

# The (Ir)relevance of Metaphorical Framing in Reasoning About the Covid-19 Problem

Kristina Štrkalj Despot<sup>1</sup>, Mirjana Tonković<sup>2</sup>, Ana Ostroški Anić<sup>1</sup>

<sup>1</sup>Institute for the Croatian Language and Linguistics, Zagreb, Croatia

<sup>2</sup>Department of Psychology, Faculty of Humanities and Social Sciences, University of Zagreb, Zagreb, Croatia

## ABSTRACT

*Previous research has shown that different metaphorical framings lead people to reason differently, even about important social issues. Critics of such investigations argue that there is no empirical evidence to show that framing significantly influences how people think about real-world problems. In our experiment, we investigated the effects of different metaphorical framings on reasoning about possible solutions to the Covid-19 pandemic to verify the results of previous studies investigating hypothetical situations and showing the powerful influence of metaphor on people's attempts at solving social problems. Randomly assigned to one of three experimental conditions (war, football, and dance framing), participants were asked to imagine themselves as members of the government and, having read a short report about the current pandemic situation in Croatia, they were asked to answer questions regarding their proposed solutions. We found that different framings do not elicit different responses from the participants in terms of reform vs. enforce, local vs. global, and dominance vs. cooperation. The proposed solutions did not differ as a function of metaphorical framing. This result calls for sceptical scrutiny and additional in-depth and more extensive studies of the relevance and power of metaphorical framings in real-life situations.*

**Key words:** metaphor, framing, Covid-19, war framing, football framing, dance framing, linguistic anthropology

## Introduction

Vivid and all-encompassing language change induced by the Covid-19 pandemic, combined with relatively severe restrictive measures to combat the epidemic, resulted in vocabulary that reminded many people of Orwell's *Nineteen Eighty-Four*, which, in his cult novel *1984*, was used to control the thought process. This dystopian language was invented to restrict thought by restricting language or, as Orwell himself put it, to narrow the range of thought. The Orwellian view of the crucial role of language in shaping thought has its foothold in the Sapir-Whorf hypothesis, which argues that human thought is entirely determined by linguistic categories, and in the less strict hypothesis of linguistic relativity stating that structural differences between languages cause differences in thinking and conceptualization between speakers of different languages<sup>1</sup>. Although the Sapir-Whorf hypothesis was disputed in the 1970s<sup>2</sup>, its weak versions (forms of linguistic relativity) in which the element of determinism is absent and which state that language is related to conceptualization by influencing thought, rather than determining it, remain

influential in cognitive linguistics and the psychology of language<sup>3,4</sup>.

In Croatia, as in all other countries hit by the Covid-19 pandemic, public discourse on Covid-19 is saturated with metaphors<sup>5</sup>. The epidemic is conceptualized as a (natural) disaster (in expressions such as epidemic epicentre, epidemic focal point, wave of the epidemic, plague, Chernobyl, Calvary, course of the epidemic, flaming epidemic, epidemic flared up, etc.) and coping with the epidemic is dominantly conceptualized as war or combat (e.g. affected states, headquarters, first line of defence, second line of defence, front, attack, battle, invisible enemy, strong enemy, coordinated strategy, final defeat of the virus, powerful blow, etc.).

Given such a prevalence of metaphors and importance of the topic, it is only natural to ask ourselves whether metaphoric framing influences the way we reason about pandemic and consequently if it influences our behaviour, such as adherence to Covid-19 preventive measures.

Research has shown that metaphors, which pervade all talk about abstract and complex ideas, are not “just fancy ways of talking”, but that metaphorical framings

can have real consequences, e.g. for how people reason about complex social problems like crime<sup>6</sup> or climate change<sup>7</sup> or on their attitudes<sup>8</sup>.

Entman<sup>9</sup> provides a general definition of framing as selecting some aspects of a perceived reality and making them more salient in communicating. Experimental research on metaphorical framing suggests that metaphors guide reasoning as well as physical and social behaviour. Through metaphorical framing, metaphors reflect our experience, and at the same time shape it. This aspect of the power of framing to shape our experience and reasoning, and consequently our behaviour, has been empirically supported, demonstrating that different metaphorical framings can lead people to reason differently about time, emotion, electricity, etc.<sup>10–12,3</sup>. Applying a different metaphorical framing can also have a powerful influence on how people address and attempt to solve different social issues, which was shown in a number of framing experiments. Thibodeau et al.<sup>13</sup> give an overview of the results of such metaphor framing experiments, indicating a wide range of effects. Framing cancer as an enemy reduces the intention to engage in self-limiting preventative behaviours<sup>14</sup>. Conceptualizing cancer as a journey leads to the better acceptance of difficult outcomes<sup>15</sup>. When a love relationship is framed as a journey, conflict hurts less than when it is framed as a perfect union<sup>16</sup>. Imaging relationship as a war (vs. two-way street) leads to more guarded communication<sup>17</sup>, while framing ideas as light bulbs leads to the perception of those ideas as being more exceptional than when framed as seeds<sup>18</sup>. Figurative language types like metaphor, hyperbole and irony were shown to be important in shaping public discourse since they contain important linguistic and conceptual content about the issues under discussion<sup>19</sup>. Thibodeau & Boroditsky<sup>6</sup> asked participants to propose a solution to increasing crime rates in an imaginary city after reading a report in which crime was framed as either a beast preying on the city or a virus infecting the city. It was shown that metaphorical framing influenced how people proposed to solve the problem with crime. Those who had read a description where crime had been framed as a virus proposed treating the problem by means of social and educational reform, while those who had read a description in which crime had been framed as a beast proposed a harsher law enforcement.

Boeynaems et al.<sup>20</sup> discussed the effects of the metaphorical framing of political issues on opinion by conducting a systematic literature review and comparing a critical-discourse approach (CDA) and a response-elicitation approach (REA) to the metaphorical frames that were studied and their reported effects. They showed that the CDA frames are typically more negative, nonfictional, and more extreme than the REA frames. The CDA typically reported strong effects in line with the frame, compared to the REA. The authors attributed the differences in the effects partly to the differences in the methods applied by the CDA and REA, concluding that the research field is fragmented concerning the impact of metaphors in politics.

However, critics argue that not enough work has empirically demonstrated that metaphors in language strongly influence how people think about and solve real-world problems and that this stance has been taken too far<sup>2</sup>. Steen et al.<sup>21</sup> offer a follow-up study and a critical view of Thibodeau and Boroditsky<sup>6</sup>. In contrast to the original studies, they consistently found no effects of metaphorical frames on policy preference, and no difference between the two metaphorical frames on the one hand, and the non-metaphorical, neutral frame on the other.

Research supporting the idea of the importance of linguistic framing on one side, and criticism claiming that it is unlikely that linguistic metaphors strongly influence how people think about real-world problems, paired with some replication failures mentioned above on the other side, surely call for additional assessments of the power of framing, especially in real-life situations.

The Covid-19 pandemic proved to be a rare opportunity to test the power of metaphorical framing in a real-life situation.

### Framing Covid-19 in the Media

Metaphor scholars approached the coronavirus discourse from different perspectives. Nerlich<sup>22</sup> discusses war and disaster metaphors as common framings and gives an extensive list of metaphors used in the media. Semino<sup>23</sup> proposes fire metaphors (specifically metaphors involving forest fires) as an alternative and critiques the widely used war framing. She considers them to be particularly appropriate and useful for communication about the pandemic because they, among other reasons, convey danger and urgency, distinguish between different phases of the pandemic, and explain how contagion happens and what the role of individuals is in that context.

Wicke & Bolognesi<sup>24</sup> analyzed the discourse on Covid-19 in a large corpus of tweets posted on Twitter during March and April 2020. They showed that among the most common figurative frames they detected in this context, namely WAR, MONSTER, STORM, and TSUNAMI, WAR is the frame used most frequently when talking about Covid-19 on Twitter, even though it does not seem to be apt to elaborate on the discourse on all aspects of the situation.

Despot & Ostroški Anić<sup>5</sup> investigated metaphorical framings of the discourse on the coronavirus in Croatian (social) media. They show that the epidemic is conceptualized as a (natural) CATASTROPHE at a general level in situations where we talk about “what the epidemic is doing to us” (this is further specified as plague, disaster, threat, earthquake, fire, nuclear disaster, tsunami, etc.). In situations where we discuss our actions against the epidemic, we conceptualize them at a general level as a COMBAT (with more specific instances of the WAR and SPORT frames). The quantitative analysis in the paper shows that managing the pandemic is predominantly framed as COMBAT/WAR. All other source domains de-

tected in the conceptual annotation are manifested in a small number of instances, including FIRE, FOOTBALL, RACE, PLANT, CONTROL, DANCE, PARTNERSHIP, CRISIS, CATASTROPHE, EVIL, and JOURNEY.

The cognitive dominance of the war metaphor is the result of it being grounded in our experience: it is based on general knowledge and understanding of any disease, which are conceptualized as wars between an attacking enemy army (viruses, bacteria) and a defending army (our antibodies). Therefore, almost all diseases are primarily conceptualized precisely with the help of the war metaphor<sup>25</sup>. This is especially true of extremely severe and life-threatening diseases such as cancer, where the possible loss of life in the fight against the disease further reinforces the analogy with war, so languages abound with expressions such as lost the battle, but won the war and vice versa, lost the battle for life, emerged victorious from the battle with the disease. Additionally, historically, illness and war have often been simultaneous experiences because real wars lead to a decline in the population and result in people more easily succumbing to disease. Military camps have often been sources of dangerous infections, and biological weapons have been used to weaken the opposing army with diseases.

## Study Overview

We investigate the effects of different metaphorical framings on reasoning about solutions to the Covid-19 pandemic. Building on the corpus-based study of the metaphorical framings of the coronavirus pandemic in Croatian<sup>5</sup>, in this study we focus on the metaphorical framings of the Covid-19 pandemic and its management that are well attested in the Croatian corpora. Given the predominant use of the WAR/COMBAT frame, with recent uses of the FOOTBALL and DANCE frames in Croatian (social) media, these frames were chosen to be used in the experiment in this research.

Our goal was to examine whether metaphorical framing can influence thinking about possible solutions to the Covid-19 pandemic, and to check the findings of Thibodeau & Boroditsky<sup>6</sup> in a real-life situation, solving not a hypothetical and imaginary, but a real problem.

We conducted an experiment with Croatian native speakers, in which the participants were randomly assigned to one of three experimental conditions: one, where the pandemic was framed as a war, another, where it was framed as a football match, and the third, where the pandemic was framed as a dance. The participants had to imagine themselves as government representatives and, having read a short report about the current situation regarding the Covid-19 pandemic, were asked to answer questions about their envisioned measures and possible solutions to the problem. Additionally, we conducted a qualitative analysis of the metaphorical framings used in the participants' answers applying the MetaNet.HR method<sup>26</sup>.

We hypothesized that, having read the stimulus texts with the WAR and the FOOTBALL framing, the participants would more often propose repressive methods for dealing with the epidemic due to the combat structure underlying these framings, than after reading the text with the DANCE frame, which incorporates cooperation and mutual agreement. We expected this difference to be considerably pronounced in the first statement in their answer because it was under the greatest influence of the framed stimulus text they had read. We expected that after reading the WAR and the FOOTBALL framed texts, the participants would more often choose dominance and determination as more important in relation to the epidemic than those having read the DANCE frame. We anticipated that after these two frames, more often than after the DANCE frame, they would think the government should approach this problem as a national one.

We also hypothesized that, given such dominance of WAR framing (as witnessed in the Croatian corpus on the coronavirus<sup>5</sup>), to which participants had continuously been exposed for months prior to our testing, the results would overall favor the enforce vs. reform category of response.

## Methods

### *Participants*

A link to the online experiment was distributed by e-mail and social networks with an invitation to take part in a short study about the pandemic. Altogether, 464 people accessed the survey and answered demographic questions, but 100 did not answer the critical question "What would you do, if you were part of the Croatian government, in the [war/match/dance] with the virus?" Out of the remaining 364, Croatian was not the mother tongue for five and they were excluded from the analysis. The mean age of the participants was 43.3 (SD = 10.7), 71% were women, 74.9% had an MA degree or higher, and around half (55.7%) of the participants were from Zagreb.

### *Materials and procedure*

The experiment was conducted online using the SurveyMonkey platform. Data were collected between 19 September and 23 September 2020. At that time, the number of newly confirmed 3-day moving average cases ranged from 137 to 255 (Worldometer, n.d.). During the first wave of the pandemic (from February to May 2020), the number of daily new cases in Croatia was never higher than 100. During the summer, there were longer periods with zero new cases daily. However, the second half of September, when the data collection took place, was announced as the second wave of the pandemic, although one could not yet predict its size (there was a period in December when the 3-day moving average of new cases was above 4,000). The participants were informed that the study was anonymous, their participation voluntary, and that they were

free to withdraw at any moment. They were also given an e-mail address of the ethics committee of the Department of Psychology, Faculty of Humanities and Social Sciences, to which they could complain if they felt anything inappropriate or something unpleasant happened to them while participating in the study. The research was conducted following the Ethics Codex of the Croatian Psychological Chamber.

The participants were randomly assigned to one of three experimental groups. One group was presented with a short stimulus text about the pandemic framed as war ( $N=127$ ), another group was presented with the same text about the pandemic but framed as a football match ( $N=118$ ), and the third group was presented with a text about the pandemic framed as a dance ( $N=114$ ). The texts contained identical information and figures and differed only in the usage of the words belonging to one of the frames (8 words per frame in total, see Table 1 for the full stimulus texts translated into English).

Having read the text, the participants were asked to imagine themselves as a member of the Croatian government, and to write what they would do to reduce the number of infected people. On the next page in the survey, they were asked which was more important in relation to the virus: dominance and determination or cooperation with citizens. A question was also put about whether the government approach to this problem should be more of a national or of a global one.

### Coding

The proposed solutions to the spread of the pandemic were coded into two categories: enforce and reform, as in the Thibodeau & Boroditsky study<sup>6</sup>. The Corona corpus of Croatian media texts<sup>5</sup> was used to check whether the proposed categories would be suitable for the coding. An analysis of all words co-occurring with the lexeme measures or in the context of taking adequate action in fighting the virus showed that they could be grouped into two basic groups: words denoting repressive action, and all other words referring to non-repressive or educational measures. Therefore, the participants' responses were coded in the following manner: the responses including words referring to prohibition, punishment, monetary fine, restrictions, or enforcement of measures were coded as enforce, while those referring to education, more testing, public appeal, the Swedish model, recommendations and showing by example were categorized as reform. For an exhaustive list of all the measures proposed in the responses, see Table 2. Each participant's response was coded as a single point. If the proposed solution consisted of more than one suggestion, then the response was coded in the category that was represented more. In the case where an equal number of suggestions in one response belonged to both categories (this was the case for 10 responses), the response was coded in the category of the first suggested idea. Thirty-five of the 359 (9.7%) responses lacked a suggestion (e.g. "I'm not an expert", "I don't know", "I don't have enough information"), and therefore could not be cat-

egorized. These responses were omitted from the analysis. All responses were blindly coded by two coders, who had no knowledge of which text each participant had read in the experiment. Cohen's kappa was .68, indicating substantial agreement between the coders<sup>27</sup>. The first idea mentioned in the responses was coded following the same procedure. The measure of agreement between the coders, Cohen's kappa in this case was .84, indicated almost perfect agreement<sup>27</sup>.

The dataset is available at <https://osf.io/v4u3j/>. In order to preserve the privacy of our participants, the dataset does not include qualitative data, but only coded material. Answers to the open question will be provided upon request from the authors of the study.

**TABLE 1**  
TRANSLATION OF TEXTS USED AS STIMULI  
IN THE SURVEY

<i>Text 1</i>	The coronavirus pandemic of 2019/2020 spread to Croatia in February 2020. There have been over 14,000 confirmed cases in Croatia so far, where over 230 have died. Infected people have been registered in all counties of the Republic of Croatia. The government has had a clear military strategy in the war against this virus from the beginning, the point of which is to restrict the mobility of citizens. The strategy has been very successful on the front line of defense, but lifting measures has caused problems on the second line of defense. We hope to come out as winners of this war with an invisible enemy.
<i>Text 2</i>	The coronavirus pandemic of 2019/2020 spread to Croatia in February 2020. There have been over 14,000 confirmed cases in Croatia so far, where over 230 have died. Infected people have been registered in all counties of the Republic of Croatia. The government has had a clear plan in the match against this virus from the beginning, the point of which is to restrict the mobility of citizens. The plan was very successful in the first half, but lifting measures has caused problems in the second half. We hope to come out as winners in the match with a very tough opponent.
<i>Text 3</i>	The coronavirus pandemic of 2019/2020 spread to Croatia in February 2020. There have been over 14,000 confirmed cases in Croatia so far, out of which over 230 have died. Infected people have been registered in all counties of the Republic of Croatia. The government has had clear steps in the dance with this virus since the beginning, the point of which is to restrict the mobility of citizens. The choreography was successful in the first phase of the dance, but lifting measures has caused problems in the second phase. We hope to continue to dance well, and not to make any wrong moves.

## Results

Overall, there were more responses in the reform category (64.8%) than in the enforce category (35.2%) ( $\chi^2(1, N=324) = 28.4, p < .001$ ). Contrary to our predictions, the solutions did not differ as a function of the metaphorical framing of the stimulus text the participants had read ( $\chi^2(2, N=324) = 4.73, p > .05$ ). The same was true for the first

idea in their responses – there were more responses in the reform category (63.6%) than in the enforce category (36.4%) ( $\chi^2(1, N=324) = 23.9, p < .001$ ), and no difference as a function of metaphorical framing was found ( $\chi^2(2, N=324) = 0.76, p > .05$ ).

The metaphorical framing in the texts the participants had read before answering the questions did not influence the answers to the two subsequent questions either. The participants overall chose cooperation with citizens as more important (83.5%) than dominance and determination (16.5%) ( $\chi^2(1, N=321) = 144, p < .001$ ), but no difference as a function of metaphorical framing was found ( $\chi^2(2, N=321) = 0.004, p > .05$ ). When asked about the government's approach to this problem, 74.6% of participants chose global, and 25.4% chose national ( $\chi^2(1, N=319) = 77.3, p < .001$ ) as their answer. This proportion did not differ across different metaphorical framings ( $\chi^2(2, N=319) = 2.15, p > .05$ ).

Hence, different framings of the stimulus text the participants read did not influence their inclination towards solutions to the Covid-19 pandemic in terms of preference for reform vs. enforce, local vs. global, and dominance vs. cooperation. The results show that the proposed solutions did not differ as a function of metaphorical framing.

#### Qualitative analysis

As mentioned above, the participants were asked to imagine themselves as members of the Croatian government and to freely write what they would do to lower the number of infected people. To gain a more detailed insight into their answers, we additionally performed a qualitative analysis of their answers. Table 2 shows the measures or actions the participants proposed. Each proposition of a measure was counted as a single unit.

In our qualitative analysis, we were particularly interested in: 1) the source domains the participants used for framing the pandemic in their own answers; 2) answers that (re)used or elaborated on a conceptual metaphor from the given stimulus text, whether deliberately or not; and 3) answers in which the participants explicitly referred to the framing in the stimulus text by giving comments on it or disputing it.

The analysis consisted of a careful reading of all the answers and annotating the examples of linguistic metaphors connected with the epidemic target, checking them against the linguistic metaphors identification procedure as outlined in MIP<sup>28</sup>, followed by an annotation of the conceptual metaphors using the MetaNet.HR annotating schema<sup>26</sup>.

For the targets related to the epidemic, the participants used these source frames and related lexemes, as shown in Table 3.

For the conceptualization of the epidemic situation, the participants also used *kriza* 'crisis', *začarani krug* 'vicious circle', and *drama* 'drama', highlighting the dimensions of difficulty, danger, hopelessness, the inexorable worsening of the situation, emotionality, and the unexpectedness of

**TABLE 2**  
MEASURES PROPOSED BY THE PARTICIPANTS

Measures proposed by the participants	Number of occurrences
Disinfection, masks, distance, handwashing	66
Depoliticization of the headquarters, more consistency, same rules for everyone, especially the church	62
No gatherings, especially larger ones	59
Education, campaigns	43
Minimal measures or no measures at all, returning to a normal life	37
Consulting with epidemiologists, scientists; investing in research and vaccines	36
Penalties and fines	30
Stricter control of the applied measures	30
The same as what the government has already been doing	28
More restrictions and/or special care (only) for high-risk groups	27
More testing or free testing	26
The Swedish model	24
Self-responsibility	20
Taking care of the economy	17
Importance of reliable and realistic informing / stopping the spread of panic	12
Closing or more strictly controlling borders	12
More work from home	9
Strengthening the immune system	9
Lockdown	8
Following the examples of other countries (Germany, EU countries, South Korea)	7
Closing down schools	7
Taking care of other diseases	5
Explicitly against wearing masks	2

the circumstances. Other figurative expressions connected with the conceptualization of the epidemic used in the answers included conventional expressions such as *izvor zaraze* (lit. the source of infection), *razviti cjepivo, doći do cjepiva* (lit. develop a vaccine, come to the vaccine), *širenje virusa* (lit. the spread of the virus), *podići/jaćati/steći/dobiti imunitet* (lit. raise/strengthen/acquire/gain immunity), *nositi se s pandemijom* (lit. to carry oneself with the pandemic, 'to deal with the pandemic'), etc.

General conceptualization mechanisms such as personification (*naučit će nas korona bontonu* 'corona will teach us manners'), and reification (*širenje virusa* 'the spread of the virus'), are used for conceptualizing the virus and the pandemic, and the location event structure metaphors (ACTION IS MOTION, PURPOSEFUL ACTION IS GOAL ORIENTED MOTION, CAUSED CHANGE OF STATE IS

TABLE 3

## MOST COMMON SOURCE FRAMES IDENTIFIED IN WRITTEN RESPONSES IN THE SURVEY

Common source frames in responses	Lexemes invoking most common source frames
WAR	fight n (6): e.g. <i>borba protiv covid19</i> ‘fight against Covid19’; <i>za borbu protiv korone</i> ‘for the fight against corona’; <i>Švedski model borbe protiv pandemije</i> ‘the Swedish model of the fight against the pandemic’; <i>u borbi protiv širenja epidemije</i> ‘in the fight against the spread of the epidemic’ win v (2), defense (1), victims (1), strategy (1)
FOOTBALL	player (4), half-time (3), goal (2), opponent (2), defense (1), referees (1), spectators (1), counter-attack (1), player sent off (1)
DANCE	dance (7), steps (1), balance (5), equilibrium (1), rhythm (1)
FIRE	focus of the epidemic (4)
RACE	race (1): e.g. This way, this is a deadly race against an invisible virus. (translation)
SHAME	shame (2), stigma (3): e.g. I would work on educating the population and avoiding stigmatizing the infected. Teach citizens that the disease is nothing to be ashamed of – because otherwise it will increasingly happen that the infected will hide the truth (for various reasons – sickness, stigmatization, shame ...), come to work, move among other people and so the infection spreads indefinitely. (translation)
THREAT	threat (4), menace (1)
CONTROL	control (7)

CAUSED CHANGE OF MOTION) are used when talking about possible solutions: how to pick a good way/path, how to find a way out of the crisis, finding an optimal way, etc.

Out of 11 instances of war-related lexemes, seven are used in response to the stimulus text the participants had read before answering the questionnaire, and the others are used after other framings. The lexeme balance was also used independently of the framing in the stimulus. Other football and dance related lexemes were used only when these exact frames were activated in the given text. In 19 out of 324 answers (5.86%), the participants embraced, elaborated, disputed, or reacted to a metaphorical framing they had been exposed to in the stimulus text. Embracing the war frame consisted of using quite conventional linguistic expressions related to this framing: *pobijediti virus* ‘defeat the virus’, *borba protiv virusa* ‘fight against the virus’, *broj žrtava* ‘number of victims’.

After the football framed text, the participants most often reused the lexeme *poluvrijeme* ‘first/second half’ (e.g. I would do the same that was done during the first half). However, this framing was quite inspiring for several participants, which provided interesting elaborations and extensions:

- 1) I would change the referees, throw out the spectators, and score a goal.
- 2) I would be careful that the opponent doesn’t score.
- 3) I would strengthen the defense, and on the other hand put all available forces into defeating the opponent with counter moves, i.e. with finding a vaccine.
- 4) In the second half, I would invest in cooperation with international and local experts (...) I would insist on improved hygiene and early detection of symptoms and infected players and spectators. I would improve health and social services for the most vulnerable players (...) I would invest in educating and empowering players, developing personal awareness and responsibility, and threaten less with penalties and exclusion.

Example (1) provides an interesting metaphorical conceptualization: referees in the football match are mapped onto the political management in charge of the crisis, the spectators are mapped onto the public, and a goal is mapped onto the successful ending of the pandemic (or a stage in it). The meaning that arises from all these mappings is that the participant would solve the pandemic problem by replacing the current headquarters with a new one, and would keep the public home. In example (2), the participant explicitly states the exact same mapping: finding a vaccine is mapped onto counter-attacks in football. Example (4) offers a very elaborate answer with many novel mappings consistent with the frame offered: the second half is mapped onto the second wave of the pandemic, the players are mapped (probably) onto the epidemiologists and health workers, the spectators are mapped onto the public, penalties and exclusions are mapped onto extremely restrictive measures.

The reuse of the dance frame consisted of using expressions such as: *napravio bih slične korake* (‘I would take similar steps’), *treba izbalansirati gospodarstvo i restrikcije* (‘we should find an equilibrium between restrictions and the economy’), *švedski ples* (‘Swedish dance’), and *drugi dio plesa* (‘the second part of the dance’). Examples (5) and (6) are creative extensions of the frame.

- 5) I would choose my own rhythm that the virus couldn’t follow.
- 6) In dancing with the virus, I would continue to dance. And dance, and dance, and let the virus suffer if it bothers it.

There are 3 examples of disputing and questioning the metaphor from the stimulus texts provided in the survey.

- 7) First of all, I would not use the word "war", and then I would point to the many possibilities of strengthening the immune system, and put an emphasis on that.
- 8) I would communicate clearly and directly and precisely, and would not use metaphors such as dancing with the virus, etc.

- 9) I would stop calling it a dance because for me it is an uncomfortable caricature that I do not experience in the way it was probably thought of, releasing a touch of pleasure for the public.

Interestingly enough, only one participant out of the three participants that disputed the frame they had been exposed to actually disputed the war frame, as seen in example (7), which was largely criticized in the media as being undesirable and inapt to discuss all aspects of the pandemic. This is surely connected to the fact that talking about diseases and disease management in general without using words like fight, battle, victory, etc. proved to be almost impossible, despite the proclaimed inaptness of this conceptualization. Examples (8) and (9) dispute the dance frame as being irritating and not appropriate to the situation in the sense of it being deceptively light and relaxed, and that it purposefully misrepresents or ridicules the situation as being enjoyable – which it obviously is not.

However, in the majority of answers, the participants “ignored” the metaphor, and left no traces of its influence on them, whether being aware of it or not (in 94.1% of all the answers). In a small number of cases, the participants used the words belonging to the frame they had been exposed to while reading the stimulus text. In an even smaller number of cases, the participants questioned or disputed the metaphors used in the stimulus. Probably due to its extreme prevalence, frequency, and the level of conventionality in the Croatian media, the “reusing” of the war frame was wholly conventional (reusing conventional vocabulary such as fight, win etc.). In reusing the football and dance frames, the participants were creative, elaborating on them and developing interesting new dimensions.

## Discussion and Conclusions

There is now a lot of empirical evidence that metaphors are not only related to how we conceptualize the world (especially abstract concepts), but also to how we reason and make decisions on important social issues. Thibodeau & Boroditsky<sup>6</sup> found that exposure to even a single metaphor can induce substantial differences in opinion about how to solve social problems (differences greater than pre-existing ideological or political ones).

In this study, we were particularly interested in the effects the existing framings have in a real-life situation, taking into account linguistic patterns and corpus data as well. Specifically, we investigated the effects of different metaphorical framings on reasoning about solutions to the Covid-19 pandemic to check if the previous studies, involving hypothetical situations and showing that metaphor had a powerful influence on how people attempt to solve social problems, can stand the test of a real-world situation. Our starting points were quite strong and included: a real-life situation; discourse on an extremely important topic saturated with metaphor; salient, frequent, and dominant metaphorical framing based on many analogies be-

tween war and the epidemic; intensive, continuous, and prolonged exposure to this framing; and a large body of research providing evidence that metaphorical framing guides reasoning as well as physical and social behavior.

We found that different framings do not elicit different responses from the participants in terms of reform vs. enforce, local vs. global, and dominance vs. cooperation. The proposed solutions did not differ as a function of metaphorical framing. Contrary to our expectations, the participants did not suggest repressive methods more often after reading the stimulus texts with the war and the football framing than they did after reading the text with the dance frame. The same was reflected in the first statement in their free answers, too. These findings are in line with the recently published study by Panzeri et al.<sup>29</sup>, who did not find the effect of framing Covid-19 as war on the acceptance of metaphor congruent entailments.

Despite the dominance of the war framing of the epidemic in Croatian media<sup>5</sup>, to which participants had been continuously exposed for months prior to our testing, the overall results even favored reform vs. enforce, contrary to our expectations. This general result is particularly interesting in the light of the fact that a ‘war’ on the war metaphor has been declared both by the media and research community, showing how it can be potentially harmful to individuals and society and inapt to elaborate all aspects of the pandemic. Our study’s general results show that the effect of prolonged intensive exposure to the war metaphor is not highly significant and does not make people incline towards restrictive measures. Despot & Ostroški Anić<sup>5</sup> show that the use of certain other source frames (e.g. the RELIGION frame) may be more dangerous than the war frame.

The qualitative analysis is thoroughly in line with the experiment: it shows that, in the large majority of answers (94.1%), the participants disregarded the metaphor they had been exposed to as there were no linguistic signs of its influence on them. In a small number of cases, the participants used the vocabulary belonging to the frame they had been exposed to or sometimes even questioned or disputed the metaphors from the stimulus texts.

Since our study provides a temporal snapshot and an analysis of a real-world situation, it has many limitations, the most important of which is the fact that the war frame was already well established and dominant in Croatian news discourse at the time this experiment was conducted. We tried to amend this limitation by interpreting the overall results with this fact in mind, as well as by coding and analyzing the first idea in the response separately (expecting that exposure to metaphorical framing could influence what the participants would think of first), and by performing a qualitative analysis of the results. Additionally, given the importance and media coverage of the topic, the participants were likely to have prior fixed or entrenched ideas that were unlikely to be changed as a result of exposure to a single short text. However, Thibodeau & Boroditsky<sup>6</sup> found exposure to even a single metaphor induced substantial differences in opinion that were greater

than pre-existing ideological or political stances. As we may deduce from our results, this might not hold true in a real-life situation. This has been shown by Panzeri et al.<sup>29</sup>, who found that socio-political individual variables contributed to the participants' willingness to prefer war congruent options rather than the metaphorical frame they had been exposed to.

The results of our experiment should also be interpreted considering the epidemiological situation at the time of the study. In the second half of September 2020, Croatia had a rising number of infected people, but the situation was still not as critical as in November and December of the same year. Furthermore, restrictive measures during the first wave of the pandemic in Croatia proved to be successful and possibly made the pandemic seem easier to handle in the eyes of the public. It might be that, after the second wave hit Croatia rather hard, a repeated study would yield somewhat different results in terms of the non-repression vs. repression ratio in the participants' responses. The fact that the Croatian economy had been unstable and struggling even before the epidemic might also have influenced our results. Restrictive measures and lockdown heavily affect many small entrepreneurs, while governmental support is barely sufficient for them to survive the crisis. This might have resulted in resistance towards restrictive measures. The results should also be interpreted having in mind that the participants in our study were more educated than the general population and that the majority of them were women. High percentage of participants with completed higher education might explain favoring an educational approach in tackling the Covid-19 pandemic.

The fact that the participants were not susceptible at all to the metaphorical framings of the epidemic situation (either to intense, long-term, real-life exposure or to the brief exposure in our experiment) points to the unsurpris-

ing conclusion that, in a real-life situation, our opinions seem to be the result of many factors, including ideological standpoints, prior beliefs and attitudes, knowledge of the situation, level of education, gender or personal experience, as well as variations between metaphors.

We know that giving people new facts does not necessarily change attitudes. It seems to be the same with respect to metaphorical framings, especially in situations where attitudes have already been formed and have become entrenched and possibly polarized. According to some researchers, a "true framing effect" occurs only if the opinion is changed after presenting people with a certain frame<sup>30,31</sup>.

All this points to the power of metaphorical framing being more context sensitive and shaped by newly emerging real-life situations than can be deduced from the state of the art in the field. The body of empirical evidence for the relevance of framing is large and compelling, proving that metaphorical framings indeed have a significant impact on how we conceptualize and act. Our study, even though it is a small-scale one and providing only a temporal snapshot, calls for certain sceptical scrutiny, caution, and additional assessments of the size of real effects of metaphorical framings in real-life situations. Certainly, more extensive experiments with repeated exposure to different framings of the message related to the real-world problem are needed to further explore this important topic. However, the results of our experimental and qualitative study, in line with Steen et al.<sup>21</sup> and Panzeri et al.<sup>29</sup>, certainly raise questions about when metaphors influence reasoning and when and why they do not.

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*K. Š. Despot,*

*Institute for the Croatian Language and Linguistics, Republike Austrije 16, 10000 Zagreb, Croatia*

*e-mail: kristina.despot@gmail.com*

## **MOŽE LI METAFORIČKO UOKVIRIVANJE UTJECATI NA STAVOVE U VEZI S PANDEMIJOM KORONAVIRUSA?**

### **SAŽETAK**

Istraživanja pokazuju da metaforičko uokvirivanje može utjecati na način na koji ljudi razmišljaju i donose odluke, čak i o važnim društvenim temama. Kritičari takvih istraživanja smatraju da nema empirijskih dokaza koji bi upućivali na to da uokvirivanje ima bitan utjecaj na naše razmišljanje u stvarnim životnim situacijama. U ovom radu prikazani su rezultati eksperimenta kojim smo provjeravali utječu li zbilja različiti metaforički okviri na razmišljanja i stavove o mogućim rješenjima za problem pandemije virusa Covid-19 kako bismo u realnim uvjetima provjerili nalaze prethodnih istraživanja u kojima su korištene hipotetske situacije. Sudionici u istraživanju raspodijeljeni su po slučaju u jednu od tri eksperimentalne situacije (metaforički okvir rata, nogometa ili plesa). Nakon što su pročitali kratak tekst o pandemiji u Hrvatskoj, oblikovan u skladu s jednim od tri metaforička okvira, zamolili smo ih da se zamisle u ulozi člana Vlade i odgovore na nekoliko pitanja o tome kako bi oni pristupili rješavanju problema koje je donijela pandemija. Rezultati su pokazali da različiti metaforički okviri nisu doveli do različitih odgovora sudionika u smislu bi li njihov pristup za smanjenje broja zaraženih bio više usmjeren blažim ili strožim mjerama, treba li problemu pristupiti kao lokalnomu ili globalnomu i je li važnija dominacija ili suradnja. Taj rezultat upućuje na to da su potrebna daljnja istraživanja kojima će se utvrditi koliko je doista izražen utjecaj metaforičkoga okvira na razmišljanje o realnim životnim problemima u stvarnim situacijama.

