Metaphors, political knowledge and the basic income debate in Belgium

An experimental study of the framing impact of metaphors on political representations

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The framing impact of political discourses has long been attested for. Metaphors in particular are known to ease the understanding of complex concepts and processes. Yet, the question remains to what extent metaphors do work the same on different recipients? Based on an experimental design, we test a potentially key moderating variable in the study of political metaphors: political knowledge. Our experiment aims at determining the extent to which the confrontation of individuals to arguments and metaphors impacts their preferences regarding the implementation of a basic income in Belgium. In particular, we hypothesize that the marginal effect of metaphors as cognitive shortcuts decreases when political knowledge increases. Our findings suggest that some metaphorical frames are more successful than others, hereby supporting the idea that the aptness of the metaphorical frame is a key factor when conducting experiments. We conclude that political knowledge is an important variable when analyzing the framing effect of metaphors, especially when it goes about very low or very high levels of political knowledge. The insertion of metaphors in political discourses may easily succeed in rallying individuals behind a given cause, but this would only work if participants have a lower knowledge of politics.

Keywords: metaphorical reasoning, basic income, experiment, political knowledge, political metaphor

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1. Introduction

The framing potential of metaphors has been widely addressed in the literature (Bougher, 2012; Charteris-Black, 2011; Lakoff & Johnson, 1980; Lakoff, 1996). However, their effective political impact has rather been assumed (Perrez & Reuchamps, 2015a). In particular, the underlying mechanisms through which the influence of metaphors on political representations and opinions occurs are still debated today. In this regard, the systematic review of Boeynaems, Burgers, Konijn, & Steen (2017a) outlines that while studies embedded in a Critical Discourse Analysis (CDA) approach find that metaphorical framing is always effective, this is less the case for studies based on an experimental design (Boeynaems *et al.*, 2017a; see also Thibodeau, Fleming & Lannen, 2019) which tend to depict more nuanced results (see for example, Steen, Reijnierse, & Burgers, 2014; Thibodeau & Boroditsky, 2011, 2013). Accordingly, a growing number of scholars using experiments now support an *indirect-effect* model, arguing that the persuasive effect of metaphorical framing is more complex and does not affect all participants the same way (Boeynaems, 2019; Panzeri, Di Paola & Domaneschi, 2021; Perrez & Reuchamps, 2015a; Reuchamps, Dodeigne & Perrez, 2018; Steen *et al.*, 2014).

With this debate in mind, this article has two main objectives. Firstly, it aims at assessing the (direct) framing impact of arguments and of metaphors on individuals' preferences regarding the introduction of a Basic Income (henceforth: BI) in Belgium. Secondly, our contribution investigates the (indirect) effect of metaphors among citizens (i.e. why certain profiles of citizens are more impacted than others) by focusing on the role of a key moderating variable, namely the degree of political knowledge of the participants. Indeed, political knowledge is known to be an important predictor of political behaviors and attitudes (Delli Carpini & Keeter, 1996).

The experiment on which this paper builds relies on real-life metaphors and tackles a topical political issue, i.e. the opportunity to implement a BI system in Belgium. BI is defined as "an income paid by a political community to all its members, on an individual basis, without means-test or compensation requirement" (Vanderborght & Van Parijs, 2005, p.1). The case of BI appears to be particularly relevant in the current political context as its implementation is being debated in several countries. Opposing arguments run against each other in the academic literature but also in society in general (Belorgey, 2000; Legein, Vandeleene, Randour, Heyvaert, Perrez & Reuchamps, 2018; Maniquet & Neumann, 2016; Tobin, 1965). Given the open character of the debate, we expect citizens to be easily influenced in their position in favor or in disfavor of the implementation of a BI.

The article is structured as follows. Section 2 discusses the literature focusing on the (direct and indirect) framing impact of metaphors and pays particular attention to one key moderating variable – i.e. the level of political knowledge. Section 3 presents the design of the experiment and its main findings are reported in Section 4. We elaborate on both the direct impact of arguments and metaphors as well as the interactive effect of the variable political knowledge on participants' preferences about BI. We show that arguments are impactful but not all kinds of metaphors. We also demonstrate that metaphors might succeed in rallying someone behind a cause or preventing the cause's support but only for respectively very low or very high levels of political knowledge, not for average levels. In Section 5, we discuss the implications of this moderating role of political knowledge and propose avenues for future research.

2. Understanding the (indirect) effect of metaphors on citizens' preferences

2.1 The framing impact of (political) metaphors

In cognitive linguistics, metaphors are recognized as a central component of human cognition for abstract conceptualization and reasoning (Johnson, 2010). Metaphors are understood as conceptual devices through which individuals can make sense of new situations by relying on more familiar concepts (Kövecses, 2010; Steen, 2011). Metaphors are "cognitive structures that help organize our knowledge of the world" (Brugman, Burgers & Steen, 2017, p. 4). Central to this cognitive process is a mechanism of analogical reasoning based on the mapping of a concrete *source domain* of experience onto a more abstract *target domain*.

Considering the abstract nature of political concepts, the domain of politics is a fruitful ground for the study of metaphors (see for instance Semino, 2008). Not only do metaphors materialize political concepts (Lakoff, 1996), they also have the potential of (indirectly) passing on hidden ideologies (Goatly, 2007) and can be used as framing devices to present a particular issue from a particular perspective "in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation" (Entman, 1993, p. 52; see also Burgers, Konijn & Steen, 2016). As Koller (2009, p. 121) puts it: "metaphor helps construct particular aspects of reality and reproduce (or subvert) dominant schemas".

In their systematic review of the effects of metaphorical framing, Boeynaems *et al.* (2017a) suggest that scholars widely acknowledged the impact of metaphorical framing on people's (political) representations. The question of the impact

of metaphors has been addressed in various types of political discourses (e.g. elite discourse, media discourse or citizen discourses) (see for instance Charteris-Black, 2011, 2013; Debras & L'Hôte, 2015; L'Hôte, 2012; Legein *et al.*, 2018; Musolff, 2004; Perrez & Reuchamps, 2015a, 2015b; Reuchamps *et al.*, 2018;). Yet, the (automated) presence of a metaphorical effect, its causal direction and the strength of the effect are still heavily debated. Studies embedded in a Critical Discourse Analysis (CDA) approach find that metaphorical framing is always effective, while this is not the case of (all) studies based on a response-elicitation approach (REA) (i.e. an experimental design) (Boeynaems *et al.*, 2017a; see also Thibodeau *et al.*, 2019).

In this regard, the contrast between the two studies by Thibodeau and Boroditsky (2011, 2013) and the study by Steen *et al.* (2014) is a case in point. Whereas the former found a main effect of different metaphors for crime on citizens' political preferences (when crime was presented as a beast, the participants tended to be more in favor of enforcement measures), the latter explained that these findings could be influenced by methodological choices, such as the absence of a control group and the fact that the initial metaphorical frame of the stimulus text was supported by other metaphorical words. In a replication study, that had been adapted to address these methodological shortcomings, Steen et al. (2014) found that simply talking about crime, independently from the metaphorical frame that was used, enhanced the participants' inclination towards enforcement measures. These (contrasted) findings outline that the political impact of metaphors – as well as the strength of the impact – is not as automatic as one would claim. Building on this, a growing number of scholars support an indirect-effect model, arguing that the persuasive effect of metaphorical framing does not affect all participants in the same way (see for instance Boeynaems, 2019; Panzeri, Di Paola & Domaneschi, 2021; Perrez & Reuchamps, 2015a; Reuchamps *et al.*, 2018; Steen *et al.*, 2014).

In addition to Boeynaems *et al.* (2017a), a number of other systematic reviews in the literature tend to illustrate the importance of addressing potential moderating variables. For instance, Sopory and Dillard (2002) provide a review of experimental studies dating from 1983 to 2000 with the aim of evaluating the persuasiveness of metaphor by comparing literal and metaphorical language. Overall, they conclude that the metaphorical messages display a stronger persuasiveness than the literal ones. They state that three moderating factors provide potential explanations for metaphor persuasiveness: (1) metaphor position (i.e. whether the metaphors are positioned at the beginning, the middle or the end of the message), (2) metaphor novelty, and (3) familiarity of the target (i.e. participants with higher knowledge levels on the target were more persuaded by the metaphorical messages than by the literal messages). These results hold consequences regarding

metaphor persuasiveness, which we also address in the present study. The results of the first two factors (position and novelty) suggest that the characteristics of the figurative framing can play an important role to determine their persuasiveness. The third factor (familiarity) implies that the knowledgeability of the participants regarding a given topic can also contribute to the persuasiveness of metaphors.

In her 2018 review, Van Stee suggests that an update of Sopory and Dillard is necessary given the growth in persuasion studies of metaphors. In this respect, she conducted a meta-analysis of studies dating from 2001 to 2015. As in the 2002 systematic review, Van Stee (2018) demonstrated that metaphorical messages are more persuasive than literal messages. In addition to previous findings, she also found that the message format (i.e. written vs. audio) comes into play when analyzing metaphor persuasiveness.

Similarly, Brugman, Burgers & Vis (2019) conducted a meta-analysis in the domain of political communication. However, they did add a new layer to the analysis of persuasiveness as they did not only take into account studies focusing on metaphorical-word frames, but they also looked at research focusing on metaphorical-concept frames. According to them, the difference between both types is that the former analyses persuasiveness at the level of language (i.e. 'based on the presence of metaphorical expressions that correspond to [certain] metaphorical models'), whereas the later focuses on the persuasiveness at the level of concepts (i.e. 'based on the presence of expressions [which can be metaphorical, but they do not need to be] that more generally reflect the semantic relations underlying the metaphorical levels') (Brugman *et al.*, 2019, p.5). Overall, this meta-analysis showed similar results to the previous analyses, that is that metaphorical frames (whether word frames or concept frames) are more persuasive than literal messages, though the statistical difference in this study remains small.

As becomes apparent from these systematic reviews, the question is thus not so much to know if metaphors have a direct impact on the citizens' preferences, but rather to understand under which conditions they might influence them (Krennmayr, Bowdle, Mulder, & Steen, 2014). This means that studies trying to address the framing impact of metaphors should adopt a more indirect model and consider a series of parameters as potential moderators of this framing effect (see Boeynaems, 2019, pp.195–206 for an overview).

Among these parameters, there is the nature of the metaphorical mapping in itself (degree of conventionality, degree of complexity; see Boeymans *et al.*, 2017b; Reijnierse *et al.*, 2015) and the nature of its realization, for instance, to what extent the mapping is supported by different linguistic realizations (extendedness, see Reijnierse *et al.*, 2015), or to what extent the mapping is realized through deliberate or non-deliberate metaphors (deliberateness). A second parameter is the par-

ticipants' perception of the mapping (Boeynaems, 2019). This is the degree to which participants perceive the mapping's characteristics, such as its complexity, its conventionality or its aptness, i.e. "the degree to which a metaphor vehicle captures important features of a metaphor topic" (Thibodeau & Durgin, 2011).[1] Finally, a third series of parameters relates to personal characteristics of the participants themselves, such as their psychological traits, their political affiliation and preferences or their level of political knowledge (see for instance Reuchamps *et al.*, 2018).

Our contribution follows the indirect-effect model of figurative framing and concentrates on the moderating effect of one recipients' characteristic: their level of political knowledge. In this respect, we argue in the following section that metaphors may operate as cognitive resources that can shape the preferences of less informed individuals regarding the introduction of a BI system in Belgium.

2.2 Studying recipients' characteristics: the moderating impact of political knowledge

Political knowledge is commonly depicted in the literature as the "range of factual information about politics that is stored in long-term memory" (Delli Carpini & Keeter, 1996, p. 10). The extent to which individuals are familiar with factual information on the political system is expected to play a role in the way they react to political issues and express political opinions.

For instance, political knowledge[2] has been proven to be influential in both citizens' preferences and behavior. Higher levels of knowledge of the political system lead to higher levels of political trust, i.e. the extent to which citizens trust the political institutions (Claes & Hooghe, 2017). Citizens' behavior also depends on the extendedness of their knowledge of politics: more informed citizens tend to turn out more than less knowledgeable citizens (Larcinese, 2007; De Winter, Ackaert, Meulewaeter & Dumont, 2014). This also works in terms of electoral

1. Studies have suggested that the mapping's characteristics such as conventionality/novelty and aptness are thought to have an impact on processing fluency, i.e. how quick and easy a metaphor can be processed (see Thibodeau & Durgin, 2011). Hence, processing fluency is another important parameter in explaining potential framing effects. However, this parameter would require a different type of experimental study and thus falls out of the scope of the present study.

2. Political knowledge is often studied as a component of the broader concept of political sophistication, which also encompasses political participation, exposure to media or political interest (Dassonneville, 2012; Luskin, 1987) – even though some scholars also study political knowledge on its own, as the main indicator for the level of political sophistication of individuals (André & Depauw, 2017).

volatility: low-informed voters are more likely to change their mind during the campaign about which party to cast their vote for (Dassonneville, 2012). Less knowledgeable citizens would also vote less 'correctly', i.e. not selecting the party that best represents their ideological preferences (Boonen, Pedersen & Hooghe, 2017). What thus emerges from the literature is that political knowledge matters for political preferences and behavior. The way citizens think, feel and act politically is influenced by their degree of knowledge of the political system.

What is of interest for this study, though, is not least the direct impact of political knowledge but its role as *moderator* in a framing effect. Ten years ago, Lecheler and De Vreese (2012, p.189) indicated that there was no consensus in the literature on the role of political knowledge: "One group of scholars finds less knowledgeable individuals to be more susceptible to framing effects, ascribing such effects to the inability of low-knowledge individuals to counterargue a framed message. A second group suggests the opposite, arguing that only knowledgeable individuals possess an adequate mental stockpile to process a frame." When studying the role of political knowledge in metaphor processing, some of the insights come from a recent experiment analyzing the impact of metaphors on citizens' preferences vis-à-vis regional autonomy in Belgium (Reuchamps *et al.*, 2018). This experiment showed that respondents with a lower level of political knowledge were more influenced by the experimental conditions than citizens with a higher political knowledge. This finding is in line with psycholinguistic research that has already investigated the interaction between the level of prior knowledge and text structure in reading comprehension processes, whereby readers with a lower level of prior knowledge tend to rely more on the presence of textual cues to build their mental representations of a text (see for instance, Anderson & Pearson, 1984; Caillies, Denhière & Kintsch, 2002; Kendeou & van den Broek, 2007; McNamara & Kintsch, 1996; McNamara, Kintsch, Songer & Kintsch, 1996). Consequently, while reading a text, people who are acquainted with certain topics will create mental images based on the frames they already possess, a process that is much more difficult for people with less or no prior corresponding knowledge.

In this article, we investigate the framing effect of metaphors and we argue that the presence of the metaphor helps citizens with lower level of political knowledge to construct a representation of a given political topic, whereas citizens with a higher level of political knowledge do not need it. More specifically, we hypothesize that *the potential positive effect of a metaphor frame on respondents' opinion (vs. the absence of a metaphorical frame) decreases as the respondent's level of political knowledge increases.*

3. Method: an Experiment on French-speaking Belgian Citizens

3.1 Set up of the experiment

We adopted an experimental research design for three reasons. Firstly, experiments give us evidence of cause and effect by demonstrating what happens when something is changed while everything else remains the same (Coleman, 2019), hence allowing generating data in which the impact of a metaphor about a political issue can be distinctively assessed. Secondly, experimental research designs are well suited for theory-testing (Morton &Williams, 2008), which is the main research objective of this study. Finally, this article is also a response to the call of Noguera and De Wispelaere (2006) to develop the use of experiments to study the political feasibility of BI (Legein *et al*., 2018).

In practice, we designed an experiment based on different versions of an input text about the potential introduction of the BI in Belgium to test the impact of arguments and metaphors on the political preferences of participants. We found inspiration for our input text (see Box 1) in an article from the Belgian newspaper *Le Soir* (29 July 2015).

> Some people propose the idea of a universal allocation, also called – depending on the country – basic income, unconditional basic income or citizen's income, which can be defined as: 'an income paid by a political community to all its members, on an individual basis, without means-test or work obligation'. *[We could see it as (ARGUMENT or METAPHOR conditions)]*
>
> If this idea has long been a soft utopia cherished by intellectuals (but defended by numerous Nobel Prize winners in Economics), it is gradually making its way. It has been tested in Canada, the United States and India, and was launched by Lula in Brazil; in Alaska, it exists through a redistribution of the state's energy profits.
>
> In our country, the debate is ongoing. And you, what do you think?

Box 1. Experimental text (Our translation from French into English)

Respondents were distributed in seven experimental conditions: a control condition, a neutral condition, two 'argument' conditions and three 'metaphor' conditions. The control group condition did not receive any stimulus (i.e. no text, no argument, no metaphor) and acts as a reference point for the comparison with the other groups (i.e. neutral text, arguments and metaphors conditions), in line with the recommendations of Steen *et al.* (2014). The neutral condition consists of the original text (i.e. no added arguments or metaphors, see Box 1) and allows

to measure whether the original text in itself could influence the citizens' preferences.

Besides the control and neutral conditions, the original text has been expanded in two ways. Firstly, two versions of the original text were expanded with an additional argument that either stressed the potential freedom provided by the BI (condition 3 in Table 1) or its unconditional character (condition 6 in Table 1). These additional arguments were embedded in the original text at the end of the first paragraph (see Box 1). Secondly, we expanded these two argument conditions with different metaphorical mappings, respectively the *FOUNDATION* metaphor (condition 4) and the *SPRINGBOARD* metaphor (condition 5) that relate to the argument of freedom, and the *POCKET-MONEY* metaphor (condition 7) that highlights the unconditional nature of the BI. Making a distinction between argument conditions and metaphorical conditions makes it possible to rule out the possibility that the potential framing effect of the metaphors could be attributed to another variable than the metaphor itself.

As can be seen from Table 1, we took care of maintaining the exact same structure and wording when expanding the text with an argument and/or a metaphor, in order to guarantee the comparability of the different stimuli and in order to be able to pinpoint the specific influence of the different metaphors. In this regard, all the additional sentences were introduced by the phrase "It could be seen as". The metaphorical conditions are similar to the argument conditions they relate to, except for the presence of metaphors (in the foundation and springboard conditions, the lexical items 'income' and 'live' were respectively replaced by the metaphors 'basic foundation' and 'build' and by the metaphors 'springboard' and 'launch themselves'). The pocket money condition, that relates to the unconditionality argument, follows the same structure (the lexical unit 'income' is replaced by the metaphor 'pocket money') but includes a more elaborate metaphor that explicitly compares the citizens of a state to children of a family, to ensure the naturalness of the sentence. Finally, in order to neutralize any potential effect of metaphorical support (cf. Steen *et al.* 2014), each metaphorical conditions contained two or three realizations of the metaphorical mapping ('basic foundation' and 'build' in the foundation condition, 'springboard' and 'launch themselves' in the springboard condition, and 'pocket money', 'children' and 'family' in the pocket money condition). The stimulus texts for each condition are presented in Table 1.

The experiment was conducted in French among 686 first-year college students from different disciplines (economics and management, social sciences, linguistics and literature, communication) from two Belgian universities (University of Louvain and University of Liège). In this regard, considering that our sample is

Table 1. Design of the experiment

Condition	Additional sentence	*N*
Condition 1: Control	No text	98
Condition 2: Neutral text	Original text	98
Condition 3: Argument (Freedom)	"It could be seen as an income provided by the State so that citizens can freely live their lives without worrying about material constraints."	104
Condition 4: Metaphor (*FOUNDATION*)	"It could be seen as a basic foundation provided by the State so that the citizens can freely build their lives without worrying about material constraints."	95
Condition 5: Metaphor (*SPRINGBOARD*)	"It could be seen as a springboard provided by the State so that citizens can freely launch themselves into life without worrying about material constraints."	99
Condition 6: Argument (Unconditionality)	"It could be seen as an income that citizens receive from the State by the simple fact that they are members of it."	97
Condition 7: Metaphor (*POCKET MONEY*)	"It could be seen as pocket money that citizens receive from the State like children receive it by the simple fact that they are members of the family."	95

only composed of French-speaking students, it cannot be considered representative of the Belgian population as a whole.

Nonetheless, considering the current state of the art on political metaphors and the moderating role of political knowledge, we seek to identify a causal mechanism, rather than its generalization towards the overall population. The respondents have randomly been distributed among the different experimental conditions, so as to balance their level of political knowledge and left-right self-positioning, their opinions about the current state of the economy as well as their previous knowledge of BI.[3] As the results of our analyses of the statistical differences between these groups on these variables did not produce any significant output (analyses available upon request), we are confident that any difference between the conditions could be attributed to the stimulus (i.e. neutral condition, argument and metaphor conditions) with greater certainty.

3. A large share of our sample did not know the concept of basic income before the start of the survey (63.7%). This question was asked in the questionnaire before the respondents had to read the text introducing the basic income and *a fortiori* before the confrontation with the arguments and the metaphors.

3.2 Coding and measurement of the variables

In order to verify our main hypothesis – the positive effect of a metaphor frame on respondents' opinion (vs. the absence of a metaphorical frame) decreases as the respondent's level of political knowledge increases –, we have used both multinomial[4] and logistic regressions. They both show that the same main variables are significant and the coefficients go in the same direction. In this article, we present only the results from the logistic regression because of the greater complexity to interpret the interactive terms in multinomial analyses. Indeed, comparing two sets of responses (i.e. the logit model of the logistic regression) simplifies the understanding of the already complex interactive terms' effects.[5]

Our dependent variable is the opportunity to implement a BI in Belgium. After having received one of the treatments (i.e. control, neutral, argument or metaphor conditions), participants were asked to indicate their preferences on a five-point Likert scale where '0' meant that participants totally disagreed with the introduction of the BI in Belgium and '4' that they totally agreed. The distribution of our dependent variable per condition is reported in Table 1. Descriptive data show that almost half the respondents are in favor of the implementation of the BI (46.9%) while the rest of the participants had a neutral point of view (28.3%) or were against the idea (24.8%). The logistic regression has been run on a dichotomized dependent variable. Politically and theoretically, it makes sense to distinguish respondents in favor versus all the others (i.e. those against and those with a neutral positioning), since we are interested in understanding whether a metaphor can influence this opinion. There is also a twofold statistical reason to proceed in this way. On the one hand, it yields two categories of approximately the same size. On the other hand, the variance among respondents who were against the BI was indeed larger than among the respondents with other answers to the 'opportunity to implement'-question.

Turning to political knowledge, we used a standard procedure taken from previous surveys in Belgium (Perrez & Reuchamps, 2015b; Reuchamps *et al.*, 2018). As we wanted to measure the respondents' factual political knowledge –

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4. The multinomial regression based on a three-category variable splitting the respondents into three groups (in favor, neutral and in disfavor of the implementation of the BI) gives similar results on the variables of interest. It is also the case for an additional multinomial regression based on a five-category variable (i.e. with no grouping of the respondents). Results of these models are available upon request.

5. Whereas the logistic regression shows interactive effects for only two categories, the multinomial regression yields effects for as many categories as included in the analysis, which means that reading the results implies to look at the interactive effects for each of them separately. Results of the multinomial models are available upon request.

confident that this kind of knowledge best mirrors the respondents' familiarity with national politics (Coffé, 2013; Dassonneville, Nugent, Hooghe, & Lau, 2020), we asked five multiple-choice questions related to Belgian politics (see Appendix 1). These were conceived as an additive index where participants answering in a correct manner to all items scored five on a 0–5 scale.

Finally, to determine the impact of the experimental conditions with more precision, we also controlled for variables that could affect the preferences of the respondents towards the opportunity to implement BI in Belgium. In particular, we controlled the participants' preferences for particular political and economic issues, namely their (1) interest for politics, (2) their positioning on a left-right scale, (3) their assessment of the state of the economy in Belgium, (4) their opinion on the role of the government in the management of the economy and (5) whether they agreed that 'important differences in salaries are necessary to stimulate the individual effort'. In addition, we also considered the potential impact of (6) the familial environment of our respondents, i.e. the type of profession of both parents, taken as a fair proxy of the socio-economic status of the family. We finally controlled for (7) the prior knowledge that respondents had of the BI that could interfere with the impact of the experimental text.

4. Results

Table 2 presents the results of our logistic regression in four steps: the first model presents the results for the control variables only. We also offer a model without any control variable (2). Then we display the model with the control variables but without the interaction terms (3) before reporting in model (4) the full set of variables.

In model 1 (control variables only), we observe that several variables regarding attitudes of respondents vis-à-vis socio-economic questions are statistically significant. Hence, left-right self-positioning presents a positive coefficient which indicates that every one point towards a more right-wing positioning on the 1–10 scale increases by 0.15 the log coefficient. This corresponds to respectively 11% and 35% in predicted probabilities to reject the implementation of a BI for the most extreme left (1) and right-wing positions (10) – all other things being equal. Likewise, we also observe that the attitude towards salary as a reward shows significant differences. Those who believe that personal efforts justify salary inequality are more likely to disagree (i.e. increase by 0.10 the log coefficient, from 14% to 31% in predicted probabilities from those who are at 0 to those who are at 5 on the scale). Finally, we observe that the respondents who had no prior knowledge about BI before the experiment are slightly less likely to reject the idea (predicted

Table 2. Logistic regression: impact of metaphor upon participants' preferences about basic income

	(1) Control variables only	(2) Experimental groups only	(3) Exp. groups and control variables	(4) Exp. groups, interaction terms and control variables
Impact of arguments and metaphors (ref: control group)				
	Beta (std. error)	***Beta (std. error)***	***Beta (std. error)***	***Beta (std. error)***
Neutral text		−0.21	−0.58	1.25
		(0.33)	(0.41)	(1.06)
Metaphor – POCKET MONEY		0.13	0.11	0.96
		(0.32)	(0.36)	(1.01)
Argument-Unconditionality		0.40	0.43	1.90
		(0.31)	(0.37)	(0.97)**
Metaphor – FOUNDATION		−0.14	−0.21	2.26
		(0.33)	(0.41)	(1.02)**
Metaphor – SPRINGBOARD		−0.07	−0.12	1.57
		(0.33)	(0.38)	(1.02)
Argument – Freedom		0.40	0.37	2.00
		(0.31)	(0.35)	(0.97)**
Political Knowledge	**0.11**		**0.12**	**0.60**
	(0.08)		**(0.08)**	**(0.25)****
Neutral text | Pol. Knowledge				−0.64
				(0.35)*
Metaphor – POCKET MONEY | Pol. Knowledge				−0.27
				(0.31)
Argument – Unconditionality | Pol. Knowledge				−0.50
				(0.31)
Metaphor – FOUNDATION | Pol. Knowledge				−0.90
				(0.34)***
Metaphor – SPRINGBOARD | Pol. Knowledge				−0.58
				(0.33)*
Argument – Freedom | Pol. Knowledge				−0.56
				(0.32)*

Table 2. *(continued)*

Control variables				
Mother's occupation				
Blue collar	0.51		0.63	0.61
	(0.51)		(0.52)	(0.53)
Employee	0.40		0.45	0.43
	(0.32)		(0.33)	(0.33)
Senior executive	0.66		0.75	0.78
	(0.38)*		(0.39)*	(0.39)**
Self-employed	0.14		0.16	0.19
	(0.40)		(0.40)	(0.41)
Father's occupation				
Blue collar	−0.08		−0.05	−0.08
	(0.50)		(0.51)	(0.52)
Employee	−0.32		−0.32	−0.31
	(0.47)		(0.48)	(0.49)
Senior executive	−0.30		−0.26	−0.28
	(0.47)		(0.48)	(0.49)
Self-employed	−0.28		−0.24	−0.27(0.51)
	(0.50)		(0.50)	
Prior knowledge of the basic income	0.36		0.38	0.36
	(0.21)*		(0.21)*	(0.21)*
Political interest	0.06		0.05	0.05
	(0.05)		(0.05)	(0.05)
Evaluation of the economy	−0.05		−0.05	−0.05
	(0.06)		(0.06)	(0.06)
Salary as reward	0.10		0.10	0.10
	(0.04)**		(0.04)**	(0.04)**
State intervention	−0.02		−0.02	−0.03
	(0.05)		(0.05)	(0.05)
Left-right self-positioning	0.15		0.16	0.15
	(0.05)***		(0.05)***	(0.05)***
Constant	−3.04	−1.21	−3.15	−4.48
	(0.69)***	(0.23)***	(0.75)***	(1.04)***
Observations	599	747	599	599
Log Likelihood	−309.59	−412.23	−304.72	−299.85
Akaike Inf. Crit.	651.17	838.46	653.45	655.70

Note.
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$

probability of 19%, in comparison to the 'informed' participants who present a probability of disagreeing of 25% – all other things being equal). Those control variables remain stable and significant across all four models. In models 2 and 3, we test the effects of group differences in metaphor used. With or without control variables, none of the metaphor groups significantly impact the participants' preferences vis-à-vis BI. That is why we focus our attention on model 4.

Interestingly, political knowledge and metaphor groups become significant once the interactive effect between the two types of variable is included (model 4). Indeed, we observe that both argument conditions have a statistically significant positive impact on participants' preferences vis-à-vis the control group (log coefficients are respectively of 1.90 for Argument – Unconditionality and of 2.00 for Argument – Freedom). The same is not true for the three metaphor conditions. When compared to the control group, only the *FOUNDATION* condition shows a statistically significant positive impact (2.26) while the *SPRINGBOARD* and *POCKET MONEY* conditions have no significant impact on participants' preferences about BI. Furthermore, political knowledge also presents a positive and statistically significant effect, establishing that politically knowledgeable voters are more likely to reject the idea of BI (i.e. increase of the log coefficient of 0.60 for each point on the 0–5 political knowledge scale).

Because the interactive effects are significant, model 4 validates our hypothesis that a participant's level of political knowledge has a statistically significant moderating effect on the impact of metaphor on the participants' preferences for BI. The interactive term being negative, it indicates that the effect of the metaphor is stronger for participants with a lower level of political knowledge and, conversely, the impact of the metaphor decreases when the level of political knowledge increases.

However, as our findings also suggest, political knowledge does not have a significant moderating effect on all arguments and metaphors included in our study. As stated by Brambor and colleagues (2006), it is possible to have different marginal effects of the independent variable for relevant values of the interactive variable, but not for others. Therefore, following the procedure they recommend (Brambor, Clark & Golder, 2006, p.74), the interactions were plotted to visualize and unpack the conditional effects. Figure 1 shows how the marginal effect of the metaphor varies with the level of political knowledge. The histogram at the bottom of the figure displays the distribution of observations along the x-axis while the dotted line indicates a null effect of the marginal effect.

The difference between the control group and the group exposed to both the freedom argument and the *FOUNDATION* metaphor is important. This difference materializes through the fact that the extremes of the gray zone do not overlap the dotted line on Figure 1. In particular, for these two conditions, when the level of

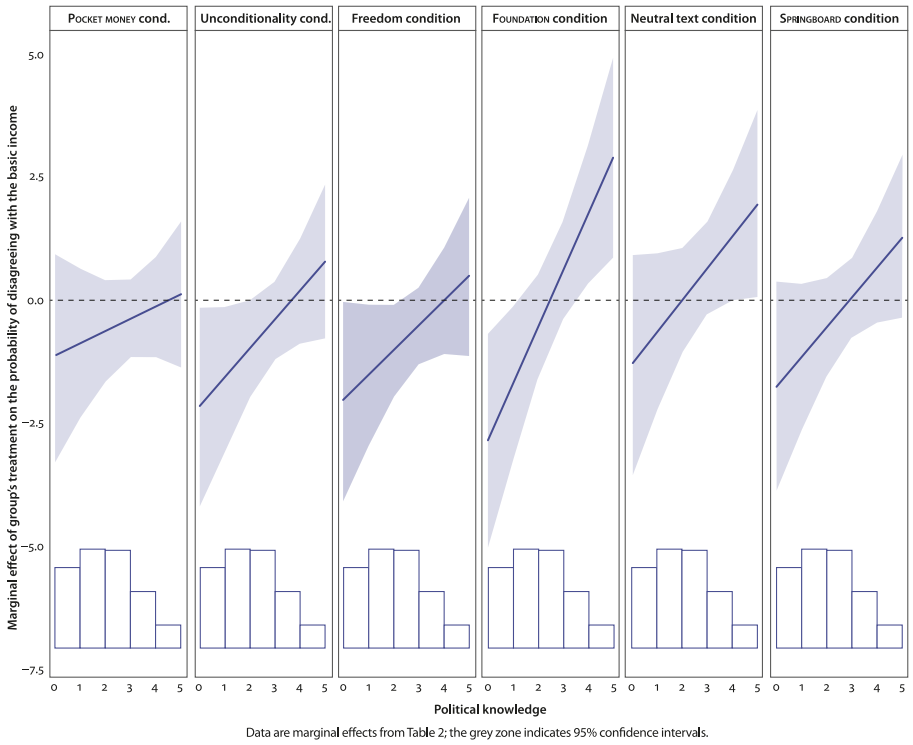

Figure 1. Marginal effects (probability of disagreement with the idea of basic income)

political knowledge is low, the probability is also low for them to position themselves against the implementation of the BI. On the contrary, when their knowledge of politics is good, these people will be keener on standing against the BI, with a proportion of 89% if their score is 5/5. Phrased differently, when it goes about extremes – be it very low or very high levels of political knowledge, the impact of the metaphor and of the argument varies a lot depending on the respondents' own level of knowledge on political issues. These results are interesting since the control condition – the reference point – depicts an opposite dynamic, hence indicating an impact of the metaphor and argument conditions. Indeed, in the control group, respondents with (very) low level of political knowledge tend to stand against BI (94% for a 0/5 score) while the opposition to BI diminishes with a high level of political knowledge (46% for a 5/5 score).

5. Conclusion

Our objective was to study the possible impact of arguments or metaphors on participants' preferences about basic income (BI) and in doing so to test whether the level of political knowledge can moderate this framing effect. In this regard, the experimental design tested three metaphorical conditions and two argument conditions. Our findings show that respondents exposed to an argument condition (i.e. unconditionality and freedom) tend to agree more with the implementation of the BI. In other words, the arguments managed to convince them. The picture is less clear when analyzing the impact of the three metaphorical conditions. While the respondents of the *FOUNDATION* metaphorical condition were influenced by this metaphor, this is not the case of the *POCKET MONEY* and *SPRINGBOARD* conditions that depict no significant differences vis-à-vis the control condition. In this regard, a closer look at the *FOUNDATION* metaphor also shows that, not only did this metaphorical condition have an impact on participants' preferences about BI (i.e. it reinforces the position in favor of the BI), it also had a greater impact on respondents than the non-metaphorical argument condition (i.e. freedom). This shows that metaphors can potentially have more impact on policy preferences than non-metaphorical arguments.

What is more, the results from our experiment demonstrate that the influence of arguments and metaphors on the preferences of the respondents also depends on their level of political knowledge. If the differences are minor when respondents have an average level of knowledge, weakly informed or strongly informed respondents behave in a very distinct way. When the level of knowledge is low, reading a text containing an argument reduces the likelihood to stand against the BI. Adding a metaphor (in this case, *FOUNDATION*) to the text reduces even more the likelihood of rejecting the BI. Participants with a low degree of political knowledge were more inclined to be convinced by an argument and even more so by one of the metaphors (*FOUNDATION*) as demonstrated by the marginal effects presented in Figure 1. On the other side of the political knowledge's spectrum, when respondents have a thorough knowledge of the political system, the argument enhances the probabilities of disagreement with the BI, and the *FOUNDATION* metaphor further increases this effect. The argument and the related metaphor probably stimulated their thinking on the complex policy problem and refrained them to support it.

These results confirm previous findings that political knowledge matters to explain the differential and indirect effect of metaphorical framing and hence invite for further research focusing on the differentiated impact of metaphors among citizens. Also, our results suggest that some metaphorical frames appear to be more successful than others, hereby supporting the idea that the aptness

of the metaphorical frame is a key factor when conducting such experiments (cf. Thibodeau and Durgin, 2011). The use of metaphors in political discourses may succeed in rallying individuals behind a given cause, yet, its differentiated impact must be better understood. Following Boeynaems (2019), we contend that more attention should be paid to variables related to the recipients' characteristics (i.e. what we did here for political knowledge) or to the aptness of the figurative frame.

In fact, even the labeling of BI varies depending on who uses the concept. As underlined by Vanderborght and Van Parijs (2005), choosing to use a specific denomination for this concept holds major consequences for its impact or its political feasibility. The label depicts the way the user considers the concept. In Belgium for instance, the green parties tend to use the concept of 'universal allowance' – which highlights the idea that everyone could benefit from it, while the liberals (right-wing parties) would mostly use the concept of 'basic income' – which suggests a starting point or a foundation from which to develop new projects in an entrepreneurship spirit. Beyond metaphors, the only usage of one term or the other could orientate citizens' preferences towards the support or the rejection of the principle of BI, hereby potentially influencing its political feasibility (Noguera & De Wispelaere, 2006). Hence, in line with the findings by Landau, Keefer & Swanson (2017) advising politicians to use opponents' language against them, we encourage further research to dig deeper into the role of language in a political debate and to question the influence of the usage of language on the political positioning of respondents.

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Appendix 1. Measuring political knowledge

The level of political knowledge of the respondents has been measured on the basis of the five following questions (* denotes the correct answer).

1. What is the Federal Parliament made of?
   a. The Chamber and the Government
   b. The Chamber and the Senate*
   c. The Chamber, the Senate and the Parliaments of the federated entities
   d. The Chamber, the Senate and the Government
   e. No answer

2. Among the following competences, for which is the federal Government not responsible?
   a. Foreign Affairs
   b. Justice
   c. Railway
   d. Education*
   e. No answer

3. For which of the following political positions does one not need to be elected?
   a. The MPs at the federal level
   b. The municipal councilors
   c. The ministers*
   d. The regional MPs
   e. No answer

4. In Belgium, …
   a. there is an equal share of Dutch and French speakers.
   b. There is a majority of Dutch speakers.*
   c. There is a majority of French speakers.
   d. No answer

5. What is the most important feature of a market economy?
   a. The mandatory membership of a trade union
   b. An extended ruling of the national government on the economy
   c. An active competition between companies*
   d. Prosperity for all citizens
   e. No answer

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