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The “Belgian Tetris”

Assessing the political impact of metaphors on citizens’ representations of Belgian federalism

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As metaphors not only reflect perceived reality, but can also function as cues through which citizens come to understand complex political processes, the aim of this study is to look at how specific metaphors might impact on the citizens’ framing of Belgian federalism. To measure the impact of metaphors on political representations, we conducted an experiment among 493 citizens based on an article published in the newspaper “Le Soir”, in which Belgian federalism was compared to a Tetris game in both a text and an image. The participants were distributed across four experimental conditions according to the type of input they had been exposed to (text and image, text only, image only, no input) and were asked to perform a free description task. The productions of the participants were analyzed using keyword and content analyses. The results suggest that the participants who had been exposed to the experimental text tended to frame their perception of Belgian federalism in different ways. They also show that reading the text had more of an impact on the representations than looking at the image, but that this impact was in both cases short-lived.

Keywords: conceptual metaphors, federalism, framing, political representations, Belgium

1. Introduction

The fact that we “live by” metaphors has now been widely accepted by the scholarly community of linguists around the world, following the seminal work of Lakoff and Johnson (1980). Metaphors are not only figures of speech serving rhetorical purposes, but also and above all powerful conceptual tools to depict abstract and complex realities through familiar domains of reference. Metaphors can thus be found in our daily life, including our political life. Yet in this domain, the political

impact of metaphors is often taken for granted. Therefore, a more global understanding of what this impact could consist of is needed. As Koller (2009, p. 121) claims: “metaphor helps construct particular aspects of reality and reproduce (or subvert) dominant schemas.” To be able to account for how metaphors, through discourse, actively shape political reality, it is important to look at the relationships between metaphorical discourses and their context.

As metaphors not only reflect perceived reality, but can also function as cues through which citizens come to understand complex political processes, and through which they shape political behaviours, the aim of this study is to look at how specific metaphors might impact on citizens. Too often such political impact is assumed. Yet the identification of metaphors in political discourse does not necessarily imply that these metaphors matter politically. While the use of metaphors is probably meaningful from the perspective of the producer, the question of their impact on individuals has not yet been examined in greater detail.

This article builds on an experiment performed in Belgium concerning citizens’ representations of federalism. In this country, the future of federalism is a hotly debated political issue since it concerns the future of Belgium itself (Reuchamps, 2013). Several metaphors have been used to express in more familiar terms the complexity of Belgian federalism and its dynamics (Perrez & Reuchamps, 2014; Reuchamps & Perrez, 2012). Among them, the ‘Belgian Tetris’ metaphor has been proposed in the media as a way to explain the nature of Belgian federalism in terms of its power distribution. Our experiment is based on this real-life metaphor. Comparing various experimental conditions will make it possible to: (1) measure the impact of the Tetris metaphor on citizens’ representations of Belgian federalism; (2) assess to what extent the different metaphorical media (text and/or image) contribute differently to this impact; and (3) to measure the impact of this metaphor over time. In answering these questions, this study will contribute to a better understanding of the role and functions metaphors play in political discourse, and more globally in our everyday political interactions.

2. The political impact of metaphors

There are good reasons to assume that metaphors have an impact on our political thinking. Many scholars have demonstrated that metaphor is a central cognitive process of human cognition; it is key for abstract conceptualisation and reasoning (for an overview, see Johnson, 2010). Psychologists Bowdle and Gentner (2005) have explored how metaphors establish mapping between concepts from different domains and have shown that metaphors are processed differently depending on their degree of conventionality — conventional vs. novel — and their grammatical

form — metaphor vs. simile. While individuals appear to process conventional metaphors as quickly as they process literal meaning, they need more time to comprehend novel metaphors, especially when these are not expressed as similes. This is an important finding for research on the impact of metaphors, as the impact of conventional metaphors may be quite different from the impact of novel metaphors. This distinction should be borne in mind in any analysis of the political domain.

In a set of several interrelated experiments, Thibodeau and Boroditsky (2011) explored how metaphors about crime policy might influence reasoning. When respondents were presented with crime as a “virus infecting a city”, they were more likely to propose a prevention-inspired solution with educational campaigns and social reforms. By contrast, when respondents were presented with crime as a “wild beast preying on a city”, their solutions were much more based on repression, with the objectives of catching and jailing criminals as well as enacting harsher enforcement laws. These experiments suggested that metaphors, even with a one word change, can have a political impact and that the influence of their framing effect is often covert, as respondents do not recognize metaphors as influential in their decisions. Yet, metaphors seem to instantiate frame-consistent knowledge structures that lead to structurally consistent policy solutions.

Building on these findings, Thibodeau and Boroditsky (2013) further explored the influence of natural language metaphors on social issues and policies. In a new series of four experiments, respondents were again presented with a short text on the increase of crime in a fictitious town where crime was metaphorically presented either as a beast or a virus. This time, however, they did not ask respondents to generate a solution of their own, but they provided them with competing solutions and asked them to choose the best ones. Their results suggest that presenting crime as a beast led the participants to choose punitive measures, whereas the virus metaphor increased the participants’ propensity to opt for prevention solutions (even though punitive measures were still strongly present). This led the researchers to the conclusion that “metaphors can instantiate coherent knowledge-structures that influence how we build a representation of the problem and evaluate potential solutions, and they can do so even when they slip by unnoticed” (Thibodeau & Boroditsky, 2013, p. 7).

On the basis of a recent set of three experiments, including an extended replication of the studies by Thibodeau and Boroditsky, Steen, Reijnders and Burgers (2014) questioned the conclusion that metaphors subtly but covertly influence people’s reasoning. Their experiments did not yield the same results and more refined tests showed that possible alternative explanations should be explored. In fact, Steen et al. (2014, p. 20) found that simply reading about crime — without any metaphorical framing — increased people’s preferences for repression-inspired, rather than prevention-inspired, solutions.

There is much still to be explored and understood about the influence of metaphors. Previous studies do however emphasise the need to do three things when designing an experiment to investigate the political impact of metaphors: first, to set a control condition to compare any changes against; second, as metaphors are communicated through different media (oral, written, visual, for instance), to not only focus on textual material but also to check for the effect of supporting visual material; third, to control for individual and political variables. As political impact can vary a lot in nature and over time, we designed an experiment that relies on one real-life metaphor, as used in the media, and looked for its impact on a specific population, with special attention to surrounding variables. The aim of this article is accordingly to assess the political impact of this real-life metaphor both in the short-term and in the longer term. In this study, political impact can thus be defined as the actual impact of a metaphor on the way people see and understand a complex political issue, such as, in this case, the distribution of power in a federal state, where this question has been for long at the top of the political agenda (Deschouwer & Reuchamps, 2013).

3. Data and method

3.1 Experimental material

To measure the possible impact of metaphors on citizens' political representations, we developed an experimental set-up based on an article published in the newspaper "Le Soir" (13–14 July, 2013) in which Belgian federalism was compared to a Tetris game. The original article consisted of a large central picture and accompanying text (208 words),¹ which were used as experimental material. The authentic nature of our experimental text guarantees a fairly high degree of ecological validity, considering that it had been produced by a journalist in a natural setting to present the state reform to its readers.

1. The original article was entitled 'La nouvelle répartition des compétences en Belgique' ('The new distribution of competences in Belgium'). As highlighted by an anonymous reviewer, the comprehension of the word 'competence' might be problematic. This usage refers to the legal authority of a political body to deal with a particular matter. The anonymous reviewer suggested that the word 'jurisdiction' could be considered a better English alternative for the concept of 'competence'. However, considering the high frequency of the word 'competence' in political science literature (Deschouwer, 2012), the term is retained here. For copyright reasons, the original article (including the picture) has not been reproduced here. The wording of the original text and its translation into English can be found in the Appendix.

3.2 Deconstructing the Tetris

In past research on metaphors in political discourse, buildings, journeys, machines and family relationships appear to be the preferred source domains to describe political systems and processes (see among many others Charteris-Black, 2011; Lakoff, 1996; Musolff, 2004; Reuchamps & Perrez, 2012). Using a computer game as a cognitive reference point can therefore be viewed as an original way of depicting a political system. In this newspaper article, the mapping between the Tetris game and Belgian federalism is directly mentioned in the title of the short text next to the image and overtly realised in the sentence *C’est le grand Tetris belge* (‘this is the big Belgian Tetris’) and reinforced by the use of the words *étage* (‘floor’ or ‘level’) and *bloc* (‘block’). Moreover, this mapping is made explicit by the presentational construction introduced by *C’est* (‘This is ...’). Applying Steen’s (2008) model, this metaphor can be regarded as a direct metaphor at the linguistic level and novel metaphor at the conceptual level. As it was also used “to change the addressee’s perspective on the referent or topic that is the target of the metaphor, by making the addressee look at it from a different conceptual domain or space, which functions as a conceptual source” (Steen, 2008, p. 222), we would suggest that it is an instance of deliberate metaphor (see also Negrea-Busuioc & Ritchie, 2015). More specifically, we think the author of the newspaper article used the metaphor with the didactic goal of presenting the new state reform as comprehensively as possible.

Before turning to the core discussion of the conceptual consequences of the use of the metaphor on citizens’ understanding of the state reforms, we will initially focus on interpreting it. More specifically, we point to the relevant implications of the Tetris metaphor when applied to the domain of Belgian federalism.

Firstly, Tetris is a *game*, and more specifically a dynamic *puzzle game* in which time is a crucial factor and differently-shaped pieces must fit together. Applied to the domain of politics, this mapping highlights the notion of complexity in the system. It is complicated to get the right blocks (in this case the different federal state competences) in the right place (in this case the different substate entities).

With respect to the game’s scenario, we can identify different *levels* (the different federal entities) and different *blocks*, (namely the competences), moving down from a higher level (the federal government) to a lower level (the regional and community governments). These notions of blocks and levels relate to the conceptual domain of *construction*, which is reinforced by the fact that the combination of blocks at the lower level visually leads to the construction of a building. When applying this idea of construction to Belgian federalism, more specific inferences can be derived, namely: (i) the fact that the construction process only concerns the lower level, which, when transposed to Belgian federalism, suggests that the

construction process is limited to the substate entities; following from this, (ii) the idea that the construction of the substate entities occurs at the expense of the federal state, which is falling apart (or losing blocks). Besides these two main interpretations, some more specific suggestions could be indirectly derived, such as (iii) the fact that it is impossible to win this game, suggesting that further federalisation of the state is somehow an inevitable process; and (iv) the fact that this process is unidirectional and non-reversible (from the higher level to the lower level). However, in the framework of the Belgian federal system, a reverse movement is technically, albeit less politically, possible, e.g. moving competences from the lower level to the higher level (known as a re-federalisation process in Belgian terms). These different interpretations were used in the content analysis of the data (Section 4.4).

3.3 Experimental design

In order to assess to what extent the Tetris metaphor might have an influence on citizens' representations of Belgian federalism, we designed a test consisting of three experimental conditions and one control condition. In the first experimental condition (full condition), participants were exposed to the original article (text and picture). In the second and third experimental conditions, the participants were exposed respectively to the text only (text condition) or the picture only (image condition). In the control condition, the participants were not exposed to any material at all. The experimental task immediately followed the stimulus stage. It consisted of two interrelated tasks, namely a free description task, in which the participants were asked to describe their own representation of Belgian federalism and a questionnaire measuring their political knowledge of Belgian federalism and attitudes towards its future development.

Four weeks after this first experimental session, a post-test was held, in which the first task of the second stage — the free description — was replicated. In this second experimental session, the participants were not exposed to any experimental input.

3.4 Participants

The participants were 1st-year bachelor's students from the Université de Liège and the Université catholique de Louvain in Belgium, respectively enrolled in a Modern Languages program and a Social and Political Sciences program. The analysis of our data is based on a sample of 493 students for the experimental in-

tervention and 300 for the post-test.² The subjects were randomly assigned to the different experimental conditions (Table 1). The students who participated in the post-test had all taken part in the experimental intervention.

Table 1. Distribution of participants across experimental conditions

	Experiment		Post-test	
	N	%	N	%
Control condition (Q1)	126	25.6	82	27.4
Full condition (Q2)	125	25.4	79	26.4
Image condition (Q3)	114	23.1	65	21.7
Text condition (Q4)	128	26.0	73	24.4
Total	493	100.0	300	100.0

3.5 Procedure

The whole experiment (including experimental intervention and post-test) was conducted online using LimeSurvey. For the intervention, the experimental protocol consisted of 4 to 6 different stages (depending on the experimental condition). These can be summarised as follows:

- Stage 1 presented the experimental stimulus, either the Tetris illustration (image condition and full condition) or the experimental text (text condition), or no stimulus (control condition).
- Stage 2 presented the experimental text (full condition only).
- Stage 3, participants were asked to freely describe their own perception of Belgian federalism (free description task; all conditions).
- Stage 4, participants were confronted with 5 multiple-choice questions tackling their general political knowledge about Belgian federalism (e.g., “Which political function can you fulfil without being directly elected?”).
- Stage 5, participants were asked to fill in socio-demographics.
- Stage 6, participants were asked to describe their perception of their own identity on an 11-point Likert scale.

The participants could go through each stage at their own pace. Once one stage had been completed, they could not return to it. In the post-test, stage 3 was fully replicated and all other stages were omitted.

2. The difference in participation between the experimental intervention and the post-test can be explained by the fact that fewer students actually turned up for the post-test. This tendency was equally distributed across the experimental conditions (see Table 1).

4. Results

Data were analysed with the various exposure conditions as a between-subjects independent variable, the experimental intervention and the post-test as a within-subjects independent variable and the citizens' representations of Belgian federalism as the dependent variable. The descriptions of Belgian federalism by participants (produced in Stage 3) were analysed using different techniques: we looked at the description length (Section 4.1), at the lexical influence of the experimental text (Section 4.2), performed a keyword analysis (Section 4.3), and finally conducted a corpus-based content analysis of the participants' free descriptions (Section 4.4).

4.1 Length of descriptions

The aim of this first analysis was to determine the extent to which exposure to the experimental input had an impact on the description task, by measuring the mean length (number of words) of the free descriptions (Table 2).

Table 2. Mean length (N words) of the free descriptions across the experimental conditions (experimental intervention and post-test)

	Experiment				Post-test			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Control condition	41.7	22.9	3	120	37.4	18.7	3	80
Full condition	50.2	21.3	3	128	39.4	20.0	3	85
Image condition	43.4	23.6	5	126	36.1	20.6	3	98
Text condition	47.7	23.9	3	127	37.1	22.1	3	126
Total	45.8	23.1	3	128	37.6	20.3	3	126

The results in Table 2 point to a linear trend suggesting that participants who had been exposed to more visual and textual material tended to produce longer descriptions (no input < visual input < textual input < visual and textual input). A one-way ANOVA found that this tendency is significant ($F_{(3,489)} = 3.652, p < .05$). However, further post-hoc analyses suggested that only the difference between the control condition and the full condition was significant ($p < .05$).

Interestingly, this effect disappeared in the post-test. Though the participants from the full condition still produced longer descriptions, differences in description length between the different experimental groups were not significant anymore ($F_{(3,295)} = .346, p = .792$). Further post-hoc analyses did not reveal any significant differences either. It can further be observed that the mean length of descriptions decreased in the post-test, suggesting the influence of the input

material did not last over time ($t_{(1,299)}=7.833, p<.0001$). This appeared to be the case for all experimental conditions.

4.2 Lexical influence of the experimental text

A second dimension that might have had an impact on descriptions produced by participants was the lexical influence of the input text. To measure this influence, we derived the degree of lexical overlap between the experimental text and the free descriptions, by calculating the number of similar lexical items divided by the total number of words of the text. Though each experimental group showed a minimal degree of lexical overlap with the input text (even the groups who were not exposed to the text), the results suggest that the answers of the participants who were exposed to the input text (full condition and text condition) showed a higher degree of lexical overlap with the input text (Table 3).

Table 3. Lexical influence of the input text on the free description task (experimental intervention and post-test)

	Experiment				Post-test			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Control condition	.19	.14	.0	.78	.21	.15	.0	.78
Full condition	.23	.12	.3	.67	.24	.14	.0	.86
Image condition	.20	.13	.0	.71	.25	.19	.0	.85
Text condition	.25	.12	.0	.75	.25	.16	.0	.88
Total	.22	.13	.0	.78	.24	.16	.0	.88

A one-way ANOVA with the degree of lexical overlap as the dependent variable and the experimental condition as an independent variable found that this lexical impact was significant ($F_{(3,489)}=6.502, p<.001$), confirming that reading the text does have an influence on participants’ descriptions. Further post-hoc comparisons showed that only the differences between the control condition and the text condition, on the one hand, and between the image condition and the text condition, on the other, were significant (respectively $p<.001$ and $p<.01$). However, this lexical influence of the text disappeared in the post-test, as shown in Table 3. This tendency was confirmed by a one-way ANOVA with the degree of lexical overlap as dependent variable and the experimental condition as independent variable ($F_{(3,295)}=.922, p=.430$).

Although the input text appeared to lexically influence the descriptions of the participants in the experimental intervention, it should be noted that the mean lexical coverage of the text remained relatively low. This suggests that the participants did not merely reproduce the textual information, but rather that the text

contained words which were typical of political language in general. This interpretation seems to be confirmed by the lexical coverage observed in the post-test, which was found to be higher than in the experimental intervention for each experimental condition, even though the participants were not exposed to any form of input material at this stage of the experiment.

4.3 Keyword analysis

The first two analyses focussed on pure formal aspects of the participants’ descriptions of Belgian federalism. The two subsequent analyses (Sections 4.3, 4.4) sought to determine to what extent participants from the different experimental conditions talk differently about Belgian federalism having been exposed to the Tetris metaphor. To determine this, descriptions from participants from the four experimental conditions were divided into eight different subcorpora: four for the experimental intervention and four for the post-test (Table 4).

Table 4. Size of the subcorpora (N words)

	Experiment	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

To measure the impact of the Tetris metaphor, we firstly performed a keyword analysis using the corpus processing software Wordsmith Tools 6 (Scott, 2012). Such an analysis made it possible to compare two text corpora and to automatically extract the words that appear more prominently in one corpus or the other. In order to determine to what extent participants who had been exposed to the input material talked differently about Belgian federalism, various keyword analyses were performed using the control condition corpus as a reference corpus. The results of these analyses are summarized in Table 5 for the experimental intervention and Table 6 for the post-test. The italicised words are those that were significantly more frequent in the reference corpus (control condition corpus). Above the line are the words that were significantly more frequent in the corpora that were compared to it, respectively the full condition corpus (Q2), the image condition corpus (Q3) and the text condition corpus (Q4). The level of significance was calculated on the basis of log-likelihood ratio and was set at 0.05.

Table 5. Keyword comparison of the experimental corpora (respectively full condition (Q2), image (Q3) and text (Q4) conditions) with the control condition corpus (Q1) (Experimental intervention)

Key word	%Q2	%Q1	Keyness	Key word	%Q3	%Q1	Keyness	Key word	%Q4	%Q1	Keyness
etat ('state')	2.71	1.27	34.69	domaines ('domains')	0.27	0.00	20.67	etat ('state')	2.72	1.27	33.29
domaines ('domains')	0.17	0.00	14.51	s'occupe ('is in charge of')	0.23	0.02	11.96	domaines ('domains')	0.20	0.00	16.32
compétences ('competences')	1.70	0.93	14.42	immigration ('immigration')	0.13	0.00	10.33	régions ('regions')	2.03	1.19	13.69
pouvoirs ('powers')	0.94	0.44	11.81	féderé ('substate')	0.11	0.00	8.85	communautés ('communities')	1.86	1.12	11.52
féderés ('substate')	0.20	0.02	11.16	sécurité ('security')	0.11	0.00	8.85	enseignement ('education')	0.29	0.05	10.91
nouvelles ('new')	0.13	0.00	10.88	charge ('in charge of')	0.11	0.00	8.85	tetris ('tetris')	0.12	0.00	10.04
fonctions ('functions')	0.13	0.00	10.88	fédéral ('federal')	1.41	0.86	7.61	au profit de ('in favour of')	0.12	0.00	10.04
exercées ('exercised')	0.10	0.00	8.46	police ('police')	0.10	0.00	7.38	peu ('little')	0.34	0.09	9.38
emploi ('employment')	0.09	0.00	7.25	importance ('importance')	0.10	0.00	7.38	été ('been')	0.46	0.16	9.27
sncb ('national railway company')	0.09	0.00	7.25	compétence ('competences')	0.15	0.02	6.83	désormais ('from now on')	0.11	0.00	8.79
certaines ('some')	0.26	0.07	7.23					créé ('created')	0.11	0.00	8.79
exemple ('examples')	0.19	0.03	7.10					exemple ('example')	0.20	0.03	7.59
autres ('others')	0.32	0.10	6.99					chômage ('unemployment')	0.09	0.00	7.53
s'occupe ('is in charge of')	0.15	0.02	6.97					était ('was')	0.15	0.02	7.38
partagées ('shared')	0.15	0.02	6.97					plus ('more')	1.02	0.59	7.01
								partie ('part')	0.26	0.07	7.00
flamande ('flemish')*	0.06	0.23	-6.85	en ('in')	1.37	2.12	-8.83	système ('system')	0.40	0.75	-6.91
pays ('country')	0.45	0.82	-7.01	belgique ('belgium')	0.55	1.07	-9.09	belgique ('belgium')	0.63	1.07	-7.21
belgique ('belgium')	0.61	1.07	-8.03	pouvoir ('power')	0.42	0.93	-10.72	gouvernement ('government')	0.06	0.24	-7.34
système ('system')	0.38	0.75	-8.05					politique ('political')	0.14	0.44	-10.20
nous ('we')	0.04	0.23	-8.75					niveau ('level')	0.05	0.28	-11.64
est ('is')	2.13	3.15	-12.67					pays ('country')	0.29	0.82	-16.48
								est ('is')	1.85	3.15	-21.62

* The bottom section of the Table (italicized) shows the keywords that are more frequent in the control condition corpus (Q1) compared respectively with Q2, Q3 and Q4.

Table 6. Keyword comparison of the experimental corpora (respectively full condition (Q2), image (Q3) and text (Q4) conditions) with the control condition corpus (Q1) (Post-test)

Keyword	%Q2	%Q1	Keyness	Keyword	%Q3	%Q1	Keyness	Keyword	%Q4	%Q1	Keyness
provinces (‘provinces’)	0.32	0.00	15.20	s’occupent (‘are in charge of’)	0.25	0.00	11.14	défense (‘defense’)	0.16	0.00	7.46
divisé (‘divided’)	0.26	0.03	7.32	provinces (‘provinces’)	0.18	0.00	7.96				
				résultat (‘result’)	0.18	0.00	7.96				
				propre (‘own’)	0.28	0.03	7.66				
				partagent (‘share’)	0.46	0.12	6.95				

When looking at the lexical differences between the control corpus (experimental intervention) and the other corpora (Table 5), it is interesting to note that the words that emerged from the control corpus were general words such as *système* (‘system’), *Belgique* (‘Belgium’), *pays* (‘country’) or *gouvernement* (‘government’). By contrast, participants who were exposed to a stimulus tended to mention the words *compétences* (‘competences’) or *domaines* (‘domains’), and to explicitly mention some of these state competences — see for instance *SNCB* (‘national railway company’) and *emploi* (‘employment’) in the full condition corpus; *immigration* (‘immigration’), *sécurité* (‘security’) and *police* (‘police’) in the image condition corpus; *enseignement* (‘education’) or *chômage* (‘unemployment’) in the text condition corpus. When focussing on the participants who were exposed to the textual stimulus, some other words significantly emerged such as *Etat* (‘state’), both in the full and in the text condition, or *régions* (‘regions’), *communautés* (‘communities’) and *Tetris* in the text condition.

Participants who had been exposed to any form of input material, be it textual, visual or both, tended to significantly use different words in their own descriptions of Belgian federalism. Interestingly, in the post-test (Table 6), most of the differences disappeared (except for some isolated words such as *provinces* (‘provinces’)), suggesting that the descriptions no longer fundamentally differed from each other and consequently that any form of influence of the input material was not a long-lasting influence. These tendencies are in line with the results presented in the previous section (Section 4.2).

4.4 Content analysis

The results of the keyword analyses (Section 4.3) suggest that exposure to the input material leads to a significantly different use of words. However, in order to establish the more specific influence of the Tetris metaphor, we wanted to assess the extent to which exposure to it might lead the participants to frame their description of Belgian federalism differently. To this end, we performed a semi-automatic

content analysis based on the possible interpretations of the Tetris metaphor discussed in Section 3.2.

For each interpretation of the metaphor we designed an onomasiological profile, which is a list of lexical items corresponding to a possible interpretation. It should be noted that these lists of lexical items were designed in an intuitive fashion, by collecting relevant lexical items from the descriptions of the participants and expanding them with possible synonyms and derivative forms. Some examples of lexical items relating to each interpretation of the metaphor are presented in Table 7. Using the corpus processor Unitex (Paumier, 2015), we subsequently calculated the frequency of each profile by running concordance analyses. The resulting concordances were then manually disambiguated by suppressing possible duplicates and checking that each concordance matched the original interpretation of the metaphor (output examples can be seen in Table 7). This stage was performed independently by both authors. Problematic cases were further discussed to come to an agreement.

The results of the analyses for the experimental intervention (Table 8 and Figure 1) show that participants from different experimental conditions did indeed tend to stress different dimensions of Belgian federalism in their descriptions. Firstly, it appears that the subjects who were exposed to the textual material tended to produce more utterances relating to one of the possible interpretations of the Tetris metaphor ($X^2 = 23.153$, $df = 3$, $p < .0001$). This is much more strikingly the case for the participants from the text-only condition than for the participants from the full condition. Secondly, it appears that the subjects who were exposed to the textual material (full condition and text condition) tended, to a significant degree, to frame their descriptions around the notion of transfer of competences. To a lesser extent, both groups referred more frequently to the game domain. This effect was mainly due to the explicit references to the notion of Tetris in free descriptions from respondents from the full and text conditions. Interestingly these references to the game domain did not emerge in descriptions from subjects from the image condition. Thirdly, subjects who were not exposed to the textual stimulus tended to behave similarly as well. For instance, they tended to highlight the complexity of the federal system significantly more frequently than subjects who had been exposed to just the textual input. Relating this observation to the high frequency of the notion of transfer of competences suggests that reading the text helped the subjects understand how Belgian federalism is working. Finally, participants in the text condition also tended to emphasise the notion of deconstruction of the federal state.

When focussing on results of the post-test descriptions (Table 8 and Figure 2), it appears that all the tendencies that were observed in the experimental intervention had disappeared. The participants from different experimental conditions

Table 7. Onomasiological profiles of the potential interpretations of the Tetris metaphor.

Fields	Example expressions	Example usage
Game	<i>case</i> ('square'), <i>compétition</i> ('competition'), <i>défaite</i> ('defeat'), <i>gagner</i> ('win'), <i>jeu</i> ('game'), <i>jouer</i> ('play'), <i>joueur</i> ('player'), <i>match</i> ('match'), <i>participante</i> ('participant'), <i>participer</i> ('participate'), <i>perdant</i> ('loser'), <i>perdre</i> ('lose'), <i>pion</i> ('pawn'), <i>puzzle</i> ('jigsaw'), <i>règle</i> ('rule'), <i>stratégie</i> ('strategy'), <i>tactique</i> ('tactics'), <i>Tetris</i> ('Tetris'), <i>vainqueur</i> ('winner'), <i>victoire</i> ('victory')	<i>Tel un jeu de Tetris, de plus en plus de pouvoirs (de différents types) sont légués au "bas de l'échelle"</i> (Pre-test-full condition-071) (Like a Tetris game, more and more powers (of different types) are handed down to the 'bottom of the ladder') <i>Dans le cas de du fédéralisme belge, l'Etat est en train de perdre de plus en plus de compétences.</i> (Post-test-control condition-128) (In the case of the Belgian federalism, the State is losing more and more competences)
Complexity	<i>casse-tête</i> ('headache', 'puzzle'), <i>cogitation</i> ('cogitation'), <i>complexe</i> ('complex'), <i>complexifier</i> ('make more complex'), <i>complication</i> ('complication'), <i>complexité</i> ('complexity'), <i>compliqué</i> ('complicated'), <i>difficile</i> ('difficult'), <i>difficulté</i> ('difficulty'), <i>ne pas comprendre</i> ('not understand'), <i>peu/pas compréhensible</i> ('little or not understandable'), <i>problème</i> ('problem'), <i>réflexion</i> ('thinking')	<i>le partage des pouvoirs s'avère un peu chaotique et complexe à comprendre</i> (Pre-test-image condition-086) (power-sharing turns out to be a bit chaotic and complex to understand) <i>le fédéralisme belge manque parfois de logique et crée des problèmes car il y a 3 langues différentes</i> (Post-test-control condition-070) (Belgian federalism is sometimes lacking logic and creating problems because there are three different languages)
Construction	<i>base</i> ('basis'), <i>bâtiment</i> ('building'), <i>bâtir</i> ('build'), <i>bloc</i> ('block'), <i>brique</i> ('brick'), <i>chantier</i> ('construction site'), <i>ciment</i> ('cement'), <i>construction</i> ('construction'), <i>construire</i> ('build'), <i>créer</i> ('create'), <i>échafaudage</i> ('scaffolding'), <i>édifice</i> ('building'), <i>étage</i> ('floor'), <i>fondations</i> ('foundations'), <i>immeuble</i> ('building'), <i>maison</i> ('house'), <i>niveau</i> ('level'), <i>pilier</i> ('pillar'), <i>stable</i> ('stable'), <i>structure</i> ('structure')	<i>Le fédéralisme à la belge est bancal car il repose sur des conflits communautaires</i> (Pre-test-text condition-120) (Belgian federalism is shaky since it is relying on community conflicts) <i>Le fédéralisme en Belgique est particulier. Il s'est construit au fur et à mesure des revendications émises par les deux communautés.</i> (Post-test-control condition-117) Federalism in Belgium is peculiar. It is constructing itself depending on the demands voiced by the two communities)

Table 7. (continued)

Fields	Example expressions	Example usage
De-construction	<i>abattre</i> ('pull down', 'destroy'), <i>clivage</i> ('divide'), <i>décomposer</i> ('break down'), <i>décomposition</i> ('decomposition'), <i>déconstruction</i> ('deconstruction'), <i>découper</i> ('divide'), <i>découpage</i> ('division'), <i>démolition</i> ('demolition'), <i>démolir</i> ('demolish'), <i>destruction</i> ('destruction'), <i>détruire</i> ('destroy'), <i>diviser</i> ('divide'), <i>fracture</i> ('fracture'), <i>morceler</i> ('divide up'), <i>scission</i> ('split'), <i>séparation</i> ('separation')	<i>On parle en Belgique de fédéralisme de dissociation ou de désagrégation, puisque la tendance est à l'autonomie plutôt qu'à la mise en commun.</i> (Pre-test-image condition-045) (One speaks in Belgium of federalism of dissociation or of <u>désagrégation</u> , since the tendency is for autonomy rather than for common-sharing) <i>Chaque Réforme prélèvent compétences pour les attribuer au pouvoirs fédérés. Mais tout se décompose peu à peu en profit des autres pouvoirs.</i> (Pre-test-text condition-111) (Each reform takes out competences in order to allocate them to the substate powers. But all is <u>breaking down</u> little by little to the benefit of the other powers)
Transfer	<i>attribuer</i> ('allocate'), <i>confier</i> ('entrust'), <i>déléguer</i> ('delegate'), <i>délégation</i> ('delegation'), <i>donner</i> ('give'), <i>distribuer</i> ('allocate'), <i>obtenir</i> ('obtain'), <i>passer de ... à ...</i> ('pass on to'), <i>recevoir</i> ('get'), <i>redistribuer</i> ('reallocate'), <i>répartir</i> ('share out'), <i>répartition</i> ('sharing out')	<i>Le pouvoir qu'elles reçoivent est pris à l'Etat fédéral pour ainsi le donner aux communautés et régions</i> (Pre-test-full condition-003) (The power they receive is taken from the federal State in order to <u>give</u> it to communities and regions) <i>une forme de fonctionnement d'un Etat où certaines compétences sont gérées par l'ensemble du pays alors que d'autres sont réparties par régions ou communautés</i> (Post-test-text condition-013) (a form of functioning of a State where some competences are dealt with by the country altogether while others are <u>distributed</u> among regions or communities)

Table 8. Frequency of the different onomasiological profiles in the different subcorpora

Domain	Experiment					Post-test			
	Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4
Game	4	12	3	18	***	4	6	1	6
Complexity	22	15	26	5	***	8	12	9	4
Construction	41	37	33	55		12	33	17	16
Deconstruction	47	35	48	63	*	26	29	18	25
Transfer	31	89	33	78	***	30	38	25	36
TOTAL	145	188	143	219	***	80	118	70	87

(Q1 = control, Q2 = full, Q3 = image, Q4 = text; significance levels: * < .05, *** < .001)

tended to behave similarly, inasmuch as they all referred equally frequently to the game, complexity, deconstruction and transfer interpretations. This tendency however was different for the construction interpretation, which appeared significantly more prominently in descriptions from participants from the full condition.

On a more global level, it should be noted that the participants from the full condition appeared to produce significantly more utterances related to the different interpretations of the Tetris metaphor than other participants ($X^2=14.499$, $df=3$, $p<.005$). This observation, combined with the observation from the experimental intervention that participants from the text condition produced more utterances that related to possible interpretations of the Tetris metaphor, might

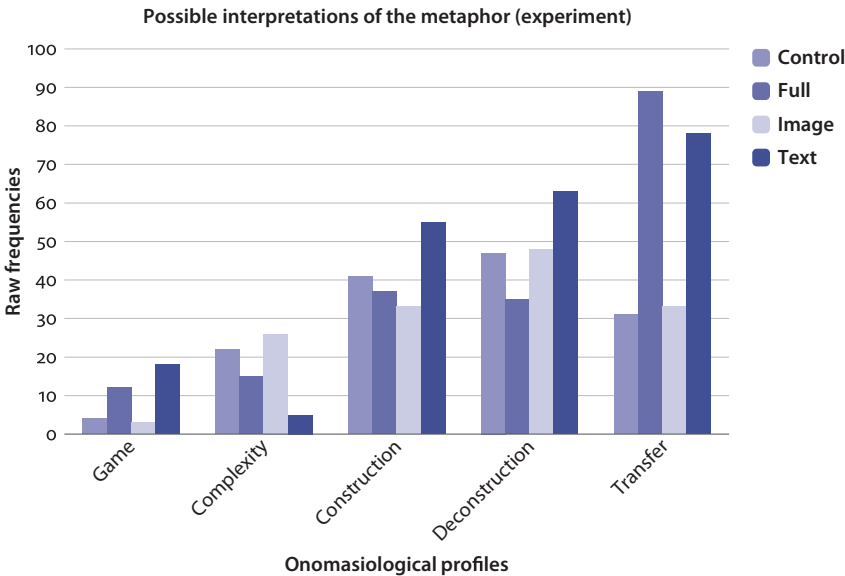


Figure 1. Frequency of different onomasiological profiles in the different subcorpora (experimental intervention)

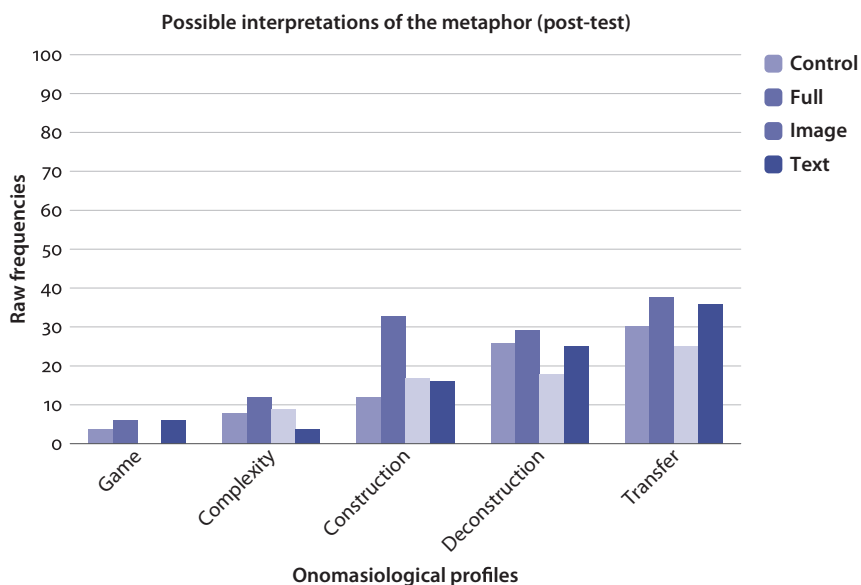


Figure 2. Frequency of different onomasiological profiles in the different subcorpora (post-test)

suggest that reading the text has a more direct influence on the representations of the participants, but that this influence decreases over time, whereas being exposed to the image *and* reading the text might have a longer impact on the participants representations of Belgian federalism.

5. Discussion

The aim of this article was to study the impact of the Belgian Tetris metaphor on citizens’ representations of Belgian federalism. Using an original newspaper article (including text and an image) produced in a natural setting, in which Belgian federalism had been explicitly compared to a Tetris game, we developed an experimental test, including the experimental intervention and a post-test, in which the participants, who had been exposed in various degrees to relevant input material (no input, image, text, image and text), were asked to freely describe their own representation of Belgian federalism. These descriptions were analysed using formal, keyword and content analyses based on relevant semantic fields associated with the Tetris metaphor. In doing so, it was our intention to determine the extent to which differing levels of exposure to the Tetris metaphor resulted in different representations of Belgian federalism and to which this potential influence of the

metaphor endured over time. The different conclusions that can be drawn from our results are summarised below.

At first, our data did not make it possible to claim that the Tetris metaphor in itself has a direct impact on representations of Belgian federalism. This tendency is indirectly confirmed by the fact that descriptions from citizens who were exclusively exposed to the visual stimulus (the image of Tetris) did not produce descriptions that differed significantly from those of citizens from the control condition. However, our results showed that participants who were exposed to textual information tend to produce longer descriptions; to use different words in their descriptions, as suggested by the keyword analyses; and to frame these using different semantic fields, as confirmed by the content analyses. Indeed, the subjects who read the text tended to highlight to a greater extent the notion of transfer of competences from the federal level to the substate level, whereas citizens from the control condition and from the image condition tended to focus on the complexity of the system in general, without further specifying this notion of transfer of competences. These different observations seem to confirm that reading the text had an impact.

This first main conclusion leads us to reframe the central question of our research and to shift our focus of attention to the role of the Tetris metaphor on the text's global coherence. More specifically, considering that the metaphor explicitly appeared in the title of the article and that the mapping between the domains of Belgian federalism and the Tetris game was directly and deliberately realised in the text and reinforced by other lexical units (such as *block* for instance), it is hard to understand the text without acknowledging the central role of the metaphor in the way the author had structured the textual information. These considerations lead us to think that the metaphor did have an indirect impact on citizens' representations in that it plays a central role in establishing the text's global coherence. However, further research is needed to determine the exact nature of the role of the metaphor on the text's coherence. This will make it possible to assess to what extent the observed influence of the text on the citizens' representations can be attributed to the Tetris metaphor itself and to what extent this metaphor has a facilitating effect on the integration of textual information.

Turning to the nature of this impact, our results suggest that the influence of the text is short-lived. Indeed, the different analyses performed on descriptions from participants in the post-test did not reveal any significant differences between the different experimental conditions. Furthermore, further comparisons between citizens' descriptions in the experimental intervention and the post-test showed that the influence of the text decreased drastically, as reflected by the length of the descriptions, or the much less frequent references to the notion of transfer of competences in descriptions from citizens who had been exposed to

the textual material. When looking more specifically to the results of the post-test, an interesting tendency emerged however, namely the fact that the citizens who had been exposed to the visual and the textual stimulus (full condition) tended to produce more utterances related to the possible interpretations of the Tetris metaphor. Although this was the case for the five semantic fields which were analysed, this was only significant for the construction interpretation. This finding suggests that participants who had been exposed to more stimuli tended to integrate more information in their long-lasting representations of Belgian federalism. More specifically, the prominence of the construction domain might function as an indication that the Tetris metaphor has in the long-run been interpreted as an instance of the conceptual metaphor *ABSTRACT SYSTEMS ARE BUILDINGS*. Although appealing, this hypothesis needs, however, to be verified by further experimentation.

6. Conclusion

In political discourse, metaphors appear to function as cognitive cues making it possible to present complex realities in more familiar ways. This concretely means that metaphors are mobilised by political actors in a specific communication context to make sense of particular political processes. Our study aimed to assess to what extent such metaphors might influence the citizen's comprehension of such political processes by looking more particularly at the possible communicative effects of the Belgian Tetris metaphor. Though our study does not allow us to claim that the use of such a metaphor in itself will directly determine the mental representations of the citizens on Belgian federalism, it suggests that the metaphor may have had an indirect impact in helping the reader to integrate the textual information and to understand (at least some aspects of) these complex political processes. In this way, metaphors may be said to have had an impact on individuals.

Where to go from here? Avenues for future work point in, at least, two directions. On the one hand, the nature of metaphors needs to be further investigated. When looking at political discourse, an important distinction has to be made between pedagogical metaphors, which try to simplify a complex reality, and strategic metaphors, which try to ‘sell’ a given reality. While the distinction between these two types might be somewhat theoretical and should not exclude the possibility that a metaphor could be of both types, future research has to address the understanding of the circumstances of the metaphor's production and its underlying objective if we want to understand more finely its possible reception by individuals. On the other hand, the study of the impact of metaphors should seek to grasp the very nature of this impact. Thus, the different kinds of impact should be theorised. For political scientists, it means differentiating not just between

impacts on political opinions and impacts on political attitudes, but also between short-term, mid-term and long-term effects. For linguists, comparisons between two or more metaphors, different in their nature and in their framing, represents a promising path of research, especially when trying to understand their interaction and their circulation between individuals.

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Appendix

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).

Source : “Le Soir”, 13–14/07/13, p. 8, written by Pierre Bouillon

The Belgian Tetris

From 1831 to 1970, Belgian politics came down to the central state, the provinces and the municipalities. Except for the powers devolved to the local authorities, the State took 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 (henceforth called the federal state) to redistribute them to federal authorities. This is the big Belgian Tetris, where we see the upper floor that is falling apart (decomposing), block by block, to the benefit of other authorities. In certain cases, the legislator is transferring homogeneous blocks (like education, handed over to the communities in 1989). In other cases, what is involved is just transferring some elements of a competence (this is the case with fiscality: the federal state remains competent but has 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). And the ones for which each power has some possibility of intervention. In the area of employment, for instance, the (federal) State is responsible for certain domains (unemployment legislation, for instance) and the Regions are in charge of other ones (training courses for unemployed people). Source : “Le Soir”, 13–14/07/13, translated by Julien Perrez and Graham Low.

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