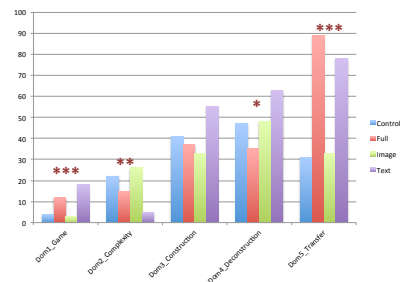
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### Onomasiological profiles

- 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 ..., ...

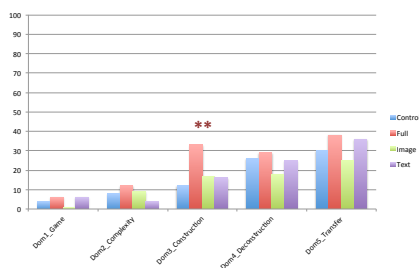
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### Domain analysis (pre)



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### Domain analysis (post)



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### 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?
  - 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)

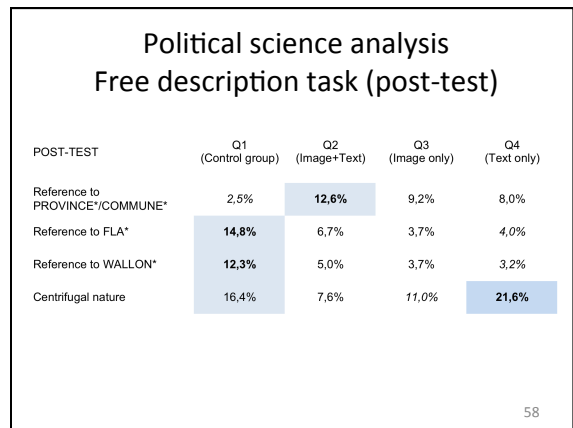
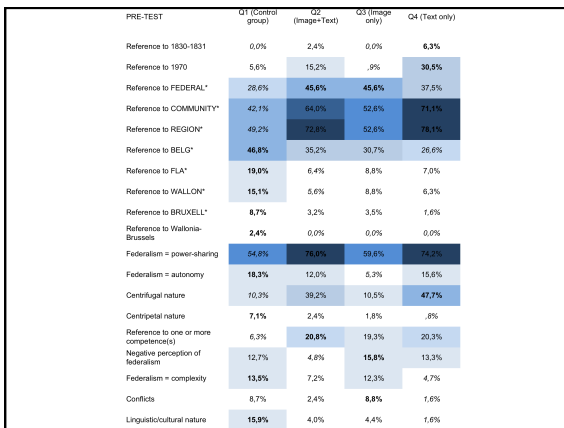
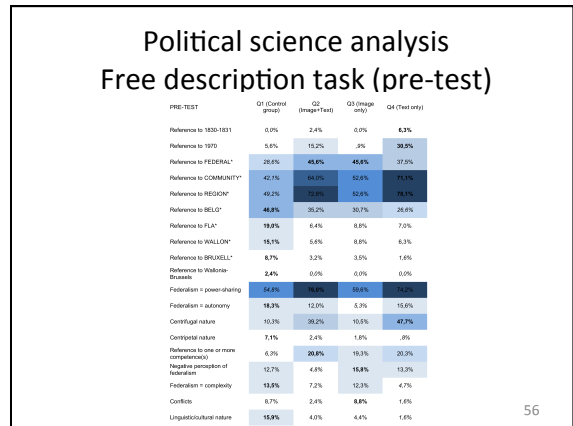
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### Political science analysis

#### Free description 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

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### 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

	Factor 1	Factor 2
Reference to COMMUNITY*		0,742
Reference to REGION*		0,759
Reference to FLA*	0,83	
Reference to WALLON*	0,817	
Reference to BRUSSELS*	0,732	
Reference to DUTCH-SPEAKING*	0,498	
Reference to FRENCH-SPEAKING*	0,681	
Reference to GERMAN-SPEAKING*	0,743	
Federalism = power-sharing		0,51

Extraction Method: Principal Factor Analysis.

### Political science analysis

#### Free description task – regression analysis

Linear regression predicting Factor 1 (pre-test)					
	A	Std Err.	Bêta	t	Sig.
Constant	-0,054	0,157		-0,345	0,730
Man	-0,055	0,091	-0,029	-0,606	0,545
Political knowledge	0,038	0,038	0,049	0,991	0,322
Political interest	0,032	0,020	0,079	1,576	0,116
Q2	-0,315	0,121	-0,144	-2,601	0,010 **
Q3	-0,204	0,126	-0,089	-1,614	0,107
Q4	-0,313	0,122	-0,142	-2,560	0,011 *

Note: N = 493; \*<0,05; \*\* p<0,01; \*\*\* p<0,001

Linear regression predicting Factor 2 (pre-test)					
	A	Std Err.	Bêta	t	Sig.
Constant	-0,663	0,134		-4,956	0,000 ***
Man	-0,346	0,078	-0,195	-4,443	0,000 ***
Political knowledge	0,102	0,032	0,145	3,163	0,002 **
Political interest	0,025	0,017	0,065	1,417	0,157
Q2	0,618	0,103	0,306	5,974	0,000 ***
Q3	0,146	0,108	0,069	1,352	0,177
Q4	0,731	0,104	0,360	7,022	0,000 ***

Note: N = 493; \*<0,05; \*\* 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

	A	Std Err.	Bêta	t	Sig.
Constant	5,945	0,356		16,685	0,000 ***
Man	0,167	0,201	0,040	0,831	0,407
Political knowledge	-0,128	0,083	-0,076	-1,544	0,123
Political interest	0,157	0,046	0,171	3,440	0,001 **
Q2	-0,395	0,266	-0,083	-1,484	0,139
Q3	0,001	0,276	0,000	0,004	0,996
Q4	-0,613	0,269	-0,127	-2,280	0,023 *

Note: N = 623; \* <math>p < 0,05</math>; \*\* <math>p < 0,01</math>; \*\*\* <math>p < 0,001</math>

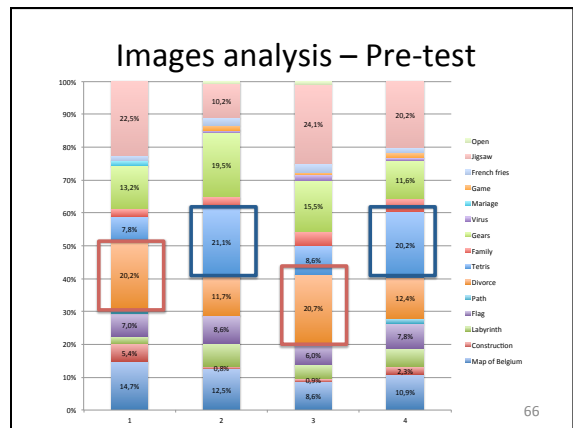
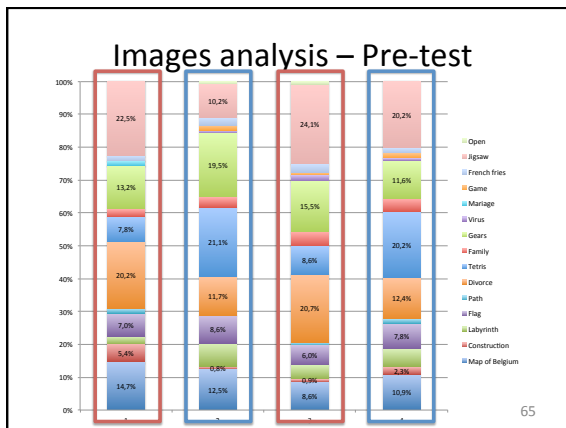
### Discussion

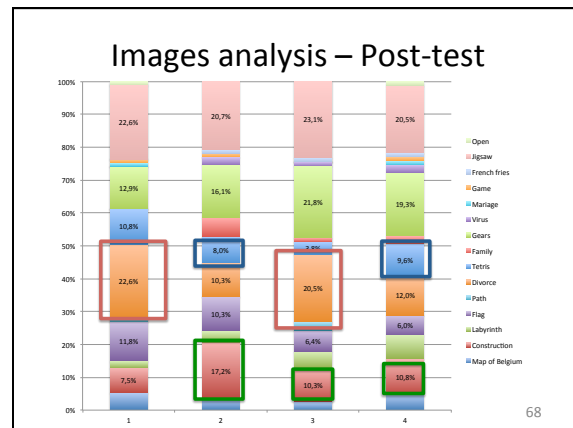
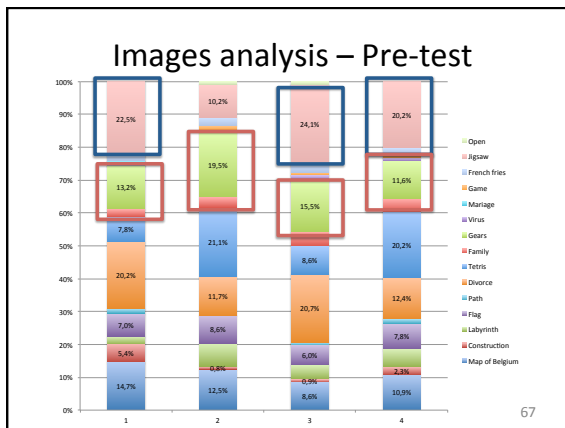
- Do metaphors have an impact?
  - On the way people frame Belgian federalism
  - On perception (picture task + description task)
  - On opinion (question on autonomy)

### Results

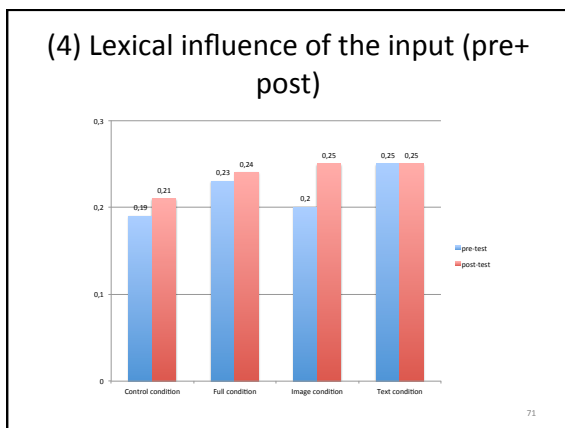
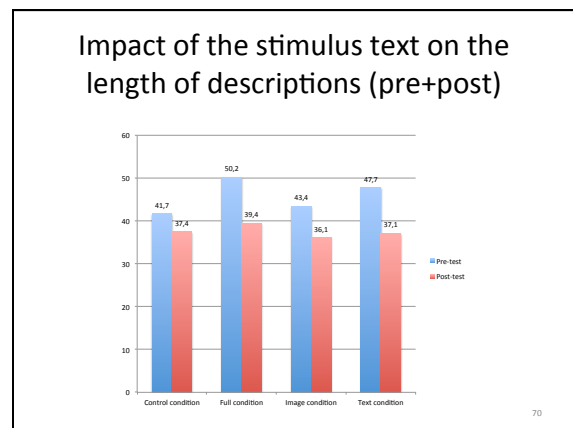
- Free description task
  - Linguistic analysis
  - Political science analysis
- Image association analysis

### Images analysis – Set-up





- ### 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**



- ### 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?*

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## Discussion

- 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

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## 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

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