Metaphors we Lie by: our 'War' against COVID-19

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Abstract
In this paper we discuss the influence of war as a metaphor in the context of the COVID-19 pandemic. After an introduction on the traditional analysis of the war metaphor, we address the social consequences of using this metaphor, a topic that has been widely debated with regard to public communication in the context of COVID-19. We pay particular attention to a theory that many intellectuals have raised: the possibility that the use of the metaphor in this context is harmful to a democratic society because it may lead citizens to accept limited civil liberties and authoritarian policies. After presenting the extensive literature on the use of the war metaphor before and during the COVID-19 pandemic, in the final section of the paper, we analyse experimental evidence of the effects of this metaphor. In the conclusion, we hint at open questions and suggest that the current evidence does not support claims of direct liberticidal influence.

> '*A solidified metaphor, a metaphor accepted unambiguously as truth,*
>
> *is, in fact, a most pernicious force, inimical to truth.*'

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* After finishing the paper and deciding on the title, we discovered that Marquette (2007) used a title similar to ours in a different context.

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*Marquette 2007**

1 Introduction

During the pandemic, the use of the war metaphor became a topic of discussion in the public arena. Our initial curiosity was prompted by a claim, strongly asserted by many intellectuals and widely present in the media, which can be summarised as follows:

(C) During COVID-19, constant exposure to war metaphors increases the attitude of passive submission to restrictions on civil liberties.

We conducted an analysis of the literature from various disciplines, such as philosophy, sociology, critical studies and health communication studies, to discuss this contentious feature of the use of the war metaphor. The claim (C) implies that citizens will become more prone to accept a kind of totalitarian drift in our democracies, as discussed in some of the literature we present in this paper. Here we do not discuss this implication, but we point to a more restricted set of research questions which can be summarised as follows:

(RQ1) Is the claim (C) generally accepted in the critical literature?
(RQ2) Is the intuition underlying claim (C) supported by experimental results?

These questions are relevant, because a negative answer to both has the consequence of warning against the use of unsupported intuitions and would also put in doubt the implication given above.

We made a qualitative literature review, summing up the most salient contributions on the use of the war metaphor in the COVID-19 pandemic. We found three main contexts in which the metaphor is widely discussed. We then observed that the topic was mostly critically treated in the debate around the use of governments' emergency powers in the pandemic. Therefore, we worked in this setting to clarify (RQ1), where we verified that the main claim was not unanimously shared, with many raising serious doubts about it. We then analysed the few experimental papers to check the research question (RQ2).

As for data collection, we used – from February to August 2021 – the CORD-19 dataset on all papers on COVID-19. Entering as keyword 'War Metaphor', we selected publications in which the topic was not only used, but also openly and critically examined, particularly in relation to health policy and social or political concerns. We distinguished qualitative literature from experimental literature (which was very limited at this point in time).

In the following sections, two distinct problems regarding the use of the war metaphor are discussed: the issues around its intended or potential consequences, and its actual efficacy with respect to those consequences. Section 2 outlines the concept of metaphorical framing and the traditional debate on the war metaphor. Section 3 surveys the existing literature about the use of this metaphor concerning COVID-19

and the different criticisms of its potential social and political consequences. Section 4 focuses on the specific theme emerging from the literature, which is the use of the war metaphor to foster obedience to government restrictions set in place to combat the pandemic, including mask requirements, vaccine mandates and lockdowns. Sections 5 and 6 analyse the efficacy of the use of the war metaphor and present empirical evidence, and Sect. 7 discusses those experiments. Section 8 summarises the conclusions drawn from this work.

To preface this, we are aware that it is difficult to assess causal connections in social science (see Kincaid, 2009, for a different approach see Leonelli 2021). The war metaphor is no exception, and we do not intend to discuss the problem as a whole in this paper. Therefore, we will not claim specific conclusions in this regard. However, it could be useful to present evidence resulting from experiments to derive suggestions for further research on the topic of using war metaphors in social communication.

2 The standard view of metaphors and the first debates on war metaphors

A large part of the contemporary discussion on metaphors originated from a seminal book by Max Black (1962/2019), whose recent edition is a sign of its influence on subsequent studies. Also relying on Black's work, Hesse (1966) discussed the explanatory function of a metaphoric re-description of the scientific domain and the use of metaphors for understanding scientific practices. Lakoff and Johnson (1980/2003) consider metaphors to be a tactic for framing problems, and at the same time they show how metaphors are entrenched in our daily discourse, belong to our conceptualisation and influence our behaviour. Although it includes some reservations, refinements and criticisms (e.g. Ritchie, 2013; Flusberg et al., 2018), Lakoff and Johnson's conceptual metaphor theory became mainstream in studying the way metaphors frame problems and affect reasoning, actions and decision making.

In this view, metaphors serve the purpose of helping us to understand unfamiliar situations by exploiting familiar conceptual domains (space, war, motion, etc.) to better manage our reasoning and problem-solving processes. Metaphors connect the target domain (the unknown) with a source (the familiar). But what does it mean to understand a field or a domain in terms of another? As presented by Kövecses (2010), the answer is that there is a set of systematic correspondences between the source and the target. Constituent elements of the target domain correspond to and/or are projected onto constituent elements of the source domain. Technically, these conceptual correspondences are referred to as 'mappings'. Therefore, understanding a metaphor means recognising the systematic mappings between a source and its target.

The choice of one metaphor over another determines how a problem is represented. Given that people often have neither the capacity nor the time to elaborate on different representations, using a metaphor helps to guide both reasoning and behaviour. In this respect, metaphors are like models that can be used to solve problems for which solutions are hard to find.

Metaphors, therefore, are supposed to help us better understand a problem and search for solutions. But in framing a problem, the cognitive import must be distin-

guished from the persuasive import. Some metaphors are 'neutral' in the sense that they facilitate the understanding of a problem, such as the metaphor of flowing water, which could help students to understand the flow of an electric charge. On the other hand, metaphor choice in public communication can influence behaviours (such as in advertising) and may have an emotive impact with consequences that go beyond clarifying the problem at stake.[1]

Being part of our conceptual makeup, the war metaphor is one of the most powerful and widely used metaphors in many fields. As Lakoff and Johnson remark, using war as a metaphor influences our thoughts and actions, both in how we present arguments and in the way that we argue:

> It is important to see that we don't just *talk* about arguments in terms of war. We can win or lose arguments. We see the person we are arguing with as an opponent. We attack his positions, and we defend our own. We gain and lose ground. We plan and use strategies. If we find a position indefensible, we can abandon it and take a new line of attack. Many of the things we *do* in arguing are partially structured by the concept of war. (Lakoff & Johnson, 2003, 4)

Comparing an argument to war is not necessary. We might frame an argument not as a fight, but as a dance, where the performers have the goal of a balanced aesthetic. Lakoff and Johnson claimed that 'we would probably not view them as arguing at all' because what we perceive as an argument is strictly influenced by war metaphors and, therefore, we see it as more like a fight than a dance. The war metaphor is so entrenched in many levels of our culture that we even see it in education. For instance, Deignan (2017, 212–218) reminds us that the war metaphor is often used to describe the school environment, where school is compared to a 'war zone' and teaching to a 'battle', with 'teachers parachuted into school from high', and so on.

However, the literature on this topic reveals some controversial effects from the use of this metaphor. In a very critical essay, Chapman and Miller focus on two of the main examples of the war metaphor in the twentieth century: the 'war on poverty' and the 'war on drugs'. They conclude that, notwithstanding some success, many consequences were strongly negative. The war on poverty, based on the presupposition that there is a fundamental link between poverty and crime, 'ultimately served to normalize the stigmatization of the urban poor' (Chapman & Miller, 2020, 1112). On the other hand, the war on drugs served to 'disrupt minority communities and silence dissent of the anti-war movement for generations to come while fuelling personal goals, political ambition, and economic gain for countless stakeholders' (Chapman & Miller, 2020, 1114). This last feature is confirmed by the admission of John Ehrlichman, Nixon's former domestic policy chief:

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[1] For instance, Condit (1999) compares the influence of two contrasting metaphors for the understanding of DNA heritage: the 'lottery' and the 'blueprint' metaphors. She shows that the latter partly influences people to accept a non-deterministic view of genetics, therefore making a more general contribution to their attitude towards genetics.

We knew we could not make it illegal to be either against the war or black, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders, raid their homes, break up their meetings, and vilify them night after night on the evening news. Did we know we were lying about the drugs? Of course, we did. (Quoted in Chapman & Miller, 2020, 1114)

Another well-known controversy about the war metaphor concerns the 'fight on cancer'. Anticipating concerns raised by the use of the war metaphor in the emergence of COVID-19, Susan Sontag (1978) denounced the distortions of the military rhetoric about cancer and later (1989, 11) criticised how 'military metaphors contribute to the stigmatizing of certain illnesses and, by extension, of those who are ill'. Politicians likely did not pay attention to the strong final remarks in her book on the crisis created by AIDS, which was not so different from the crisis created by COVID-19:

No. It is not desirable for medicine, any more than for war, to be 'total'. Neither is the crisis created by AIDS a 'total' anything. We are not being invaded. The body is not a battlefield. The ill are neither unavoidable casualties nor the enemy. We – medicine, society – are not authorized to fight back by any means whatever. … About the metaphor, the military one, I would say, if I may paraphrase Lucretius: Give it back to the war-makers. (Sontag, 1989, 95)

The use of the war metaphor in the context of cancer is relevant because it reveals the existence of a long tradition of conceptualisation of disease in warfare terms and constitutes the background of the first, seminal, empirical studies on metaphors. Sontag's viewpoint was followed by extensive literature and empirical studies on the role of priming by the use of different metaphors (e.g. war versus journey), framing the emotional response to disease (Hendricks et al., 2018; see also Semino et al. 2018). Flusberg et al. (2018) present a wide bibliography on the different applications of war metaphors, warning that

the meaning (and consequences) of war metaphors is intimately tied to the context in which they are used, which may result in either positive or negative outcomes, depending on the situation. Thus, blanket statements about whether or not a war frame is useful are misguided or overly constraining. (Flusberg et al. 2018, 1)

They conclude that, although the war metaphor may be useful in encouraging preventative behaviours, 'when diseases are enemies in a war, people with diseases are reduced to battlefields on which war is fought. In this way, the fear evoked by war metaphors can also be de-motivating' (Flusberg et al., 2018, 7).

Hauser and Schwarz (2020) conducted further empirical work suggesting that for non-patients, the use of violent metaphors negatively affects inferences about cancer treatment, prevention and monitoring. Framing cancer with metaphors of battles, war and enemies makes treatment appear to be difficult and discourages prevention by

increasing a fatalistic attitude, which fails to motivate people to visit their doctor at the first sign of cancer. They concluded that the frequent use of words like 'war' and 'battle' in public discourse about cancer 'can have negative implications for the health beliefs of the public' (Hauser & Schwarz, 2020).

Wackers, Plug and Steen (2021) discuss how rhetoric-oriented approaches to metaphors emerged in recent decades that focused, not on their cognitive features, but on their communicative functions (see also Reijnierse et al., 2019). Their paper presented an excellent analysis of the different forms of resistance to violent metaphors that discuss cancer with warlike expressions and suggested a need 'to improve our understanding of the negative points of view language users hold towards the metaphor in question' (Wackers et al., 2021, 76). The authors provide a linguistic analysis of six case studies, based both on pragma-dialectics and the Deliberate Metaphor Theory. They show how patients directly react to this metaphor in different ways by making requests (e.g. 'Don't call me a hero'), by describing the negative role of the metaphor (as it describes 'the burden of healing on patients, by turning them into winners and losers') or by showing disdain for the terminology used (e.g. 'I wish people would stop using cliches: "You are so brave" and "You are a warrior"'). Susan Sontag's denunciation now seems to be supported by a study on how patients react to the metaphor.

3 The different uses of the war metaphor in the COVID-19 pandemic

Despite Susan Sontag's appeal against the idea that patients are soldiers fighting a hidden enemy, the war metaphor invaded our public discourse again, this time with a different perspective. Where in the context of cancer, the metaphor was that of an individual war, in the context of COVID-19, the prevalent talk was that of a collective war that the entire society has to fight. Most heads of state used the war metaphor with this collective significance. A typical example was a speech delivered in March 2020 by the former President of the United States, Donald Trump, who called himself a 'wartime president' and asserted that 'we're going to defeat the invisible enemy. [. .] It'll be a total victory' (Trump, 2020).

The war metaphor developed into an attitude that spread rapidly through various nations facing the pandemic and, almost as rapidly, became the subject of analysis in many papers. It is worth noting that as early as February 2020, there were almost 7,000 papers in the CORD-19 dataset relating to COVID-19 and the use of the war metaphor. A first wave of papers critically discusses the use of the metaphor by leaders around the world. Gillis (2020, 139–145) gave a detailed list of quotations containing war metaphors by Boris Johnson, Uhuru Kenyatta, Emmanuel Macron, Narendra Modi, Benjamin Netanyahu, Pedro Sanchez and Donald Trump. Islentyeva (2020) compared the speeches of Johnson, Trump, Angela Merkel and Vladimir Putin with the purpose of identifying 'the differences and similarities in the political framing of the pandemic and these governments' responses to it' (Islentyeva, 2020, 157). Jaworska (2020) compares the terminology used in the coverage of COVID-19 in the US and the UK with the different terminology used in Germany, showing

the wider usage of war metaphors in the former. Fotherby (2020) and Schoeneborn (2020) present similar reports with critical attitudes.

Castro Seixas (2021) lists a dozen various intentions with which war metaphors were used during the pandemic. After presenting these different contexts, she remarks that we need further studies on the 'reception of these discourses in order to examine the effectiveness of the war metaphor' (p. 9). Our study is a first step in this direction. Following Flusberg's advice, we believe it is important to not assume a preconceived attitude on the use of the metaphor and to carefully examine the different contexts in which it has been applied, interpreted or criticised for its intended or possible political and social consequences.

(i) *From healthcare effects on emergencies to dubious social consequences*
    Most papers rely on the traditional analysis of 'war' as the source domain and 'disease' as the target domain, as presented, for instance, in the following chart (Sun 2010, 20):

> *Source: War   Target: Disease*
> Enemy   Disease
> Soldiers   Doctors and nurses
> Weapons   Medicine
> Battleground   Body
> Winning a war   Curing a disease
> Losing a war   Failing in treatment
> Strategies in a war   Strategies of treating a disease

Musu (2020) analogously summarised the basic elements of the metaphor as applied to COVID-19. The wartime imagery is compelling. It identifies an enemy (the virus), a strategy (to 'flatten the curve', but also to 'save the economy'), the front-line warriors (health-care personnel), the home front (people isolating at home), and the traitors and deserters (people breaking social-distancing rules).

In the pandemic, the use of the metaphor received contrasting evaluations. Several publications emphasised the metaphor's positive influence in instilling a feeling of urgency in health-care organisations responding to the pandemic (e.g. Jetly et al., 2020; Maxwell et al., 2020). Jaworska (2020) claims that 'using war metaphors can sometimes be constructive in that it can mobilize public health efforts; but when it comes to patients, particularly those who suffer from deadly conditions, it can be distressing and even unethical, specifically if they or their doctors are not "winning the battle"'. Marron et al. (2020) point to the difference between cases of cancer and COVID-19. They note that in the former case, patients are called 'heroes', while in the latter, this title is commonly bestowed on healthcare workers. But, also in the latter case, the metaphor is a double-edged sword. While it helps in recognising the risks that health workers take in being exposed to the virus, it also enables passivity in the larger community because of a disconnection with COVID-19 and, at the same time, minimises the risks and contributions of non-medical essential workers. On this line of problems, Chapman and Miller

(2020, 116) discuss how the metaphors of 'the front line' and 'heroes' hide the major risk of exposure for 'essential workers', which is another name for 'low-skill' workers. The service industry put their workers at higher risk of exposure to the virus than workers in other industries. According to them, 'the war metaphor strategy and language intentionally shape policy by defining victory conditions. Thus, metaphor language catalyses the policy agenda. It is a call to gather a coalition of willing stakeholders to bravely execute the war with precision'. The use of the metaphor for describing the reaction to the COVID-19 emergency is a way of simplifying and dichotomising social issues, with the consequence being a disproportionate impact on minority communities. The war frame has therefore been considered as a way to mask social inequalities (Ribeiro et al., 2018), and at the same time to make social inequality among citizens less apparent. Smith and Judd (2020) discuss the creation of a class divide of 'social vulnerability', where 'those most vulnerable will be the hardest hit', including people with mental health issues that are exacerbated by the expectation to self-isolate. Ray and Rojas (2020) make an analogous point with the idea that the metaphor of 'heroes' in the war hides the fact that people in low-income brackets are more frequently exposed to the virus so that the rest of the population can safely remain in their homes (see also Gillis, 2020, 154; Chapman & Miller, 2020, 116).

(ii) *The problem of accountability*: *from real wars to metaphorical wars*

It is common to claim that emergency powers are typically also exploited to silence political dissent, delegitimise opposition and avoid government accountability (Chang, 2011; Ferejohn & Pasquino, 2004; Setty, 2015). Relying on Musu (2020), Rappert (2021) offers a comparison between the information about deaths in COVID-19 and the same kind of information shared during the Iraq war. Lack of 'appropriate' data has been a common strategy both in discussing the number of deaths from COVID-19 as a consequence of government policy and in discussing the number of civilians killed by the UK in the Iraq War – even if, during the pandemic, deaths have been counted with more reliable and shared methodologies. Considering that, in terms of mobilisation of resources, the pandemic has been as close as it can get to 'fighting a war without actually fighting a war', the author suggests that the government has avoided accountability just as it did during the real war (Rappert 2021, 62–63).

While Rappert analyses the ways in which the government may avoid accountability, even in the case of death counts, Ajana (2021, 25) presents the idea of the 'immunitarian paradigm' (Esposito, 2011) in connection with the means for abdicating responsibility and avoiding accountability. Ajana specifically refers, in this case, to Bolsonaro's attitude of inaction, or 'strategic ignorance' and 'wilful unknowing' (McGoey, 2019). But Bolsonaro's case is just one example of the rhetorical appeal to the notion of natural herd immunity applied in the context of the COVID-19 pandemic. Ajana refers to the famous statement by Trump in March 2020, 'We cannot let the cure be worse than the problem itself'. Natural herd immunity would sacrifice the weak and the sick for the survival of the herd and the economy to the point that this strategy has been called 'market eugenics' (Laterza & Romer, 2020). With the idea of natural herd immunity, we have another aspect of the militaristic metaphor: a 'generation battle' between

'medically imperilled boomers and economically imperilled millennials' (Ayana, 2021, 25). We may see other 'fights' taking place such as battles between affluent citizens and people from ethnic minority groups who died in disproportionate numbers for many reasons, such as their working conditions or living in crowded houses. We may also see a fight between rich countries with easy access to vaccines and poor countries with scarce access (Ajana, 2021, 21).

Esposito (2011, 154–156) reminds us how war metaphors permeate the scientific discourse on immunity. The immunological lexicon is full of expressions like 'the detection of the enemy', 'the activation of the defence lines', 'the launch of counterattacks', the use of 'ammunition', the 'capture of opponents' and so on. Ajana stresses that immunity is generally presented in terms of defence and self-protection, according to an individualistic view of the immune system. The results are an obsessive attention to the 'boundaries', a phobic fear of infection and the continuous erection of new defensive borders. The conclusive suggestion of the paper is that defending a population is not only a matter of sealing the inside from the outside and erecting borders, but of fostering strong cooperation in the community, overcoming the idea of the warlike metaphors linked to COVID-19 (Ajana 2021, 23–25).

(iii) *Justifying emergency measures and social divisions*

The general concern about the political use of the war metaphor had already been discussed during the first SARS epidemic. Charteris-Black (2004) showed, with an analysis of various newspapers, that there are different underlying political agendas in the use of the metaphor 'disease is a war'. There is a long tradition of analysing the use of war metaphors to foster authoritarian policies and sentiments, including a discussion on the concept of 'invasive' species (Larson et al., 2005, 244). Some relevant background to this concern is the influence of Naomi Klein, who claims that governments amplify the feeling of risk for real or supposed dangers to 'shock' citizens so that they are willing to 'give up things they would otherwise fiercely protect' (Klein, 2007, 17).

Chapman and Miller (2020, 1110) suggest that 'when a metaphor is viewed from Klein's shock doctrine perspective, it serves as a means in which societies become shocked or disoriented'. According to them, the war metaphor is perfectly suited to this purpose. 'The metaphor is a powerful tool in the form of convincing the general public that external industrial interests, fused with government, can solve problems.' This literature suggests, therefore, that the war metaphor is sometimes used for lying to and deceiving citizens. With the emergence of COVID-19, these ideas have been strengthened.

Some authors present wider lists of possible negative consequences on the social environment. Caso (2020) refers to (i) fuelling hatred, antagonism and nationalism, (ii) breeding and legitimising authoritarianism and (iii) producing consequences that would last beyond the particular period of time. Rohela et al. (2020) better specify the war metaphor's consequences on social cohesion: among them, the creation of an epidemic of fear, discrimination, stigma, and the acceptance of 'collateral damage', breaking the traditional therapeutic alliance.

Among the possible political consequences of the martial metaphor, one of the most debated is the silencing of any possible criticism. Authors who express

their worry for this possible effect of the metaphor describe different strategies that could bring it about. One strategy is to use the metaphor for drawing a line between the good (us) and the bad (the virus) by unifying the population against a common enemy, which prevents the transformation of a health crisis into a social crisis and hides the disparity of victims with the tag of 'heroes'. They suggest that this dichotomy leaves no room for ethical complexity. 'Every political action is aimed at winning. Any criticism becomes inaudible or suspicious' (Wagener, 2020, 576). A different strategy was correlated to the use of the metaphor to justify repressive legislation. On this concern, one of the most radical criticisms comes from Matilda Gillis (2020), who analyses the role of the metaphor for justifying legislative responses to the COVID-19 pandemic. She carefully describes the kinds of legislative actions taken to 'restrict civil liberties and human rights' (mainly freedom of movement and freedom of association) and how they have been justified using different metaphoric clusters (Gillis, 2020, 136). Relying on Lakoff and Johnson's view, she claims that metaphors persuade and manipulate people, shaping how we think about reality by triggering our emotional responses.

4 War metaphor fostering obedience to social order

From the general survey of the literature given above, we can see that many authors have considered martial metaphors to be dangerous because of their possible consequences for society. In particular, in the discussion about justifying emergency measures, they gave prominence to the risk of individuals passively complying with restrictions on individual liberty.

Among the first to denounce the danger of the war metaphor in this regard, the Italian philosopher Giorgio Agamben claimed:

> It's not surprising that we talk about the virus in terms of a war. The emergency provisions effectively force us to live under a curfew. But a war against an invisible enemy that can nestle in any other human being is the most absurd of wars. It is, to be truthful, a civil war. The enemy isn't somewhere outside, it's inside us. What's worrying is not so much the present, not only the present at least, but the aftermath. In the same way as the legacies of wars on peacetime have included a whole range of nefarious technologies, from barbed wire to nuclear plants, so it is very likely that there will be attempts to carry on pursuing, even after the medical emergency is over, many of the experiments governments hadn't been able to implement. (Agamben, 2020)

Agamben pointed to the real problem of our concern about the future. From the legal viewpoint, many authors stressed the necessity that the use of tracking systems be explicitly subjected to temporal limitations to avoid possible violations of privacy after the emergency. They insisted on the point that 'while the curtailment of certain freedoms might be temporarily necessary to deal with the COVID-19 outbreak,

such curtailment should be carefully limited and constantly monitored so as to avoid abuses' (Spadaro, 2020, 2. See also Zinn, 2020).

Agamben's argument, criticising the limitations of liberty, denounces the consequences of the war metaphor concerning the influence it may have in pressing people to adhere to those limitations. The premise behind Agamben's arguments is that using the metaphor of war is an effective strategy to make people more willingly adhere to restrictions of liberties. As we have seen, this claim was shared by many papers discussing the political role of the war metaphor in the pandemic.

The main supposed consequence of the use of the war metaphor is ensuring compliance with legislative measures, given that the metaphor suggests a 'widespread sense of civic duty and willingness to sacrifice personal matters for the greater good and a shared purpose' (Gillis, 2020, 152). The efficacy of the metaphor for this purpose is taken for granted, and Gillis claims that its use 'undoubtedly helped to encourage populations across the world to accept difficult intrusions on their lives and liberties' (Gillis, 2020, 153). Albin Waneger takes a similar stance and claims that 'global political elites are using war talk to prepare populations for economic and democratic measures that may threaten basic citizen rights' (Waneger, 2020, 577).

However, some authors express doubts about the actual efficacy of the metaphor in this regard. If, on the one hand, the metaphor can help by providing concrete construal that makes salient the need for urgent action, on the other hand, it can 'backfire and undermine motivation to engage in recommended behavior' (Landau et al., 2018, 148). An analogous problem is raised by Hendricks et al. (2018) with respect to the 'fight' against cancer. Philipp Wicke and Marianna Bolognesi worked on a huge research corpus of 300,000 tweets mentioning the COVID-19 pandemic. They claim that, although it is the most diffused metaphor in Twitter, war framing is not suitable for elaborating on the discourse of all aspects of the current situation. In particular, they show that 'the WAR frame, like any other frame, is useful and apt to talk about some aspects of the pandemic, such as the treatment of the virus and the operations performed by doctors and nurses in hospitals, but not to talk about other aspects, such as the need to feel our family close to us, while respecting the social distancing measures, or the collaborative efforts that we should undertake in order to #flattenthecurve' (Wicke & Bolognesi, 2020, 22).

These last remarks seem to challenge the assumption that the war metaphor is a good frame for persuading people to follow strict rules regarding lockdowns, social distancing, mask use and limiting their freedom of movement and other liberties. We have, therefore, two conflicting viewpoints on the question of whether the war metaphor encourages citizens to passively accept restrictions on civil liberties. Contrary to this popular assumption, some authors claim that this is not the case.

This conflict of intuitions emphasises the necessity of not leaping from the warning of a *potential* causal impact of the metaphor to the claim that this influence *is* actually occurring. We need more than intuitions – at the very least some experimental or statistical investigations. In the following, after introducing the debate on experimental studies on metaphors, we analyse the few experimental outcomes pertaining to the use of the war metaphor in the COVID-19 pandemic.

5 Communicative efficacy of metaphors: setting the stage

Experimental research on the relationship between the use of warlike metaphors and citizens' behaviour during the pandemic is still in its infancy. This research relies on and also criticises many previous works, among which Thibodeau and Boroditsky (2011/2013)[2] and Burgers et al. (2016).

Thibodeau and Boroditsky (2011) confronted the problem of whether metaphors influence the way people build knowledge structures, develop inferences and make decisions on how to solve problems. They started from the general hypothesis that points to analogy as the basic mechanism to explain the influence of the metaphor for conceptualisation and reasoning: 'If metaphors in language invite conceptual analogies, then different metaphors should bring to mind different structures and suggest different analogical inferences'. Coherently with this working hypothesis, they used two different metaphors (the beast and the virus) to discuss the same problem (social control of crime). Their five experiments seem to suggest that framing a crime issue with one of two contrasting metaphors could systematically influence how people think about the problem: we *cure* an illness and *fight* a monster. Therefore, presenting a problem of social control with different metaphors may lead people to prefer more or less stringent measures of control regarding reform policies: 'When crime was framed as a virus, participants were more likely to suggest social reform. Alternatively, when crime was framed as a beast, participants were more likely to suggest law enforcement and punishment'. Their results suggest that the metaphor used is stronger than other predictors (gender and political affiliations) and that Republicans are less influenced by metaphors than Democrats and Independents. The authors concluded that 'metaphors can influence how people conceptualize and in turn approach solving an important social issue, even if people don't explicitly perceive the metaphor as being especially influential' (p. 5).

In a subsequent paper, Thibodeau and Boroditsky (2013) presented further experiments aimed at showing that metaphors (even when hidden) not only influence imagination, but also our decision-making. Subjects who read the text with the 'beast' metaphor chose enforcement-oriented options, while those who read the text with the 'virus' metaphor opted for reform-oriented options. This last experiment was criticised by Steen et al. (2014), who questioned the idea that metaphors unavoidably influence reasoning processes and consequent behaviour. They produced different experimental results and posed the question of better understanding under which conditions metaphors do or do not influence reasoning. The answer to this criticism (Thibodeau & Boroditsky, 2015) was essentially based on methodological issues, and given its highly technical character, we will not pursue this aspect here. Instead, we would like to point out an interesting, seemingly contradictory, point made by their research: that more Democrats and Independents are influenced by the metaphor 'crime is a beast' (which sounds similar to the war metaphor for its aggressive nature) than Republicans (Thibodeau & Boroditsky 2011, 10; 2013, 6). To explain this fact, they suggest that individuals are more resistant to persuasion when they are already

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[2] The Thibodeau-Boroditsky papers do not make explicit use of the war metaphor, although the 'beast' metaphor has some aspect of a bellicose attitude, given the remark that we 'fight' beasts.

ideologically committed to an issue. Republicans are already committed to crime reduction programmes based on enforcement and punishment solutions, and therefore less swayed by the violent metaphor than are Democrats or Independents. However, these results show that there are some problems with the relationship between metaphors and political attitudes or political knowledge.

On this last point, Burgers et al. (2016) discuss some experimental works that offer incompatible results on the problem of whether the influence of a metaphor is positively or negatively associated with the political knowledge of participants. Working on a general study of framing effects, Burgers et al. (2016) claim that those conflicting findings could be reconciled by considering the specific, different functions that the figurative frame may have. They propose, therefore, that on the one hand, 'figurative frames are most effective for participants under low political knowledge when they serve to present a problem definition of a hitherto unknown concept or issue'. On the other hand, 'figurative frames that respond to an existing frame (e.g. by exaggerating, attacking or maintaining existing frames) are most effective for participants with high political knowledge' (Burgers et al., 2016, 15). The suggested reason behind the former effect is that in people with little political knowledge, the metaphor follows its standard role of adding information by making an unknown issue more concrete and comprehensible, but when the metaphor enters an existing frame, individuals with background knowledge may fully appreciate the enforcement of a frame already in use.

6 The war metaphor and COVID-19: experimental research

After those early discussions on the influence of different metaphors on reasoning and decision making, some authors worked specifically on contrasting the war metaphor with other metaphors or with 'neutral' presentations of the problem. Panzeri et al. (2021) conducted a set of experiments on the framing effect of the war metaphor, which concluded with a criticism of the direct framing effect of the conceptual metaphor theory as suggested by Thibodeau and Boroditsky. Using an online questionnaire with 202 Italian participants, they analysed the conditions under which metaphors may influence reasoning, dividing the subjects into two settings: one with a war metaphor and the other with a neutral description. They aimed at verifying (i) whether the metaphor affects people's reasoning and opinion formation and (ii) whether certain groups are more sensitive than others to metaphorical framing. They proposed six elements connected to the pandemic: the criteria for the distribution of vaccines, the enforcement of the use of tracing applications, the limitation of personal liberties, the distribution of funds, the situations in hospitals, the role of doctors and nurses, and the spreading of inaccurate news. Two different versions of these texts contained either several war-related metaphors or none. The subjects were then required to answer six questions with four options that included two contradictory extremes. For instance, Option 1 was in favour of, and Option 4 was against the suspension of civil liberties. At the end of the questionnaire, participants were asked from which source they obtained information (television, traditional news, social networks, etc.). On the first aspect of their experiment, statistical analysis showed that

there was no relevant difference in reasoning among the two groups of subjects. The conclusion was that 'people's sensitivity to war congruent claims about the SARS-CoV-2 pandemic does not seem to be influenced by the war metaphoric framing per se' (Panzeri et al., 2021, 11)[3].

They came to the conclusion that we cannot automatically attribute a generalised effect to the metaphor, although there is some effect in particular contexts. Partly following the experiments on 'political knowledge' by Burgers et al. (2016), they specifically discussed the role of social networks in helping to accept or reject different kinds of metaphors. Concerning this aspect, they concluded that political orientation on the massive use of social networks impacted the selection of war-congruent options after the exposition to warlike metaphors. The suggestion of the paper was to avoid a strictly psychological account that views metaphors as shaping our thoughts, and to focus instead on which kinds of individuals are more prone to being influenced by the framing effect of metaphors. The authors' hypothesis is that individuals whose prior set of personal opinions is already consistent with the related entailments of war metaphors are the ones that easily 'resonate' with the consequences of such metaphors. In the case of war metaphors, right-wing individuals would find, in the metaphorical cluster of war, a frame congruent with their inclinations. However, this conclusion does not imply that right-wing individuals would obediently follow the dictates of the war on COVID-19, but only that they are more susceptible to accepting 'bellicose entailments' and have a strong 'emotional involvement' linked to the war metaphor (Panzeri et al., 2021, 16). The main result of these experiments is, therefore, a warning against taking for granted any a priori assumptions about the effects of war metaphors on reasoning. The war metaphor is ubiquitous, but its functions are more context-dependent than many suppose.

Burnette et al. (2021) indirectly touch on the same problem. Their focus is on how metaphors may foster a growth mindset and self-efficacy[4] regarding personal ability to manage the virus. They reported on two studies where they randomly assigned

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[3] Similar results are suggested by a first experiment performed at the University of Piemonte Orientale by Marco Novarese as reported by Benzi (2021) concerning the problem of the role of the war metaphor in fostering obedience. The experiment was preceded by an online survey on a population of 500 participants on the question, 'Which metaphor would you use to describe the present situation?' to check whether the war metaphor was already generally accepted. Less than a mere 10% used 'bellicose' metaphors, showing that the time (March 2020) was suitable for proposing the experiment with a test given online to 883 subjects. The subjects were divided into two groups exposed to two different narratives with and without the use of the war metaphor (for example, 'We are living during a war against an invisible enemy, and, to fight it, we need new weapons', and 'We are living during a pandemic, unprecedented in the contemporary world, and to overcome it we need emergency measures'). After the priming of these two different questions, the groups were asked how disposed they were to accept limitations to their personal liberties to solve the situation. The experiment aimed to test whether the framing effect of the war metaphor could be shown as influencing the perception of the problem, working on our tendency towards instinctive actions or decision-making stereotypes instead of following reasoning activity. When asked about their disposition to accept limitations of liberty, both groups gave very similar answers, with absolutely no significant statistical difference.

[4] Growth mindset is grounded on the idea that human attributes (e.g. intelligence) and traits (e.g. resilience) can grow and develop, and it is predicated by the assumption that humans and their characteristics can and do change as a result of experience, education and maturation. Self-efficacy is the belief in one's ability to plan and strategise ways to progress toward desired end states (see Burnette et al., 2021, 2).

participants two articles about COVID-19, centred around either a warlike metaphor (our 'fight' against the virus) or a metaphor about change (like 'break the chain of transmission' or 'flatten the curve'). Interestingly, the war metaphor article concluded with the message that we must 'unite to fight the enemy', while the change-focused article depicted COVID-19 as 'a challenge that individuals can meet head-on by taking individual action to flatten the curve' (p. 13).

The first study, with 426 participants in the US, was developed during March and April of 2020, while the second study, thought to replicate the findings of the first, was developed in November 2020 with 702 participants. Although the work was more focused on the problems of mindset, self-efficacy and well-being, they derived some relevant results about behavioural intentions following the two kinds of framing. In the first study, they found that participants who were given information following the change metaphor reported more self-efficacy concerning behaviour suggested by the health authorities, while less self-efficacy resulted in participants who were given information with a bellicose metaphor. In the second study, growth mindset and self-efficacy were correlated with 'stronger intentions to engage in recommended health behaviour' (6). The second study had an additional focus on the political ideology (liberal/conservative) and political affiliations. Although the study did not imply any significant relationship between the message (war or change) and political ideology or mindset, greater conservatism predicted lower levels of growth mindset, lower levels of anxiety, greater well-being and lower levels of behavioural intention. Further, ideology was strongly associated with attitudes concerning mask-wearing.

However, the second study failed to replicate the effects of the first, presenting both metaphors at the same level of influence. This was probably due to changed social conditions. In November 2020, the 'flatten the curve' metaphor was less frequently employed, perhaps damaging its ability to foster a belief in change, and at the same time, the US was in the midst of a contentious political election in which certain recommended behaviours became political, which might have been a confounding factor. This result underlines the difficulty of performing replicable experiments and reaching solid conclusions when – as in the case of the COVID-19 pandemic – the social and political context is rapidly changing.

Schnepf and Christmann (2021) provided a follow-up on the experiments on the influence of the war metaphor on actual behaviour. Partly following Thibodeau and Boroditsky (2013), they worked on a series of hypotheses based on the comparison between two alternative metaphors: 'war' and 'struggle'. The first three hypotheses – relevant for our discussion – are:

(1) the war metaphor increases support for restrictive policies.
(2) the war metaphor increases fears and threat perception of the pandemic.
(3) people presented with war metaphors will use militaristic terms to describe other people or the government.

To test these hypotheses, they conducted a study with 174 US participants in April 2020 (62% were men, 38% were women, 66% were Republicans and 34% were Democrats). They were randomly divided into two groups and exposed to fictitious newspaper reports on the pandemic, which had the same content but varied in their

headings and individual mentions in the text of the two alternative metaphors of a battle and a struggle. The questions asked at the end were about how much fear had been provoked, which policies (if any) they would suggest adopting and what type of response should be given to people who break the rules (such as ignoring hygiene guidelines or social distancing). Contrary to their expectations, they found no enhancing effect of the battle metaphor concerning policy support, contrary to Hypothesis (1). Moreover, they noticed a reverse framing effect of perceived danger. People exposed to the struggle metaphor perceived the spread of the virus to be faster than those exposed to the 'battle' metaphor, disproving the theory that the militaristic metaphor would increase the sense of fear, contrary to Hypothesis (2). The only difference was that Republicans reported a lower spread perception when confronted with the 'battle' than with the 'struggle' frame, confirming the report of Thibodeau and Boroditsky (2013) that Republicans were less influenced by the war metaphor.

The experiment was repeated in two other studies performed simultaneously in Germany (with 476 participants) and the US (with 430 participants) in July 2020, at a time when the infection rate in Germany was reduced but rising in the US. The authors also studied the perception of government policies, asking participants how they would 'describe the government and its crisis management during the Corona crisis'. They included in their study some control variables like risk aversion, political trust and trust in science.

Both studies presented similar results, partly confirming Hypothesis (3), which stated that metaphorical framing triggers would frame consistent speech production in describing other people or the government, but this tendency failed to have any statistical significance. The variance between the two countries was mainly due to control variables (especially trust in science and politicians). The unexpected results of the first study were confirmed, supporting the conclusion that the war metaphor had no relevant effect on reasoning and attitudes towards the COVID-19 emergency. These results brought about a new hypothesis, for which 'the use of militaristic metaphors leads to higher ascriptions of responsibility to the state level and the government, whereas the concept of struggle enhances individual responsibility' (p. 30). This hypothesis might explain why there was a lower danger perception with the warlike metaphor and a stronger assumption for responsibility with the struggle metaphor.

Schnepf and Christmann (2021) presented two additional norming studies, based on data collected from 200 US participants and 237 German participants in the winter of 2020 (November and December). They presented a 'forced-choice task', in which participants, after an introduction about the pandemic and information from some newspapers describing the situation in terms of either a war or a struggle, were asked to describe 15 different situations with either the concept of a war or the concept of a struggle. The results confirmed the assumption that individual measures and individual responsibility exhibited a stronger association with the concept of a struggle, while national measures and government responsibility were more strongly associated with the concept of war. These results may be considered evidence for the general lack of superiority effects of militaristic metaphors in fostering adherence to COVID-19 restrictions.

The conclusion of the authors was that – contrary to Hypothesis (1) – 'these differences in concept associations may lead to a higher effectiveness of the struggle frame in the pandemic situation, especially about the compliance with individual behaviours such as mask-wearing, distance rules or self-isolation' (Schnepf & Christmann, 2021, 39). The supposed consequence of using war metaphors, given these results, is that it may have an unintended paradoxical effect to reduce personal involvement rather than enhance it. In accordance with the experiments conducted in Italy reported previously, the authors claim that we should 'avoid systematically overstating framing effects' (p. 43).

7 Some remarks on experimental results

There are many differences in both the methodology and results of the few experimental studies on the war metaphor and COVID-19 discussed above. There are various aspects to consider: (1) the way in which the war metaphor is confronted, (2) the time and location of the experiment, (3) the results of the influence of the war metaphor on obedience to government rules and (4) the influence of political attitudes.

(1) *Confrontation*: War metaphors are confronted with either a neutral presentation (Panzeri et al., 2021) or with metaphors about change (Burnette et al., 2021) or struggle (Schnepf & Christmann, 2021).

(2) *Time and location*: Some results were from studies performed at the beginning of the pandemic, and others during later time periods with stronger developments. Concerning location, the studies were performed with Italian, US and German subjects.

These aspects make it difficult to elaborate on a precise comparison. However, there are some general lines shared in each of these studies. All of them directly or indirectly placed doubt on the too-easy generalisation of the framing effect we find in Thibodeau and Boroditsky, and all used different variables to provide a more precise definition of contexts in which the consequences of the war metaphor are tested.

(3) *Influence of war metaphors on obeying limitation rules*: Regarding our main concern, Panzeri et al. (2021) found no evidence of an influence of the war metaphor on reasoning processes with respect to a neutral condition. People's sensitivity to war-congruent claims about the pandemic does not appear to be influenced by the war-metaphoric framing. The first study of Burnette et al. (2021), working on the concept of self-efficacy, shows that self-efficacy in following the social rules (distancing, mask wearing, etc.) was stronger in the 'change' condition than in the 'war' condition. This result implies that warlike metaphors have less of an effect on influencing positive attitudes to accepting limitations of liberty than the struggle metaphor. However, the second study did not verify this correspondence, casting doubt on the framing effect of both metaphors. Schnepf and Christmann (2021) show that the results of their experiments disconfirmed the hypothesis that the war metaphor increases support for restrictive policies. Besides, they found a correspondence between the struggle metaphor and individual responsibility (which means adherence to rules about restrictions of liberty), while the war metaphor was more linked to government responsibility, with the consequence of producing the paradoxical effect

of reducing personal involvement rather than enhancing it. Their studies support the general criticism of Panzeri et al. (2021) that disconfirmed the framing effect of the war metaphor in influencing reasoning and social attitudes towards the COVID-19 emergency.

(4) *Influence of political affiliation*: Although Thibodeau and Boroditsky (2013) remarked on some problems of interference from political attitudes, they claimed that metaphor framing was stronger than other predictors, such as political affiliation. This problem was treated with more care by the other studies. Panzeri et al. (2021), who strongly objected to accepting too hastily the 'conceptual metaphor' effect, found that the war metaphor had a particular connection with far-right participants who followed more social network news than 'standard' news. However, the influence was not precisely definite, and they suggested that people with warlike attitudes could 'resonate' or have 'emotional involvement' with the war metaphor, instead of being influenced by it. Burnette et al. (2021) discuss the problem of the influence of political attitudes as a relevant variable, especially during US elections, when the health rules proposed by the government were the object of a stark political contraposition. The political affiliation of Republicans is strongly tied to the rejection of restrictions on liberties. The different metaphors in this study do not show relevant influence with respect to political attitudes, suggesting that ideology is a stronger bias than metaphor framing, contrary to the claim of Thibodeau and Boroditsky. Schnepf and Christmann (2021) did not broadly consider political affiliations, but among their results, they found that Republicans were more influenced by the struggle metaphor than war in their perception of the spread of the disease, indirectly confirming the idea that war metaphors were irrelevant to a general influence on accepting limitations of liberty.

8 Conclusions

In this paper, we analysed some recent literature concerning different contexts of the use of the war metaphor relating to the COVID-19 pandemic, its use in medical emergencies and its general political use. From the literature we presented and from the experiments we analysed, we can derive some suggestions. The literature on COVID-19 dedicated a great deal of space to the use of the war metaphor in relation to the health environment. On the one hand, it criticised the consequences of the rhetoric of 'heroes' and 'winners' versus the 'defeated', and on the other hand, it acknowledged the positive impact that the metaphor may have had on the urgency of response to the pandemic. A wide literature analysed the rhetorical role of the war metaphor in the political arena, particularly pointing to negative consequences of dividing society into winners and losers, justifying extreme emergency measures (lockdowns, mask mandates, and vaccine requirements) and not holding governments accountable. However, on the other hand, experimental results show that the war metaphor may also have the opposite effect on the population in holding the government accountable and lowering the sense of individual responsibility, while other metaphors may increase the sense of individual responsibility.

With regard to our first research question, we found that the claim that the war metaphor had the effect of forcing citizens to obey restrictions meets a broad and

diverse opposition, as many authors argue that the metaphor may not only fail to have the intended effect but may even have the opposite effect. On our second research question, regarding the justifiability of the above-mentioned claim, the results of the experimental studies appear to go in a different direction. The experiments we have analysed clearly do not support the claim of inducing obedience to restrictions. Their results pose a strong challenge to making broad statements about the effects of the war metaphor on beliefs and behaviour. It also cast doubts on our intuitions regarding the use of metaphors, which may not necessarily match their actual efficacy.

Both our review and the present literature leave room for further investigations: (i) the comparison of the use of the warfare metaphor in the COVID-19 pandemic and in other epidemics, such as in SARS and Ebola; (ii) a comparison of specific 'under-metaphors' collected under the denomination of the war metaphor (citizens as soldiers, doctors as heroes, heads of state as leaders, etc.) and a comparison of the different formulations, effects and values of the war metaphor in different cultures and geographical contexts and different age groups; (iii) the distinction between the cognitive and persuasive roles of the metaphor where, in the former, metaphors help us to understand non-familiar aspects of the pandemic and, in the latter, metaphors induce a change in our behaviours; (iv) a robust methodology for comparing various experimental studies to select the variables relevant for causal modelling and for ascertaining the relationship between metaphoric communication and behaviour; (v) a comparison of the war metaphor with alternative metaphors, for which we already have many interesting proposals (Adam, 2020; Semino, 2021; and the #ReframeCOVID initiative).

Lakoff and Johnson's book is titled *Metaphors We Live By*. We will conclude by saying that metaphors can be used to deceive people, persuading them to buy something or behave in ways emotionally influenced by the metaphoric frame. But we may also be deceived by metaphors in a more hidden and dangerous way – by taking their efficacy for granted when such an assumption is not warranted.

Declarations

Conflict of interest The Authors declare that there is no conflict of interest.

Availability of data and Material Not applicable.

Code availability Not applicable.

Ethics approval Not applicable.

Consent to participate Not applicable.

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