Willem Joris*, Leen d'Haenens and Baldwin Van Gorp

The effects of metaphorical frames on attitudes: The Euro crisis as war or disease?

<https://doi.org/10.1515/commun-2018-2021>

Abstract: Previous research has identified the frames and metaphors used in the reporting on the Euro crisis. War and disease turned out to be the two most frequently used metaphorical frames. Since coverage of the current financial crisis may have a tangible effect on public opinion, research into the effects of metaphorical frames on attitudes is needed. By employing two survey experiments, a student sample (N = 259) and a nonstudent sample (N = 507), this article traces the effects of both metaphorical frames. Our results show that individuals take over the metaphorical frame elements in their evaluation of the Euro crisis. Participants in the war conditions significantly more often referred to war when answering the open questions. Alternatively, when the Euro crisis was framed as a disease, participants were more likely to use words and sentences containing disease frame elements.

Keywords: Framing effects; metaphor; framing; experiments; Euro crisis

Introduction

Since 2009, the Euro crisis has hugely affected the global economy and presented an important challenge for the Euro and the structures and powers of the EU (Picard, 2015). The root of the crisis was a group of interconnected crises, involving various European and national economic and political factors related to fiscal and monetary policies. The weak banking systems, the sovereign debt problems in various countries, the lack of government trust, and the unstable construction of the Eurozone have led to the onset of the Euro crisis (Authers, 2012).

Since the 2007 credit crisis in the US, there has been a growing interest in the media research field with respect to the role of the media in the global crisis,

***Corresponding author: Willem Joris**, Institute for Media Studies, KU Leuven, Belgium,
E-Mail: willem.joris@kuleuven.be.

Leen d'Haenens, Institute for Media Studies, KU Leuven, Belgium,
E-Mail: leen.dhaenens@kuleuven.be.

Baldwin Van Gorp, Institute for Media Studies, KU Leuven, Belgium,
E-Mail: baldwin.vangorp@kuleuven.be.

given that news media play a role in covering and commenting on social, economic, and political crises (Chakravartty and Downing, 2010). Through their coverage, the media tend to control this European public sphere (Zografova, Bakalova, and Mizova, 2012) while playing a significant role in agenda setting and creating images of society (Aalberg and Curran, 2012). Moreover, the news media also provide frames enabling citizens to understand actual policy themes (Brewer and Gross, 2010).

Typically, in crisis situations, people start looking for information about causes and effects more than they usually do (Coombs and Holladay, 2004). For a majority of citizens the media are the main source of information on the Euro crisis (Ortner, 2014). Not only do the media select the topics they report on, they also define the way they cover them when it comes to angle, tone, etc. Through the information made available and the way it is accessed (Scheufele and Tewksbury, 2007), the media shape the perception of events of many millions of Europeans. The news coverage of the Euro crisis has created highly mediated portrayals of the Euro and the EU (Picard, 2015), which might have substantial implications for European identity and further cooperation within Europe. Therefore, research into the effects of metaphorical frames on attitudes is needed since coverage of the current financial crisis may have a tangible effect on public opinion.

Frames and metaphors

The news framing approach is central to our study. Frames are schemes of interpretation that may be used to organize information and to manage it efficiently (Lecheler and de Vreese, 2012). As defined by Entman (1993, p. 52), to frame is to *“select some aspects of a perceived reality and make them more salient in a communicating context, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation”*. Thus, frames are certainly not neutral (Berinsky and Kinder, 2006). By promoting some aspects of an issue, a frame implies what could be done. A frame might cause significant changes in attitudes when participants are exposed to them separately in different experimental conditions (Chong and Druckman, 2007).

In our study, we will measure the effects of metaphorical frames. Gamson and Modigliani (1989) labeled metaphors as an important kind of framing device (besides exemplars, catch phrases, and word choices). Metaphors often offer a rather clear mental image that suggests what is most relevant and important about a news event. Furthermore, metaphors are omnipresent in our everyday discourse, and they convey implications, allowing people to perceive the world in

a specific way by referring to familiar images (Thibodeau and Boroditsky, 2011). For instance, Lakoff and Johnson (1980) indicated that exposure to the war metaphor can generate a network of consistent inferences. The structure of an argument – with a vocabulary such as ‘enemy’, ‘threat to security’, ‘attack’, ‘defense’, etc. – reflects this, which may affect how people attempt to cope with social problems and how they collect considerations to make well-informed decisions.

According to the Metaphorical Framing Model of Ottati, Renstrom and Price (2014), the effect of metaphors contains two phases: activation and application. In the first phase, the metaphor is activated if the association with the specific issue or event, in this case the Euro crisis, is triggered. In the second phase, the metaphor may activate a cognitive structure that affects the individual’s impression, opinion or attitude of the target topic or event being described in the communication. Furthermore, the impact of metaphorical framing is predominantly covert (Thibodeau and Boroditsky, 2011), since individuals hardly ever recognize metaphors as an influential element in decision-making. Previous research about the effects of metaphorical frames showed mixed results (e. g., Reijnierse, Burgers, Krennmayr, and Steen, 2015).

Most studies found that metaphorical frames might influence individuals’ opinions and attitudes (e. g., Robins and Mayer, 2000; Thibodeau and Boroditsky, 2011). In Thibodeau and Boroditsky’s experiment (2011), participants had to read a news text about crime in which crime was framed as a beast or as a virus. Depending on the experimental condition, the participants preferred different policy measures. Participants in the crime-as-a-beast condition more often selected enforcement-oriented solutions than those in the crime-as-a-virus condition. Participants in the virus condition were more likely to prefer reform-oriented solutions such as prevention and reforming education. However, this approach has been criticized for the lack of a non-metaphorical control condition (Hartman, 2012; Steen, Reijnierse, and Burgers, 2014). This non-metaphorical control condition stands as the reference point to measure the potential frame effect (Reijnierse et al., 2015). The study of Reijnierse et al. (2015), also containing a non-metaphorical control condition, showed that the effects of metaphorical frames are subtler than has been assumed. Accordingly, a non-metaphorical control condition has been added to our study.

In this study we examined the influence of metaphorical frames on individuals’ attitudes. We assumed that the metaphorical frames in the coverage of the Euro crisis may affect these attitudes along the same lines as the reasoning reflected in the metaphorical images. The research question thus reads as:

RQ: Do metaphorical frames of the Euro crisis affect individuals’ attitudes in accordance with the reasoning as reflected in the metaphorical image?

Earlier studies on metaphors and frames of the Euro crisis

Some researchers studied the metaphorical frames of the recent economic crises. Bounegru and Forceville (2011) analyzed visual metaphors of the global financial crisis in cartoons. They identified four metaphors as most prominent: catastrophe/(natural) disaster, illness/death, and begging. Horner (2011) studied the metaphors used in public discourse of the US banking crisis in 2008. The most dominant metaphors in his research were illness, natural disaster, and mechanical failures. Esager (2011) analyzed the metaphors of the global financial crisis in English and Danish newspapers and found that movement, liquid, living being, medical treatment, war and sports, machine, building, journey, object, and natural phenomenon were the most prevalent metaphors. Most of these metaphors were also found in European newspapers during the Euro crisis (Joris, Puustinen, Sobieraj, and d'Haenens, 2015). This cross-national frame analysis in ten EU member states identified five dominant metaphorical frames: war, disease, construction, natural disaster, and games and sports.

In our analysis of the effects of metaphorical frames, we used the frames war and disease, because in a deductive study in the Low Countries using these five metaphorical frames, war and disease proved to be the two most dominant frames in the news coverage (Joris, d'Haenens, and Van Gorp, 2014). The fact that the frame elements in the experimental conditions are based on a thorough content analysis adds a great deal of external validity to our experiment.

Both the war frame and the disease frame are predominantly negative, but differ in scope and implications. The war frame characterizes a battle or clash between different actors, referring to war, fights, and weapons. The clash of interests between financial markets, rating agencies and/or the political world is very often discussed. This clash may increase the rivalry and violence between the actors. Possible solutions within this frame are counterattacks to defend a position, on the one hand, or peace and compromise, on the other. The war frame implies that the European leaders and/or the financial markets are the ones to blame for causing the crisis, or for not effectively solving it. If the Euro crisis is seen as a 'war', then penalties and sanctions for the weaker actors such as Greece apparently form the solution (e.g., Grexit). The war frame is habitually used to dramatize the crisis, and to create a scenario of chaos and uncertainty, as a war would lead to much financial and human damage. Journalists probably use the war frame because it is related to conflict, which is an important news criterion to attract readers (Galtung and Ruge, 1965). Furthermore, conflict is also more

likely if the journalist shows two sides of the story in order to meet professional standards of balanced journalism (Nieminen and Trappel, 2011).

The disease frame is constructed around the idea that the crisis is caused by an illness within a country or a financial institution. Picturing the Euro crisis as a disease implies that the crisis is beyond anyone's responsibility. If a disease frame is triggered, the individual may be afraid that anyone may suddenly come down with a disease. A crisis is an emergency in which a system or mechanism is seriously disturbed so that a remedy is required. This remedy will determine the future: Either the disease will be cured, or complete chaos and even death will follow. To cure the illness (e. g., a virus, an infection or stress) and to prevent possible contagion of other persons or countries, medicine, surgery (an amputation is fairly drastic) or a proper therapy is recommended (Joris et al., 2015).

The frames under study go beyond what is often done in studies on framing effects, that is using a one-sided design with two or more contrasting experimental conditions (Chong and Druckman, 2007; Igartua and Cheng, 2009): positive versus negative, black versus white. Most of these studies have found that opposing frames have significant impact when compared to one another. In our research, the two metaphorical frames (war and disease) are not absolutely opposing frames. This subtler approach wants to do justice to the nuances of a complex reality. Overall, we expect that the participants will more often express their opinions about the crisis with a reference to the metaphors activated in their experimental condition.

H1: Metaphorical frames will sway people's opinions in the direction of the frame.

Furthermore, we expect that the effect of metaphorical frames will depend on the magnitude and strength of the metaphors. A frame is defined as strong if the frame elements in the article (together and separately) clearly refer to the underlying metaphorical frame (i. e., war or disease). Weak frames are seen as subtler, since the link between target and base is weaker. For example, readers would more easily think about a disease when confronted with metaphors such as contagion, infection or a virus (strong disease frame) than when reading words as health, immunity or stress (weak disease frame). The categorization of the weak and strong frames is made based on the thorough content analyses of the metaphorical frames of the Euro crisis (e. g., Joris et al., 2014, 2015). We assume that strong frames will exert a strong effect on individual attitudes.

H2: Strong metaphorical frames will exert more effect than weak frames.

Although the media are the main source of information for most Europeans (Ortner, 2014), the news coverage of the crisis evidently does not affect all citizens equally. The potential effects may be moderated by individual-level factors such as political knowledge (e.g., Lecheler and de Vreese, 2011), motivation (e.g., Chong and Druckman, 2007), or values (e.g., Waheed, Schuck, Neijens, and de Vreese, 2015) as well as contextual moderators such as source characteristics (e.g., Druckman, 2001) or issue characteristics (e.g., Iyengar, 1991). Furthermore, the degree to which people rely on the media for understanding and interpreting events and other circumstances affects the perceptions of the news (Morton and Duck, 2001): the greater the media dependency, the greater the magnitude of the media effect.

In our study, we added ‘knowledge and awareness of the Euro crisis’ as an individual-level moderator. Robins and Mayer (2000) revealed that if the participant had access to existing relevant knowledge structures, the metaphorical framing effect was weakened. If the individual has little prior knowledge of a news event, direct application of the metaphor is most likely (Ottati et al., 2014). In contrast, individuals with strong opinions will draw upon chronically accessible alternative considerations that take precedence over the temporarily accessible considerations (e.g., Brewer, 2001). Furthermore, frequent exposure to a specific frame increases the accessibility and availability of the underlying considerations (Chong and Druckman, 2007). Finally, the Elaboration Likelihood Model suggests that it is more difficult to influence individuals who are motivated or can process messages (Petty and Cacioppo, 1986). So, we expect that the metaphorical frames under study will affect individuals with more knowledge and awareness of the Euro crisis less than the ones with less knowledge or awareness.

H3: Metaphorical frames will affect individuals with more knowledge and awareness of the Euro crisis less than the ones with less knowledge and awareness.

Method

Design

We conducted a 2 (metaphoric frame: war and disease) x 2 (strength of frame: strong and weak) post-test only between-subjects survey experiment. The experimental manipulations provided a tool for stimulating exposure to framing by randomly assigning participants to receive one form of the questionnaire or another (Brewer and Gross, 2010). Besides the four framing conditions, a control group was included in which participants were exposed to the news article without

frame elements. The non-metaphorical control group provided a reference point against which to judge the influence of the four frame conditions. Consequently, the design resulted in five experimental conditions.

Participants

Our research entailed two experimental studies with a view to generalizing the findings: a student sample versus a nonstudent, adult sample. Cappella and Jamieson (1997) noted that students differ in education, ideology, political knowledge and experience, and age from the overall population. Moreover, Brewer and Gross (2010) assumed that certain topics and frames might interact with the characteristics of a student sample. If the students are atypical in terms of characteristics relevant for the issue under study, then the use of this student sample might distort the results of the metaphorical framing experiment. Therefore, an adult sample was composed to generalize the results to the broader public.

Student sample. The data collection occurred between April 17 and May 26, 2015, and the total sample consisted of 259 Flemish students studying political sciences, communication sciences, economics, arts, or law. The sample contained more women ($n = 141$; 54.4 %) than men ($n = 118$; 45.6 %). The students were randomly assigned to one of the five experimental conditions: control condition ($n = 53$), conditions ‘war – strong framing’ ($n = 50$), ‘war – weak framing’ ($n = 50$), ‘disease – strong framing’ ($n = 56$) and ‘disease – weak framing’ ($n = 50$).

Nonstudent sample. The data collection occurred between July 3 and 21, 2015. In total, the nonstudent experiment included 507 Flemish participants, carefully recruited by iVOX, a Belgian research company (www.ivox.be), controlling for different attributes of the members of the sample, and representing the larger adult population: 254 women (50.1 %) and 253 men (49.9 %), aged between 21 and 39 years (32.9 %), between 40 and 59 years (40.0 %), and between 60 and 79 (27.1 %). These participants were randomly assigned to one of the five frames: control condition ($n = 100$), conditions ‘war – strong framing’ ($n = 97$), ‘war – weak framing’ ($n = 104$), ‘disease – strong framing’ ($n = 103$), and ‘disease – weak framing’ ($n = 103$).

Stimulus material and manipulation

The participants of both samples received an e-mail with a link to the online survey. First, all participants had to answer six questions to measure their knowledge and interest in news about the Euro crisis, using five-point Likert scales, going from “strongly disagree” to “strongly agree”: (1) My knowledge about

economy is good; (2) I am interested in news about the Euro crisis; (3) I am aware of recent events concerning the Euro crisis; (4) I know how the Euro crisis has arisen; (5) I follow the news coverage about the Euro crisis; and (6) I follow the news coverage about the Euro crisis with attention (Cronbach’s $\alpha = .909$). After completing these six questions, participants were randomly assigned to one of the five conditions and asked to read through a news article dealing with the Euro crisis. The basis of the article was identical, except for the metaphorical frames in the framing conditions (see appendix). The sentences and frame elements in the articles are effectively used in the news coverage about the Euro crisis, based on previous content analyses about the framing of the Euro crisis (Joris et al., 2014, 2015). In this way, the news story gave the impression of a realistic news article. The metaphorical frame elements per condition are listed in Table 1.

Table 1: Metaphorical frame elements per condition.

Condition	Metaphorical frame elements
Control	No frame elements added
War – strong	Frontal attack, (gun) sight, forearm, under fire, hit and strike, knife at the throat, ammunition, financial war, conflict, fight, D-Day
War – weak	In headlock, battle, hold on, losing ground, limited freedom, financial battle
Disease – strong	Risk of contagion, severe illness, infection, financial infusion, making healthy, debt virus, immunity, less breathing space, financial epidemic, diagnosis, therapy
Disease – weak	Nervousness, financial health, financial stress, less breathing space, nervy, immune, get healthy, excessive stress situation, diagnosis, therapy

The effect measurement of the metaphorical frames consisted of four components: root of the crisis and solutions for the crisis, vision towards the future of the Euro, and attitude towards the Euro and the EU. In the next paragraphs, we will present these components.

Root of the crisis and solution for the crisis. Two open-ended questions were presented to the participants: (1) In your opinion, what was the major root of the Euro crisis?; (2) In your opinion, what would be the most appropriate solution for the Euro crisis? These open-ended questions helped us to study whether the participants adopted the metaphorical frame elements. The answers to these open questions were analyzed in search of the presence (yes/no) of the dominant frames of the Euro crisis (Joris et al., 2015). Training led to high intercoder reliability scores (Krippendorff’s Alpha) based on a sample of 10 % of the answers of the nonstudent sample ($n = 51$): war ($\alpha = .85$) and disease ($\alpha = .90$).

Vision towards the future of the Euro. In all five conditions, the news article ended with the presentation of two opposing visions towards the future of the Euro: deeper integration of the Eurozone or breaking up the Eurozone altogether. In the online survey, the participants were asked to point out/select their personal preference of these two visions.

Attitude towards the Euro and EU. Furthermore, the effects of framing on the attitude towards the Euro were measured. Along the same lines as de Vreese (2010), this study made use of five questions with seven-point Likert scales to measure support for the Euro, ranging from “strongly disagree” to “strongly agree”: (1) The Euro is a good thing; (2) The Euro is important for the future of the EU; (3) Belgium will have more advantages than disadvantages from the Euro; (4) The Euro will affect the Belgian economy negatively; (5) The long-term gains of the Euro outweigh the short-term costs. Another seven-point scale was used to measure attitudes towards the EU, ranging from “strongly disagree” to “strongly agree”.

Results

Student sample

After reading the article, the participants were asked to answer two open questions about the roots and the solution of the crisis. Most answers were rather short, ranging from only a few words to answers of seven or eight sentences. The number of metaphorical frame elements in the answers was rather low ($Mean = 7.7\%$, $SD = .267$), since short texts obviously cannot contain many frame elements (e. g., d’Haenens, 2005). The use of metaphorical frame elements is illustrated by the following answers: “If it is not going well in some countries, other countries will also be infected”, “The banking system is sick”, and “It is important that countries work together to make sure the internal *conflicts* are not too large”.

Although no significant effects were found between all experimental conditions for the war frame, $F(4,254) = 1.892$; $p = .112$, nor for the disease frame, $F(4,254) = 1.520$; $p = .197$, the comparison of the individual conditions with the control condition showed one significant difference. Students in the ‘war – weak condition’ ($Mean = 8.0\%$; $SD = .274$) significantly more often used war terminology in their answers than in the control condition ($Mean = 0\%$), $t(49,000) = 2.064$; $p < .05$ (see table 2). No significant differences were found between the ‘war – strong condition’ ($Mean = 4.0\%$; $SD = .198$) and the control condition, $t(49,000) = 1.428$; $p = .159$. Although it seems that more disease-related frame elements were identified

in the answers of students in the ‘disease – strong’ and ‘disease – weak’ conditions, these differences are not significant, $t(101,235) = .772$; $p = .442$ and $t(82,152) = 1.237$; $p = .220$, respectively. Consequently, the first hypothesis is not confirmed.

Table 2: Percentage of answers with metaphorical frames by condition – student sample.

	War		Disease		Control group No frame
	Strong	Weak	Strong	Weak	
War	4.0	8.0*	3.6	0	0
Disease	0	4.0	7.1	10.0	3.8

Note: * = significant difference in comparison with control condition, $p < .05$

The degree of strength of the metaphorical frames does not seem to be a crucial factor. The students in the ‘war – strong condition’ used the war-related words less than those in the ‘war – weak condition’, thus contradicting our hypothesis 2. Similar results were found for the disease conditions. The participants in the stronger framing condition did not use more terms referring to disease than those in the weaker variant. Accordingly, the second hypothesis is not confirmed.

Furthermore, the conditions to which the students were assigned did not significantly affect the vision towards the future of the Euro (deeper integration versus breaking up the Eurozone), $X^2(4) = 2.430$; $p = .657$. In each condition, a broad majority was in favor of deeper integration (86.1 %), whereas 13.9 % of the participants favored a break-up of the current Eurozone. Furthermore, the attitudes in the student sample did not significantly differ between the conditions, neither for the attitude towards the Euro, $F(4,254) = 1.083$; $p = .365$, nor towards the EU, $F(4,254) = 1.323$; $p = .262$.

The results of the ANCOVA analysis showed that participants with more knowledge and awareness of the crisis did not more often use frame elements in their answers on the open questions than the ones with less knowledge and awareness, neither war-related frame elements, $F(1,253) = .011$; $p = .535$, nor frame elements referring to disease, $F(1,253) = .017$; $p = .897$. Consequently, the third hypothesis was not confirmed.

Nonstudent sample

Like the student sample, the number of metaphorical frame elements in the answers was rather low (*Mean* = 6.7 %, *SD* = .250). However, the nonstudent sample showed a significant difference between the conditions concerning the

answers on the open questions, both for the presence of war-related frame elements, $F(4,502) = 4.682$; $p = .001$, and for disease references, $F(4,502) = 2.915$; $p < .05$ (see Table 3). The answers on the open questions significantly more often contained frame elements referring to war in the ‘war-strong’ condition ($Mean = 9.0\%$; $SD = .292$) than in the control condition ($Mean = 0.9\%$; $SD = .100$), $t(117,259) = 2.655$; $p < .05$. In the ‘war – weak’ condition ($Mean = 7.6\%$; $SD = .268$), participants also referred significantly more often to war than in the control condition, $t(131,634) = 2.388$; $p < .05$. Furthermore, in the ‘disease – strong’ condition ($Mean = 6.6\%$; $SD = .254$), the participants significantly more often used disease-related frame elements than in the control condition ($Mean = 1.0\%$; $SD = .100$), $t(131,526) = 2.172$; $p < .05$. In contrast with the war frame, the weaker version of the disease frame ($Mean = 4.9\%$; $SD = .216$) did not result in a significantly higher presence of frame elements referring to disease than in the control condition, $t(144,058) = 1.646$; $p = .102$. Consequently, the first hypothesis receives very little support. Similar to the student sample, no differences were found between the strong and weak framing conditions, neither for the war conditions, $t(194,334) = .401$; $p = .689$, nor for disease, $t(197,249) = .610$; $p = .543$. Thus, the second hypothesis was not confirmed.

Table 3: Percentage of answers with metaphorical frames by condition – nonstudent sample.

	War		Disease		Control group No frame
	Strong	Weak	Strong	Weak	
War	9.0*	7.6*	0.9	1.0	0.9
Disease	2.0	0	6.6*	4.9	1.0

Note: * = significant difference in comparison with control condition

The conditions to which the participants were assigned had no significant effect on the vision towards the future of the Eurozone, $X^2(4) = .999$; $p = .910$. In all conditions, a broad majority was in favor of deeper integration (74.7%). Only a quarter of the participants preferred to break up the current Eurozone. Furthermore, the attitudes towards the Euro and the EU did not significantly differ between the conditions and the control condition, except for the attitude towards the Euro in the ‘disease – strong condition’ (see Table 4). Overall, the means of the strong variants are lower than the control condition and the weak framing conditions, although these differences are not significant.

Table 4: Attitude towards Euro and EU by condition on a seven-point scale – nonstudent sample.

	Attitude towards Euro		Attitude towards EU	
	Mean	Difference with control condition	Mean	Difference with control condition
Control condition	5.0		4.5	
War – strong	4.7	$t(194,841) = -1.701;$ $p = .091$	4.3	$t(195,576) = -.802;$ $p = .423$
War – weak	4.8	$t(202,813) = -1.298;$ $p = .196$	4.6	$t(200,679) = .332;$ $p = .740$
Disease – strong	4.6*	$t(197,701) = -2.511;$ $p < .05$	4.4	$t(198,751) = -.748;$ $p = .455$
Disease – weak	4.9	$t(201,073) = -.774;$ $p = .440$	4.4	$t(196,510) = -.511;$ $p = .610$

Note: * = significant difference in comparison with control condition

The results of the ANCOVA with ‘knowledge and awareness’ as moderator showed no significant difference in framing effect between participants with more knowledge and awareness of the Euro crisis and those with less knowledge and awareness, for both war-, $F(1,501) = .617; p = .433$, and disease-related frame elements, $F(1,501) = 1.349; p = .246$. So, the third hypothesis was not confirmed by the non-student sample.

Conclusion

In two survey experiments (i. e., student sample and nonstudent sample), we analyzed the effects of metaphorical frames in news items on individual’s opinions and attitudes towards the ongoing Euro crisis. The results only partly confirmed our first hypothesis, which predicted that metaphorical frames affect people’s opinions in the direction as suggested by the frame. On the one hand, participants in the experimental conditions were more likely to adopt the metaphorical frames in their evaluation of the issue than in the control condition. On the other hand, the results do not support a framing effect on the vision towards the future of the Eurozone, nor on the attitude towards the Euro or EU.

With regard to the answers on the open questions, the participants in the war conditions significantly more often referred to war when answering the open questions. Alternatively, when the Euro crisis was framed as a disease, participants were more likely to use words and sentences containing disease frame elements.

So, individuals in the experimental conditions used more metaphorical frame elements in their answers. However, it is not clear whether this was due to the fact that the respondents have adopted the metaphorical frame in their own evaluations of the Euro crisis – and have adopted the presented framing – or that the effect was simply a rebound of the wordings used in the stimuli. Although there is a higher occurrence of the metaphorical frames in the answers in the experimental conditions, the differences were not always significant in contrast with the control condition. In the nonstudent sample, three of the four experimental conditions showed a significant difference. Only the condition displaying weak varieties of the disease metaphor showed no significant effect. In the student sample, only one experimental condition turned out to be significantly different.

Furthermore, the results do not confirm our second hypothesis about the strength of the metaphorical frames. A strong metaphorical frame does not exert more effect on people than the weaker version. Although the association with the corresponding frame is more direct and clearer in the strong conditions in the nonstudent sample, no significant differences were found in comparison with the weaker versions. This finding may support the thesis that even the presence of a single frame element can activate a complete chain of reasoning (Van Gorp, 2010). As a result, even a *subtle* metaphor may trigger the underlying set of cultural values and expectations.

Additionally, our results suggest that the role of knowledge and awareness as a possible moderator in the framing process is minimal. Consequently, hypothesis 3 was not confirmed: Knowledge and awareness of the crisis played no role of significance in our study.

Discussion

Although the framing effect in our study is chiefly limited to the adoption of metaphorical frame elements in their evaluations of the Euro crisis, these results imply that these metaphors and wordings may also be used in future evaluations. Although it is rather naïve to presume that a single news article will directly influence an individual's cognitive schemes, the results revealed that the participants frequently adopt the jargon of the frames, and this may generate an effect on the future evaluations by these individuals as well as on others' evaluations. Additional research is required, as it is not clear whether the effect was due to the fact that the participants adopted the metaphorical frame in their own evaluations, or that the effect was only a rebound of the terms used in the news story.

An overall significant effect on attitudes towards the Euro or the EU was not found. Probably, the news about the crisis is only one consideration in the attitude formation towards the Euro and EU. However, these results may also call into question the existing beliefs and knowledge about the effects of metaphorical frames. If these results hold true in future research, they indicate that metaphorical framing may not be as significant an influence on political processes as many believe or want us to believe.

Manipulation check of the metaphorical frame elements. Possibly, the manipulation of the frame elements was not strong enough, and the differences between the different manipulations were probably too small. A categorization into weak and strong frames was made, based on the thorough content analyses of the metaphorical frames of the Euro crisis (e.g., Joris et al., 2014, 2015). However, it is important that subjects rate the weak frame indeed as weak, and the strong frame as strong. In future research it would be interesting to conduct a manipulation check of the frame elements, to make sure the manipulations worked well.

Sample size. In the student sample ($N = 259$), only one experimental condition was significantly different in comparison with the control condition. In the second sample ($N = 507$), three out of four conditions were significantly different. Probably, the student sample was too small in proportion to the size of the effect (as samples need to be larger when measuring smaller effects). In future research, the samples need to be large enough to measure these effects.

Assessing factual knowledge or more objective measures. In this study we chose to measure knowledge and awareness with self-reports. Perhaps this is why we found no moderating effects of knowledge/interests. In a follow-up study, it is recommended to measure this moderator by assessing factual knowledge or other more objective measures.

Other issues and moderators. We verified the effects of a set of metaphorical frames concerning one specific issue, the Euro crisis. The characteristics of the Euro crisis (salience and personal relevance) might have an impact on the results. Probably, this explains why the hypotheses in our research had to be rejected. Previous research indicated that differences in issue importance lead to differences in framing effects (Lecheler, de Vreese, and Slothuus, 2009). Future research about the metaphorical frames of other news events or topics, such as the current struggle to coordinate the asylum seekers in Europe, may be interesting to confirm our findings. Furthermore, in our study we only acknowledged one moderator variable (i.e., knowledge and awareness). In future research, other moderators such as values or media dependency could be included.

Period of survey. This study was executed more than five years after the start of the Euro crisis. This might have influenced the findings of our study, since

framing effects are less likely on established or long-term subjects (Chong and Druckman, 2007). Correspondingly, De Landtsheer (2009) stated that the rise and fall of metaphorical language was strongly related to the development of a crisis. The more frequently metaphorical frames are repeated, the weaker their functionality, as the original meaning of the metaphors tends to dilute.

What is the effect of metaphorical framing to our political attitudes? Based on the research design and results of this study, we may conclude that metaphorical framing is not as significant an influence on political processes as many believe. An overall significant effect on individuals' attitudes was not found. However, the study clearly revealed that the participants frequently adopt the frame elements of the stimulus material. Consequently, if news stories about a topic repeatedly contain negative metaphorical frames, individuals will more frequently use this jargon and negative perspectives in their future evaluations of that topic. In the longer run, we expect that these metaphorical frames will affect individuals' political attitudes in accordance with the reasoning as reflected in the metaphorical image conveyed in the media.

References

- Aalberg, T., & Curran, J. (2012). *How media inform democracy: A comparative approach*. London: Routledge.
- Authers, J. (2012). *Europe's financial crisis: A short guide to how the Euro fell into crisis and the consequences for the world*. London: FT Press.
- Berinsky, A. J., & Kinder, D. R. (2006). Making sense of issues through media frames: Understanding the Kosovo crisis. *The Journal of Politics*, 68(3), 640–656.
- Bounegru, L., & Forceville, C. (2011). Metaphors in editorial cartoons representing the global financial crisis. *Visual Communication*, 10(2), 209–229.
- Brewer, P. R. (2001). [Value words and lizard brains: Do citizens deliberate about appeals to their core values?](#) *Political Psychology*, 22(1), 45–64.
- Brewer, P. R., & Gross, K. (2010). Studying the effects of issue framing on public opinion about policy issues. In P. D'Angelo & J. A. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp. 159–186). New York: Routledge.
- Cappella, J. N., & Jamieson, K. H. (1997). *Spiral of cynicism. The press and the public good*. New York: Oxford University Press.
- Chakravartty, P., & Downing, J. D. H. (2010). Media, technology, and the global financial crisis. *International Journal of Communication*, 4, 693–695.
- Chong, D., & Druckman, J. N. (2007). A theory of framing and opinion formation in competitive elite environments. *Journal of Communication*, 57, 99–118.
- Coombs, W. T., & Holladay, S. J. (2004). Reasoned action in crisis communication: An attribution theory-based approach to crisis management. In D. P. Millar & R. L. Heath (Eds.), *Responding to crisis: A rhetorical approach to crisis communication* (pp. 95–115). Hillsdale: Lawrence Erlbaum Associates.

- De Landtsheer, C. (2009). Collecting political meaning from the count of metaphor. In A. Musolff & J. Zinken (Eds.), *Metaphors and discourses* (pp. 59–78). London: Routledge.
- de Vreese, C. H. (2010). Framing the economy. In P. D'Angelo & J. A. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp. 187–214). New York: Routledge.
- d'Haenens, L. (2005). Euro-vision: The portrayal of Europe in the quality press. *Gazette: The International Journal of Communication Studies*, 67(5), 419–440.
- Druckman, J. N. (2001). On the limits of framing effects: Who can frame? *Journal of Politics*, 63, 1041–1066.
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43, 51–58.
- Esager, M. (2011). *Fire and water – A comparative analysis of conceptual metaphors in English and Danish news articles about the credit crisis 2008*. Retrieved January 13, 2016 from http://pure.au.dk/portal/files/40317984/Fire_and_Water.pdf.
- Galtung, J., & Ruge, M. H. (1965). The structure of foreign news. *Journal of Peace Research*, 2(1), 64–90.
- Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power. A constructionist approach. *American Journal of Sociology*, 95(1), 1–37.
- Hartman, T. K. (2012). Toll booths on the information superhighway? Policy metaphors in the [case of net neutrality](#). *Political Communication*, 29(3), 278–298.
- Horner, J. R. (2011). Clogged systems and toxic assets. News metaphors, neoliberal ideology, and the United States 'Wall Street Bailout' of 2008. *Journal of Language and Politics*, 10(1), 29–49.
- Igartua, J., & Cheng, L. (2009). Moderating effect of group cue while processing news on immigration: Is the framing effect a heuristic process? *Journal of Communication*, 59, 726–749.
- Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. Chicago: University of Chicago Press.
- Joris, W., d'Haenens, L., & Van Gorp, B. (2014). The Euro crisis in metaphors and frames: Focus on the press in the Low Countries. *European Journal of Communication*, 29(5), 608–617.
- Joris, W., Puustinen, L., Sobieraj, K., & d'Haenens, L. (2015). The battle for the Euro: Metaphors and frames in the Euro crisis news. In R. G. Picard (Ed.), *The Euro crisis in the media. Journalistic coverage of economic crisis and European Institutions* (pp. 127–150). London: I. B. Tauris & Co.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
- Lecheler, S., & de Vreese, C. H. (2011). Getting real: The duration of framing effects. *Journal of Communication*, 61, 959–983.
- Lecheler, S., & de Vreese, C. H. (2012). News framing and public opinion: A mediation analysis of framing effects on political attitudes. *Journalism & Mass Communication Quarterly*, 89(2), 185–204.
- Lecheler, S., de Vreese, C. H., & Slothuus, R. (2009). Issue importance as a moderator of framing effects. *Communication Research*, 36(3), 400–425.
- Morton, T., & Duck, J. (2001). Communication and health beliefs. Mass and interpersonal influences on perceptions of risk to self and others. *Communication Research*, 28(5), 602–626.

- Nieminen, H., & Trappel, J. (2011). Media serving democracy. In J. Trappel, W. Meier, L. d'Haenens, J. Steemers & B. Thomass (Eds.), *Media in Europe today* (pp. 135–151). Bristol: Intellect.
- Ortner, C. (2014). *Wie junge Erwachsene die EU sehen und was die Medien dazu beitragen. Zur Bedeutung medienvermittelter Erfahrungen für die Entwicklung von Orientierungen gegenüber der EU* [How young adults see the EU and the media's contribution to this. About the meaning of mediated experiences for the development of orientations towards the EU]. Baden-Baden: Nomos.
- Ottati, V., Renstrom, R., & Price, E. (2014). The metaphorical framing model: Political communication and public opinion. In M. J. Landau, M. D. Robinson & B. P. Meier (Eds.), *The power of metaphor: Examining its influence on social life* (pp. 179–202). Washington, DC: American Psychological Association.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Picard, R. G. (2015). Understanding the crisis. In R. G. Picard (Ed.), *The Euro crisis in the media: Journalistic coverage of economic crisis and European institutions* (pp. 1–15). London: I. B. Tauris & Co.
- Reijnierse, W. G., Burgers, C., Krennmayr, T., & Steen, G. J. (2015). How viruses and beasts affect our opinions (or not). The role of extendedness in metaphorical framing. *Metaphor and the Social World*, 5(2), 245–263.
- Robins, S., & Mayer, R. E. (2000). The metaphor framing effect: Metaphorical reasoning about text-based dilemmas. *Discourse Processes*, 30(1), 57–86.
- Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of Communication*, 57, 9–20.
- Steen, G. J., Reijnierse, W. G., & Burgers, C. (2014). When do natural language metaphors influence reasoning? A follow-up study to Thibodeau and Boroditsky (2013). *PLoS ONE*, 9(12), e113536.
- Thibodeau, P. H., & Boroditsky, L. (2011). Metaphors we think with: The role of metaphor in reasoning. *PLoS ONE*, 6(2), e16782. doi:10.1371/journal.pone.0016782
- Van Gorp, B. (2010). Strategies to take subjectivity out of framing analysis. In P. D'Angelo & J. A. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp. 84–109). New York: Routledge.
- Waheed, M., Schuck, A., Neijens, P., & de Vreese, C. H. (2015). The effects of news frames and political speech sources on political attitudes: The moderating role of values. *Communications*, 40(2), 147–169.
- Zografova, Y., Bakalova, D., & Mizova, B. (2012). Media reporting patterns in Europe: The cases of construction of the EU and Reform Treaty. *Javnost*, 19(1), 67–84.

APPENDIX: Articles of both experiments (English translation will be provided on our website)

CONTROL CONDITION

Financiële problemen voor Italië en Spanje

BRUSSEL – Kredietbeoordelaar Standard & Poor's heeft aangekondigd de kredietwaardigheid van Spanje en Italië te verlagen. De verlaging illustreert het gebrek aan vertrouwen bij de beleggers. Beleggers vrezen immers dat Europese regeringsleiders niet in staat zijn de financiële problemen tot de Zuid-Europese landen beperkt te houden.

Van onze redacteur

De Spaanse premier Mariano Rajoy heeft laten weten dat Spanje de eerdere Europese afspraken niet kan waarmaken. Van december 2012 tot en met december 2014 heeft Spanje 41,3 miljard euro ontvangen van de Europese Centrale Bank en de andere landen van de eurozone. Voorwaarde was dat de Spaanse banken hervormd werden en dat het begrotingstekort verminderd werd tot 3% van het bruto binnenlands product tegen 2016. Intussen is de steunmaatregel aan Spanje afgelopen, maar kampt het land nog steeds met problemen. Ook Italië kent een lastige periode. De rente die Italië moet betalen om haar schulden af te lossen, is afgelopen week gestegen tot het hoogste peil in 10 maanden. De Italiaanse regering dient daarom dringend nieuwe hervormingen uit te voeren.

Door de schulden van Zuid-Europese landen komen ook de Europese banken in problemen en kunnen ze minder kredieten verstrekken. Ook de Belgische banken en verzekeraars hebben er alle baat bij dat de zorgen over Italië en Spanje niet uitmonden in een financiële crisis. Onder meer KBC en ING hebben immers Italiaanse of Spaanse obligaties gekocht.

De problemen zijn niet meteen van de baan. "Er moet een oplossing komen voor de toekomst van de euro", zegt de voorzitter van de Europese Centrale Bank, Mario Draghi. Ofwel moeten de eurolanden nog meer integreren om zo de euro te versterken. Ofwel wordt het einde van de eurozone aangekondigd en keren we terug naar de nationale munten. De Europese ministers van Financiën komen volgende maandag in Brussel bijeen voor een belangrijke top waar de toekomst van de eurozone zal bepaald worden.

WAR STRONG CONDITION

Frontale aanval op Italië en Spanje

BRUSSEL – Kredietbeoordelaar Standard & Poor's heeft aangekondigd de kredietwaardigheid van Spanje en Italië te verlagen. De verlaging illustreert dat beleggers een frontale aanval op de euro hebben ingezet. Beleggers vrezen immers dat Europese regeringsleiders niet in staat zijn de financiële problemen tot de Zuid-Europese landen beperkt te houden. Daarmee bestaat de kans dat ook andere landen in de eurozone die problemen met de begroting hebben in het vizier van de beleggers zullen komen.

Van onze redacteur

De Spaanse premier Mariano Rajoy heeft laten weten dat Spanje de eerdere Europese afspraken niet kan waarmaken. Van december 2012 tot en met december 2014 heeft Spanje 41,3 miljard euro van de Europese Centrale Bank en de andere eurolanden ontvangen om zich beter te wapenen tegen de crisis. Voorwaarde was dat de Spaanse banken hervormd werden en dat het begrotingstekort teruggedrongen werd tot 3% van het bruto binnenlands product tegen 2016. Intussen is de steunmaatregel aan Spanje afgelopen, maar ligt het land nog steeds onder vuur. Ook Italië krijgt klappen. De rente die Italië moet betalen om haar schulden af te lossen, is afgelopen week gestegen tot het hoogste peil in 10 maanden. Met het mes op de keel dient de Italiaanse regering nieuwe hervormingen uit te voeren.

Door de schulden van Zuid-Europese landen beschikken ook de Europese banken niet over voldoende munitie en kunnen ze minder kredieten verstrekken. Ook de Belgische banken en verzekeraars hebben er alle baat bij dat de zorgen over Italië en Spanje niet uitmonden in een financiële oorlog. Onder meer KBC en ING hebben immers Italiaanse of Spaanse obligaties gekocht.

Het conflict zal niet meteen uitgevochten zijn. "Het is D-Day voor de euro", zegt de voorzitter van de Europese Centrale Bank, Mario Draghi. Ofwel moeten de eurolanden nog meer integreren om zo de euro te versterken. Ofwel wordt het einde van de eurozone aangekondigd en keren we terug naar de nationale munten. De Europese ministers van Financiën komen volgende maandag in Brussel bijeen voor een belangrijke top waar de toekomst van de eurozone zal bepaald worden.

WAR WEAK CONDITION

Italië en Spanje in houdgreep

BRUSSEL – Kredietbeoordelaar Standard & Poor's heeft aangekondigd de kredietwaardigheid van Spanje en Italië te verlagen. De verlaging illustreert dat beleggers de euro in een houdgreep hebben. Beleggers vrezen immers dat Europese regeringsleiders niet in staat zijn de financiële problemen tot de Zuid-Europese landen beperkt te houden. Daarmee bestaat de kans dat ook andere landen in de eurozone die problemen met de begroting hebben in de strijd zullen betrokken worden.

Van onze redacteur

De Spaanse premier Mariano Rajoy heeft laten weten dat Spanje de eerdere Europese afspraken niet kan waarmaken. Van december 2012 tot en met december 2014 heeft Spanje 41,3 miljard euro van de Europese Centrale Bank en de andere eurolanden ontvangen om beter stand te houden tijdens de crisis. Voorwaarde was dat de Spaanse banken hervormd werden en dat het begrotingstekort teruggedrongen werd tot 3% van het bruto binnenlands product tegen 2016. Intussen is de steunmaatregel aan Spanje afgelopen, maar verliest het land nog steeds terrein. Ook Italië krijgt klappen. De rente die Italië moet betalen om haar schulden af te lossen, is afgelopen week gestegen tot het hoogste peil in 10 maanden. De Italiaanse regering moet dus noodgedwongen nieuwe hervormingen uitvoeren.

Door de schulden van Zuid-Europese landen hebben de Europese banken minder bewegingsruimte en kunnen ze minder kredieten verstrekken. Ook de Belgische banken en verzekeraars hebben er alle baat bij dat de zorgen over Italië en Spanje niet uitmonden in een financiële strijd. Onder meer KBC en ING hebben immers Italiaanse of Spaanse obligaties gekocht.

De strijd zal niet meteen gestreden zijn. "Er moet een oplossing komen voor de toekomst van de euro", zegt de voorzitter van de Europese Centrale Bank, Mario Draghi. Ofwel moeten de eurolanden nog meer integreren om zo de euro te versterken. Ofwel wordt het einde van de eurozone aangekondigd en keren we terug naar de nationale munten. De Europese ministers van Financiën komen volgende maandag in Brussel bijeen voor een belangrijke top waar de toekomst van de eurozone zal bepaald worden.

DISEASE STRONG CONDITION

Besmettingsgevaar voor Italië en Spanje

BRUSSEL – Kredietbeoordelaar Standard & Poor's heeft aangekondigd de kredietwaardigheid van Spanje en Italië te verlagen. De verlaging illustreert dat beleggers de euro als ernstig ziek beschouwen. Beleggers vrezen immers dat Europese regeringsleiders niet in staat zijn de financiële problemen tot de Zuid-Europese landen beperkt te houden. Daarmee bestaat de kans op besmetting van de andere landen in de eurozone die problemen met de begroting hebben.

Van onze redacteur

De Spaanse premier Mariano Rajoy heeft laten weten dat Spanje de eerdere Europese afspraken niet kan waarmaken. Van december 2012 tot en met december 2014 heeft Spanje een financieel infuus van 41,3 miljard euro van de Europese Centrale Bank en de andere eurolanden ontvangen om de overheidsfinanciën terug gezond te maken. Voorwaarde was dat de Spaanse banken hervormd werden en dat het begrotingstekort teruggedrongen werd tot 3% van het bruto binnenlands product tegen 2016. Intussen is de steunmaatregel aan Spanje afgelopen, maar is het land nog steeds niet van het schuldenvirus verlost. Ook Italië is niet immuun voor de crisis. De rente die Italië moet betalen om haar schulden af te lossen, is afgelopen week gestegen tot het hoogste peil in 10 maanden. De Italiaanse regering moet dus dringend nieuwe hervormingen uitvoeren om het land weer gezond te krijgen.

Door de schulden van Zuid-Europese landen hebben de Europese banken minder ademruimte en kunnen ze minder kredieten verstrekken. Ook de Belgische banken en verzekeraars hebben er alle baat bij dat de zorgen over Italië en Spanje niet uitmonden in een financiële epidemie. Onder meer KBC en ING hebben immers Italiaanse of Spaanse obligaties gekocht.

Het besmettingsgevaar zal niet meteen wijken. “De diagnose voor de euro is bekend, nu is het tijd voor de therapie”, zegt de voorzitter van de Europese Centrale Bank, Mario Draghi. Ofwel moeten de eurolanden nog meer integreren om zo de euro te versterken. Ofwel wordt het einde van de eurozone aangekondigd en keren we terug naar de nationale munten. De Europese ministers van Financiën komen volgende maandag in Brussel bijeen voor een belangrijke top waar de toekomst van de eurozone zal bepaald worden.

DISEASE WEAK CONDITION

Nervositeit in Italië en Spanje

BRUSSEL – Kredietbeoordelaar Standard & Poor's heeft aangekondigd de kredietwaardigheid van Spanje en Italië te verlagen. De verlaging illustreert dat beleggers de financiële gezondheid van de euro betwijfelen. Beleggers vrezen immers dat Europese regeleiders niet in staat zijn de financiële problemen tot de Zuid-Europese landen beperkt te houden. Daarmee bestaat de kans dat de financiële stress ook zal verspreiden naar andere landen in de eurozone die problemen met de begroting hebben.

Van onze redacteur

De Spaanse premier Mariano Rajoy heeft laten weten dat Spanje de eerdere Europese afspraken niet kan waarmaken. Van december 2012 tot en met december 2014 heeft Spanje 41,3 miljard euro van de Europese Centrale Bank en de andere eurolanden ontvangen om even wat ademruimte te bieden. Voorwaarde was dat de Spaanse banken hervormd werden en dat het begrotingstekort teruggedrongen werd tot 3% van het bruto binnenlands product tegen 2016. Intussen is de steunmaatregel aan Spanje afgelopen, maar is het land nog steeds erg gespannen. Ook Italië is niet immuun voor de crisis.. De rente die Italië moet betalen om haar schulden af te lossen, is afgelopen week gestegen tot het hoogste peil in 10 maanden. De Italiaanse regering moet dus dringend nieuwe hervormingen uitvoeren om het land weer gezond te krijgen.

Door de schulden van Zuid-Europese landen hebben de Europese banken minder ademruimte en kunnen ze minder kredieten verstrekken. Ook de Belgische banken en verzekeraars hebben er alle baat bij dat de zorgen over Italië en Spanje niet uitmonden in een overmatige stresssituatie. Onder meer KBC en ING hebben immers Italiaanse of Spaanse obligaties gekocht.

De nervositeit zal niet meteen wijken. “De diagnose voor de euro is bekend, nu is het tijd voor de therapie”, zegt de voorzitter van de Europese Centrale Bank, Mario Draghi. Ofwel moeten de eurolanden nog meer integreren om zo de euro te versterken. Ofwel wordt het einde van de eurozone aangekondigd en keren we terug naar de nationale munten. De Europese ministers van Financiën komen volgende maandag in Brussel bijeen voor een belangrijke top waar de toekomst van de eurozone zal bepaald worden.