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The Effects of Metaphorical Framing on Political Persuasion: A Systematic Literature Review

Amber Boeynaems^a, Christian Burgers^a, Elly A. Konijn^a, and Gerard J. Steen^b

^aVrije Universiteit Amsterdam; ^bUniversity of Amsterdam

ABSTRACT

Effects of metaphorical framing of political issues on opinion have been studied widely by two approaches: a critical-discourse approach (CDA) and a response-elicitation approach (REA). The current article reports a systematic literature review ($N = 109$) that examines whether these approaches report converging or diverging effects. We compared CDA and REA on the metaphorical frames that were studied and their reported effects. Results show that the CDA frames are typically more negative, nonfictional, and extreme than REA frames. Reported effects in CDA and REA studies differ in terms of presence, directionality, and strength, with CDA typically reporting strong effects in line with the frame, compared to REA. These differences in effects can be (partly) explained by the different frame characteristics. However, differences in the methods applied by CDA and REA could be (partly) responsible for these differences as well. In all, we conclude that the research field is fragmented on the impact of metaphors in politics.

Introduction

Over the past two decades, scholars from different research perspectives have extensively studied the effects of metaphorical framing on political persuasion (e.g., Charteris-Black, 2006; Mio, 1997; Musolff, 2014). Metaphors are often used to frame political issues (Mio, 1997), and these metaphorical frames are argued to affect how people reason on these issues (Bougher, 2012; Mio, 1997). For example, when the metaphor *a natural disaster* is used to refer to immigration, elements from the source domain of “disaster” are mapped onto the target domain of “immigration,” providing a negative image of immigration (Charteris-Black, 2006). Politicians use metaphors to characterize themselves, their opponents, and their political agendas, and use metaphorical language in policy debates to steer the public toward a certain viewpoint (Ottati, Renstrom, & Price, 2014).

The variety of disciplines and backgrounds that investigates metaphorical framing effects on political persuasion can be classified under two main research perspectives. The first research perspective is the critical-discourse approach (CDA). When studying metaphorical framing effects, CDA scholars look at real-world changes as a result of metaphorical framing and other systematic patterns in language use (e.g., Charteris-Black, 2006; Musolff, 2014). This means that these scholars do not create a specific research situation, but look at the relation between natural, authentic discourse and real world occurrences. The second perspective studies the effects of metaphorical framing of political issues by eliciting responses of participants exposed to language stimuli in a research situation. We call this a response-elicitation approach (REA; examples are: Hartman, 2012; Robins & Mayer, 2000). Scholars who take this approach believe that research needs to focus on how

CONTACT Amber Boeynaems  a.boeynaems@vu.nl  Department of Communication Science, Vrije Universiteit Amsterdam, De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands

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metaphors are processed and how they affect recipients while controlling for other factors. They consider this important in order to be able to show causal effects of metaphorical framing.

Proponents of the distinct perspectives (CDA, REA) are highly critical toward each other's working paradigms and research methods (Chilton, 2005; Graesser, Millis, & Zwaan, 1997). CDA and REA scholars question each other in terms of the reliability and validity of their reported results (Casasanto, 2010; Van Dijk, 1993). Nevertheless, scholars working from both approaches (CDA, REA) produced together a large number of studies about the effects of metaphorical framing on political persuasion. However, since a comparison of these metaphorical framing effects has, to the best of our knowledge, not been made before, it remains unclear whether the two approaches report converging or diverging effects. Hence, we conducted a systematic literature review that aims to reveal whether the two approaches are in agreement or disagreement about the impact of metaphorical frames. Such an overarching comparison can reveal if the research field is united or fragmented on the impact of metaphors in political discourse.

Metaphorical framing effects

Metaphors are used to talk or write about a variety of issues, such as economics (Morris, Sheldon, Ames, & Young, 2007), health (Nerlich, Hamilton, & Row, 2002), and immigration (Charteris-Black, 2006). The hypothesis that metaphors can affect recipients has been acknowledged since antiquity (Quintilian, 1959). However, ideas about how metaphors impact people have changed over time (e.g., Steen, 2008). Since the 1980s, it has been widely acknowledged that metaphors not only serve as linguistic ornaments that add rhetorical flourish to a text or speech, but are able to transfer conceptual content as well (Lakoff & Johnson, 1980). Thereby, as argued by Burgers, Konijn, and Steen (2016), metaphors can fulfill one or more of the functions of framing as defined by Entman (1993): they can foreground a particular problem definition, give a causal interpretation, address a problem evaluation and/or promote a possible problem solution. For example, the frame *immigration is a natural disaster* (Charteris-Black, 2006), portrays immigration as something negative (problem definition), which causes serious trouble (causal interpretation), and is difficult to control (problem evaluation).

A domain in which metaphors play an important role is political communication (e.g., Mio, 1997; Ottati et al., 2014). Metaphors can explain a particular policy stance, persuade people toward a certain viewpoint, and affect people's opinion about policy issues (Bougher, 2012; Ottati et al., 2014). Metaphors were shown to help people to understand everyday issues and thereby affect people's choices about how to resolve given dilemmas (Robins & Mayer, 2000). The hypothesis that metaphorical frames can affect people's opinion is widely acknowledged (e.g., Charteris-Black, 2005; Mio, 1997) and the effects of metaphorical frames are studied from various perspectives, using diverse methods.

Different perspectives on metaphorical framing effects

Scholars who follow CDA systematically study the relationship between language and social structure (Fairclough, 1995). They look at real-world changes as a result of communicated (metaphorical) language (e.g., Charteris-Black, 2004; Kövecses, 2006; Musolff, 2004). When justifying inequality, several discourse structures can be used to contrast social groups, to create an "us" and "them." A type of discourse structure that can serve to transfer and sustain inequality is rhetorical language, such as hyperboles and metaphors (Charteris-Black, 2004; Van Dijk, 1993). Where hyperboles can enhance negative actions of one group and positive actions of "the others" (Van Dijk, 1993), metaphors can transfer inequality because of their ability to highlight certain aspects, while downplaying others (Charteris-Black, 2004; Van Dijk, 1993). They can activate emotional connotations and give a moral evaluation, and by doing so affect social relations and society at large (Charteris-Black, 2004).

A second group of scholars (REA) studies the effects of metaphorical framing by examining how people respond when exposed to a metaphorically framed issue (e.g., Robins & Mayer, 2000; Sopory, 2008). This means that these studies elicit participants to respond to a certain metaphor. We call this group of studies REA studies. REA studies include: (a) focus groups, that is, participants discuss an issue after they have been presented with metaphorical frames, (b) interviews, that is, participants are questioned about the inferences they draw from a certain metaphorical frame, and (c) experiments, that is, independent variables are manipulated and controlled to test for their causal effects on dependent variables. Scholars who take a REA approach are interested in how and under what conditions people are affected by metaphors. They propose that, in order to be able to make claims about the functions of metaphor in thought, and consequently about the effects of metaphorical frames on variables like beliefs about and attitudes toward issues, one cannot solely rely on linguistic evidence but needs to look at participant responses to metaphors as well (Casasanto, 2010; Gibbs & Steen, 1999). These scholars argue that a causal relationship between metaphorical frames and, for example, a change in attitude toward an issue can only be detected by testing falsifiable hypotheses, using measuring methods that go beyond the systematic analysis of language patterns, in a (semi) controlled environment.

Although both approaches (CDA, REA) aspire to explain the persuasive impact of metaphorical frames, CDA and REA scholars are critical toward each other's research paradigms and methods. First, CDA scholars criticize the ecological validity of a large part of REA studies (Charteris-Black, 2004, 2005; Van Dijk, 1993). REA research, and especially experimental research, requires maximum control of the stimulus material, which easily results in carefully crafted texts or "textoids" that generally lack social context, treat situationally unreal issues and hardly resemble natural language (Graesser et al., 1997). According to CDA scholars, these language stimuli become uninteresting or uninformative; using these texts to examine how metaphors affect people might even unveil unnatural effects (Charteris-Black, 2005; Van Dijk, 1993). CDA scholars argue that to be able to reveal the real impact of metaphors on people and society, metaphorical framing effects can best be studied within a natural context (Charteris-Black, 2004; Fairclough, 1995).

In turn, REA scholars criticize the empirical validity of CDA claims about metaphorical framing effects, because these claims fully depend on linguistic evidence (Jaspaert, Van De Velde, Brône, Feyaerts, & Geeraerts, 2011). According to REA scholars, critically looking at manifestations of metaphor in discourse does not mean one can make general claims about their impact on people and society. One metaphor can affect different individuals differently, depending on, for example, their culture, prior knowledge about the issue, and their age (Gibbs & Steen, 1999). To reveal how metaphors influence reasoning about issues, scholars need to study how metaphors are processed by individuals (Jaspaert et al., 2011; Steen, 2011). Although REA scholars generally acknowledge that a critical-discourse view provides adequate insights in how different issues can be framed metaphorically (e.g., Steen, 2011), they critique the lack of a systematic comparison of the presumed effects caused by different frames (Jaspaert et al., 2011).

Thus, scholars from both fields (CDA, REA) work with different research paradigms and prefer different methods when studying the effects of metaphorical framing. Despite their differences, both aim to answer similar questions, namely how metaphorical framing of political issues affects citizens and society at large. It is, therefore, important to empirically examine to what extent these different perspectives report converging or diverging results. In this article, we report on a systematic literature review in which we compared the reported effects of metaphorical framing of political issues from both fields of research (CDA, REA).

Furthermore, when looking at some examples of frames that were studied as metaphorical (e.g., *foot and mouth disease is a supernatural power*, Nerlich et al., 2002; *social and political adversaries are parasites*, Musolff, 2014), it seems that some of the frames are not "just" metaphorical, but comprise hyperbole as well. Hyperbole can be defined as "an expression that is more extreme than justified given its ontological referent" (Burgers, Brugman, Renardel De Lavalette, & Steen, 2016). In the frame *social and political adversaries are parasites*, for example, a dehumanizing metaphor

(*immigrants are animals*) is hyperbolically extended to *immigrants are parasites*. By doing so, the abstract concept of immigration is not only made more concrete by using a metaphor, it is also exaggerated with a hyperbole. When using such a complex figurative frame, two rhetorical operations occur at the same time and challenging the frame becomes more difficult. This can heighten the impact of the frame (Burgers, Konijn & Steen, 2016). Although the theory of figurative framing hypothesizes that complex figurative can establish persuasive effects that reach beyond the impact of frames containing one type of figurative language (Burgers Konijn & Steen, 2016), a systematic investigation is lacking from the literature. Furthermore, scholars who originally studied these frames purely focused on their metaphorical nature. Therefore, to further examine this notion of complex figurative framing, we do not limit our analysis to metaphorical frames, but also examine frames that comprise metaphor and hyperbole.

Research questions

We compared reported effects of metaphorical framing from two research perspectives: CDA and REA. In order to do so, we first examined the characteristics of the studied metaphorical frames. We were interested in differences and similarities between the metaphors that were used to frame, the issues that were framed, and the possibility of frames comprising both metaphor and hyperbole. Therefore, we proposed the following research question:

RQ1: What are the differences and similarities between the metaphorical frames, studied by scholars who (a) took a critical-discourse approach and (b) scholars who took a response-elicitation approach?

In order to compare reported effects of metaphorical framing in different fields of research (CDA, REA), we proposed our main research question:

RQ2: What are the differences and similarities between the reported effects of metaphorical framing studied by (a) scholars who took a critical-discourse approach and (b) scholars who took a response-elicitation approach?

Method

Search procedure

We conducted a systematic literature review to analyze the effects of metaphorical framing of political issues reported by scholars from different research fields. A systematic literature review is a research method used to identify, evaluate, and interpret all available research relevant to a particular research question (Kitchenham, 2004). It is conducted by strict rules and based on a predefined search strategy that aims to include as much of the relevant literature as possible and allows readers to evaluate the completeness and repeatability of this process. Explicit inclusion and exclusion criteria to evaluate potentially interesting studies are required and documented (Kitchenham, 2004; Petticrew & Roberts, 2008).

We systematically searched for studies from the last two decades that report on effects of metaphorical and/or hyperbolic language used to frame a political issue. First, we selected academic journals that are on the ISI (International Scientific Indexing) List. We used the Web of Science—Journal Citation Reports to search for journals from relevant subject categories.¹ Second, we

¹Subject categories: "Communication," "Linguistics," "Political Science," "Social psychology," "Social issues," "Social Sciences interdisciplinary," "Sociology," "Multidisciplinary science," and "Psychology (Applied, Experimental, Multidisciplinary, Social)."

searched for relevant journals using the following search terms: “Discourse,” “Pragmatic*,” “metaphor,” “language,” and “humor.” In total, we found 989 potentially relevant ISI-listed journals. For each journal, we decided if the journal was relevant by reading its journal summary. Reasons for journal exclusion were for example: a focus on a certain group of people, other than the general public (e.g., *Child Language Teaching & Therapy*) or a focus on a genre other than political discourse (e.g., *Journal of Advertising Research*). This resulted in a list of 311 ISI-listed journals. Since we were aware of potentially relevant journal articles published in journals that are not ISI-listed, we conducted an additional search for relevant, non-ISI-listed journals. Based on this search, we added 83 journals to the list of ISI-listed journals, making a total of 394 journals of interest.

Third, we used search strings, comprised of search terms related to our independent variables (i.e., metaphor and hyperbole), to search for relevant publications based on topic, abstract, titles, and keywords, to search within these 394 journals for relevant articles. We restricted our search to publications from the last two decades (1995–2014) written in English, Dutch, Spanish, and German (languages the authors are familiar with). Our search resulted in a total of 6,515 publications, of which 3,989 were published in ISI-listed journals and were derived via Web of Science, and 2,526 were retrieved via search engines of the individual publishers and journals. Through a backward search (i.e., checking for references that were cited in known relevant publications), 18 additional references were added to the list of references, which made a total of 6,533 potentially relevant publications.

Selection procedure

We started with removing duplicates. Next, based on the abstract, and, when in doubt, the full text paper, we excluded publications that did not match our inclusion criteria (see [Figure 1](#) for the flowchart of the complete inclusion procedure). We excluded publications that were not written in English, Dutch, Spanish, or German, publications that did not report on primary research (e.g., reviews and editorial comments), publications that did not study verbal metaphorical or hyperbolic framing, and publications that did not treat a political issue. A political issue was operationalized as a social issue that is on the public agenda and concerns a considerable number of individuals within a society. Based on this criterion, we excluded publications that studied metaphorically framed issues that were not political in nature (e.g., Keefer, Landau, Sullivan, & Rothschild, 2014, who study metaphorical framing in the context of health communication). Finally, we excluded all publications that did not report on at least one case study (e.g., purely theoretical publications). A total of 193 potentially relevant publications (230 studies) were included.

A second coder independently coded a random sample of 300 publications to determine inter-coder reliability of the selection procedure. Intercoder reliability assessment yielded a “substantial” agreement score (Cohen’s $\kappa = .69$; Landis & Koch, 1977). Next, we used a two-step procedure to

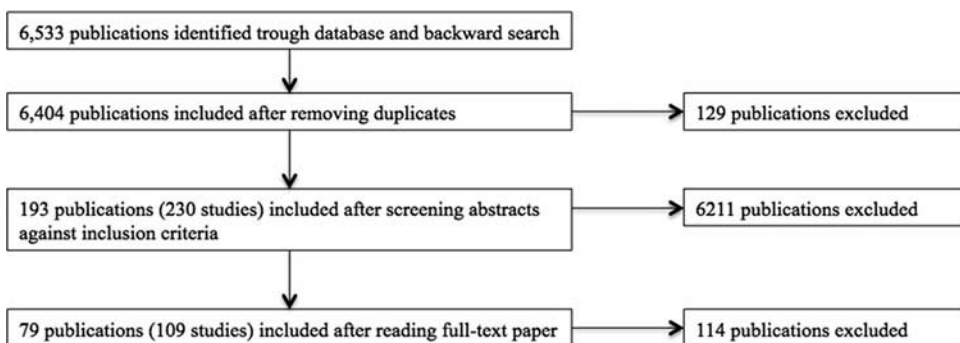


Figure 1. Flow-chart of the systematic literature inclusion procedure.

exclude studies that did not report on metaphorical framing effects. First, we checked if the authors reported on any effect of any predictor variable. Second, we coded whether this predictor variable was a metaphorical/hyperbolic frame. Only publications that met these two criteria were included. For the first coding step, intercoder reliability was “substantial” (Cohen’s $\kappa = .62$; Landis & Koch, 1977). For the second step, intercoder reliability was “almost perfect” (Cohen’s $\kappa = .90$; Landis & Koch, 1977). Finally, 79 publications, comprising 109 relevant studies, were included in the systematic review.

Coding procedure

A coding scheme² was used to code all 109 relevant studies. Each frame was coded separately. Following Entman (1993, p. 52), we coded metaphors as frames when—according to the original authors of the journal articles—these metaphors implicitly or explicitly included a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation of an issue. After coding the frames, we checked whether the authors reported these frames as being figurative or not. Then, we determined if the frames were metaphorical and or hyperbolic by applying the Metaphor Identification Procedure—Vrije Universiteit (MIPVU; see Steen et al., 2010 for coding instructions) and the Hyperbole Identification Procedure (HIP; Burgers, Brugman, Renardel de Lavalette & Steen, 2016) to these frames.³ MIPVU (Steen et al., 2010) and HIP (Burgers, Brugman, Renardel de Lavalette & Steen, 2016) allowed us to make a reliable comparison between studies. Consequently we coded the issue that was framed, thereby citing the author as precise as possible. These coding steps were repeated for each frame.⁴

Next, we coded the research method that was used. Of the 109 studies, 45 studies (41.28%) took a CDA approach and 64 studies (58.72 %) took an REA approach. From the 64 REA studies, 57 studies were experiments, 3 studies used focus groups or interviews, and 4 studies used surveys. Then, we analyzed the variables that were reported as dependent variables (DVs) by the author. First, we coded the number of reported DVs, second we coded the names of these DVs, and finally we coded the effects of the metaphorical frames. To make a fair comparison between reported effects from two different research methods (CDA, REA), we solely coded direct effects of metaphorical framing, thereby excluding mediated and moderated effects from our analysis. To determine the intercoder reliability, a second coder independently coded a random sample (27.5%) of all studies for each variable. Intercoder agreement varied from “substantial” (Cohen’s $\kappa = .65$), to “almost perfect” (Cohen’s $\kappa = .86$; Landis & Koch, 1977; see Table 1 for an overview).

Results

Table 2, which can be retrieved from the Open Science Framework (<https://osf.io/6n5gg>), provides an overview of the 109 reviewed studies and lists which approach was taken, the studied frames and issues, the DVs and how they were affected (or not) by the frames. From the 67 CDA frames, 56 frames were metaphorical and 11 frames comprised both metaphor and hyperbole. From the 139 figurative REA frames, 136 were metaphorical, 2 comprised both metaphor and hyperbole, and 1 was hyperbolic.

²The coding scheme can be retrieved from the Open Science Framework (<https://osf.io/6n5gg>).

³A figurative frame can account for multiple linguistic expressions that can be traced back to this frame. For this research, we applied MIPVU and HIP at the frame level, since we were interested in the characteristics of the conceptual frames rather than the linguistic expressions that are derived from these frames.

⁴Additionally, we coded to what political domain the issue belongs to. For four out of nine domains, the agreement between the coders was unsatisfying. Therefore, the variable “issue domain” was excluded from our analysis.

Table 1. Cohen's kappa and agreement percentages for the coded variables.

Variable	<i>n</i>	Pearson's <i>r</i>	
Coded at study level (30 studies)			
Number of DVs	30	.83 ^a (<i>p</i> < .01)	
Variable	<i>n</i>	Cohen's κ	% Agreement
Coded at study level (30 studies)			
Research method	30	.86	93.3
Coded at frame level (30 studies, 61 frames)			
Frame (name)	61	.77	88.5
Ontological referent	61	.86	93.4
Figurative frame acc. to author	61	.76	91.8
Metaphorical frame acc. to author	61	.72	90.2
Hyperbolic frame acc. to author	61	.66	98.4
Metaphorical frame acc. to MIPVU	61	.72	91.8
Hyperbolic frame acc. to HIP	61	.65	96.7 ^b
Coded at DV level (30 studies, 47 DVs)			
DV (acc. to author)	47	.70	85.1
Coded at effect level (40 DVs)			
Effect (acc. to author)	40	.75	87.5

Note. ^aBecause number of DVs is a ratio variable, we cannot calculate Cohens κ , therefore the correlation coefficient (Pearson's *r*) is given. ^bCoders agreed on all cases, except for one. Coder 1 coded all 61 frames in the relative subsample as nonhyperbolic. Coder 2 coded one frame in the relative subsample as hyperbolic and coded the other 60 frames as nonhyperbolic.

Frame characteristics

Similarities between CDA and REA

A first look at the frames shows several similarities between the metaphors that were used to frame. First, a considerable part of both CDA and REA studies focused on frames comprising warlike metaphors, that is, metaphors with a source element related to war. Several metaphors are related to "war" in general, for example: *trade is war* (Robins & Mayer, 2000, study 1; REA), *the war on terror* (Andréani, 2004; Bartolucci, 2012), and *the war on drugs* (Elwood, 1995). Other frames comprise metaphors that are related to specific actions, or actors in the war domain. For example, the frame *mergers and acquisitions are battles for territory* (Koller, 2002; CDA) compares legal procedures to the war-related activity of a battle, and *employees are soldiers* connects characteristics of people engaged in military service onto employees (Robins & Mayer, 2000, study 3; REA). Next, both approaches studied the effects of frames that contain anthropomorphisms or dehumanizing metaphors. Anthropomorphisms and dehumanizing metaphors are different types of metaphors that have the ability to start two diverging processes that both have to do with the concept of humanness. Anthropomorphisms transfer humanlike characteristics onto a nonhuman referent. For example, the frame *nations are brothers* (A'Beckett, 2012; CDA) portrayed countries as human beings, able to do things that people can do, like fight and have relationships. Dehumanizing metaphors, on the other hand, take away humanlike characteristics. For example, by framing immigrants as *animals*, these people lost their human rights and dignity (Santa Ana, 1999; CDA). Table 3 provides an overview of these similarities (and differences) between CDA and REA frames, illustrated with several examples.

Although similar metaphors were used to frame political topics, our first analysis suggests that there were differences in frame characteristics between the two approaches. We now continue to suggest that these perceived differences between the frames is due to differences in the issues that were framed within CDA and REA studies.

Differences between CDA and REA

When we explored the differences between CDA and REA frames, our analysis revealed differences in frame valence, frame fictionality, and frame extremity. As for frame valence, it seemed that, in general, CDA frames could be characterized as negatively valenced. Although part of the REA frames

Table 3. An overview of similarities and differences between CDA and REA frames, illustrated with examples.

	CDA	REA
Similarities		
Warlike metaphors	<p><i>War metaphors</i></p> <ul style="list-style-type: none"> • The war on terror (Andréani, 2004; Bartolucci, 2012) • The war on food and mouth disease (Nerlich et al., 2002) <p><i>War-related metaphors: Actions/actors</i></p> <ul style="list-style-type: none"> • Mergers and acquisitions are <i>battles for territory</i> (Koller, 2002) • Mephedrone (i.e., a drug) is a <i>homeland invasion</i> (Alexandrescu, 2014) • Nations are <i>brothers</i> (A'Beckett, 2012) • The USA is a <i>mother</i> (Hayden, 2003) 	<p><i>War metaphors</i></p> <ul style="list-style-type: none"> • Trade is <i>war</i> (Robins & Mayer, 2000) • A worker's strike is a <i>war</i> (Robins & Mayer, 2000) <p><i>War-related metaphors: Actions/actors</i></p> <ul style="list-style-type: none"> • The human immune system is an <i>army</i> (Jansen et al., 2010) • Employees are <i>soldiers</i> (Robins & Mayer, 2000) • A <i>crying</i> trashcan (Ahn et al., 2014) • Nature is a <i>person</i> (Tam, Lee, & Chao, 2013) • A novel social group of people is a group of <i>robots/animals</i> (Loughnan et al., 2009)
Anthropomorphisms	<ul style="list-style-type: none"> • Immigrants are <i>animals</i> (Santa Ana, 1999) • Immigrants are <i>objects</i> (O'Brien, 2003) 	
Dehumanizing metaphors		
Differences		
Frame valence	<p><i>Negative war frames</i></p> <ul style="list-style-type: none"> • The war on terror (Andréani, 2004; Bartolucci, 2012) • Mephedrone (i.e., a drug) is a <i>homeland invasion</i> (Alexandrescu, 2014) <p><i>"Real-life" issues</i></p> <ul style="list-style-type: none"> • Immigrants entering the United States (Santa Ana, 1999) • U.S. foreign policy regarding Iraq (Ismael & Ismael, 1999) 	<p><i>Positive war frames</i></p> <ul style="list-style-type: none"> • Employees are <i>soldiers</i> (Robins & Mayer, 2000) • The human immune system is an <i>army</i> (Jansen et al., 2010) <p><i>(Partly) fictional issues</i></p> <ul style="list-style-type: none"> • The fictional groups of Hebians and Nopoes (Loughnan et al., 2009) • Crime in the (semi-) fictitious city of Addison (Steen et al., 2014; Thibodeau & Boroditsky, 2011, 2013) <p><i>"Low intensity" issues</i></p> <ul style="list-style-type: none"> • Social issue of divorce (Robins & Mayer, 2000) • A tree planting campaign (Ahn et al., 2014) • Recruitment policy (Robins & Mayer, 2000) • Corporate governance (McGlone, Bortfeld, & Kobryniewicz, 2007) • Energy conservation (Ahn et al., 2014)
Frame fictionality		
Frame extremity	<p><i>Metaphor × hyperbole</i></p> <ul style="list-style-type: none"> • Food and mouth disease is a <i>supernatural power</i> (Nerlich & James, 2009) • Social and political adversaries are <i>parasites</i> (Musolff, 2014) <p><i>"High intensity" issues</i></p> <ul style="list-style-type: none"> • Governmental actions against terrorism (Andréani, 2004; Bartolucci, 2012) • Societal drugs issues (Alexandrescu, 2014; Elwood, 1995) 	

Note. This table presents several examples of the similarities (warlike metaphors, anthropomorphism, dehumanizing metaphors) and the differences (valence, fictionality and extremity) between the frames that were studied by CDA and REA scholars. Differences and similarities are presented in the far left column. Each bullet point provides an example of the characteristic above it (in italics: e.g., *negative war frames*).

were negative as well, some were positive. Since both CDA and REA frames comprised comparable metaphors, differences in frame valence seemed to be caused by differences in the issues that were framed, rather than the metaphors used to frame.

When we look at warlike metaphors, for example, we noticed that within CDA studies, warlike metaphors were oftentimes used to frame negative issues, such as severe drug problems (Elwood, 1995; CDA) or governmental actions against terrorism (Andréani, 2004; CDA). These warlike metaphors can transfer negative elements of war onto the issues that are framed, and can therefore evoke negative associations (Mirghani, 2011; CDA). By contrast, within several REA frames, warlike metaphors were part of frames that can be perceived as positively valenced. Take for example *the human immune system is an army* (Jansen, van Nistelrooij, Olislagers, van Sambeek, & de Stadtler, 2010; REA). This frame portrays the human immune system as *an army* that attacks invaders such as viruses. The valence of this frame seems positive, which might be due to the presentation of the issue that was framed. In this case, the agency was the immune system, which is generally perceived as a morally good agent that needs to fight to protect the human body. Positive elements from the “war” domain, like the strength, perseverance, and tactical insights that characterize an army, were transferred on to the human immune system, thereby creating a positive frame. This example shows that, although some metaphors, like war metaphors, seem to be negative by nature, frame valence is not by default determined by the metaphor that is used to frame; it is affected by issue characteristics as well.

A second difference between CDA frames and REA frames concerns the fictionality of the framed issues. All CDA studies focused on issues that have actually occurred in real life, and are known by many people. On the other hand, a considerable part of the REA studies examined the effects of frames that were somehow fictional or fabricated. Such fictional stories are not true, but can contain much information that can be applied to the real world (Appel & Richter, 2007, p. 113). Where all CDA frames treated true, nonfictional, issues, several REA issues were either completely (e.g., dehumanizing non-existing groups of people, Loughnan, Haslam, & Kashima, 2009; REA), or partly (e.g., crime in the fictional city of Addison, Thibodeau & Boroditsky, 2011, 2013; REA) fictional.⁵

A third difference between CDA frames and REA frames lies in frame extremity with CDA frames being seemingly more extreme than REA frames. Our data suggest that the extremity of a metaphorical frame can be intensified in two ways, either by combining metaphor and hyperbole (Burgers, Konijn & Steen, 2016), or by framing an intense issue. Frames that comprise both metaphor and hyperbole seem more typical for CDA studies. Take for example the hyperbolized metaphorical frame *political and social adversaries are parasites* (Musolf, 2014; CDA). This frame not merely robs people of their human characteristics: it portrayed these people as one of the lowest classes of animals, which live in or on another type of animal and feed on it. Thus, portraying human beings as parasites created a frame that appears to be not only negative, but very extreme as well.

Another way to create an extreme metaphorical frame is to frame an issue that is intense or impactful by itself. CDA studies tend to focus on issues that are more intense than REA studies. For example, the political situation in the United States after 9/11 was framed as *the war on terror* (CDA: Andréani, 2004; Bartolucci, 2012). For many people, the terrorist attacks on 9/11 were very intense and impactful, and therefore a frame that refers to these attacks seems almost inevitably extreme. REA studies, on the other hand, tend to focus on low intensity issues, for example job applications (Robins & Mayer, 2000; REA) and tree planting campaigns (Ahn, Kim, & Aggarwal, 2014; REA).

Conclusion

We explored the differences and similarities between frames studied by scholars who took a CDA approach and scholars who took an REA approach. We noticed that both approaches studied similar

⁵These studies are difficult to classify in terms of fictionality. According to Thibodeau and Boroditsky (2011, 2013), Addison is a fictional city. A search on Google Maps, however, revealed that several towns in the United States are called Addison, in states like Illinois, Michigan, and Texas.

metaphors. However, frame characteristics differed on several aspects: CDA frames were typically, negative, nonfictional and extreme, compared to REA frames. These observations suggest that differences between CDA frames and REA frames are caused by differences between the issues that are framed rather than the metaphors that are used to frame. Hyperbolized metaphors are the exception to this tentative rule; when a combination of metaphor and hyperbole is used to frame, this can increase frame extremity.

Framing effects

Similarities between CDA and REA

To answer RQ2, we explored differences and similarities between effects of metaphorical frames reported by scholars who took a CDA approach and scholars who took an REA approach. We reviewed the dependent variables that were affected and connected reported effects to frame characteristics in order to explore which frames were effective and which were not. We noticed little similarities between the effects reported by the two approaches. In some cases, different metaphorical CDA frames and REA frames affected similar dependent variables. For example, both approaches reported effects of metaphorical frames on people's attitude toward a proposed policy (e.g., REA: Hartman, 2012, study 2, p. 290; CDA: Kuusisto, 2002, p. 63). Nevertheless, differences in reported effects were predominant.

Differences between CDA and REA

Our analysis revealed several differences between effects reported by CDA and REA scholars. We observed a difference in effect presence, effect directionality, and perceived effect strength, which we will now explain in more detail. Table 4 presents an overview of the differences between effects reported by CDA and REA, illustrated with several examples.

First, where each CDA frame directly affected at least one dependent variable, not all REA frames were effective. From a total of 64 REA studies, 15 studies tested for, but did not find, any direct effect of metaphorical framing. We provide a possible explanation for this difference in the discussion section of this article.

Second, we observed a difference in directionality of reported effects. Generally, effects reported by CDA scholars were in line with the metaphorical frames, which was not always true for effects reported by REA scholars. As explained earlier, CDA frames were generally negatively valenced. When reported effects were in line with such a negative frame, effects could often be perceived as socially undesirable. *The war on terror*, for example, created a pervasive feeling of fear and a limitation of freedom (Bartolucci, 2012, p. 577; CDA). REA scholars reported on socially undesirable effects in line with negative frames as well. For example, when a worker's strike was framed as a *war*, this led to negative beliefs about the strike (e.g., it is inevitable that violence and property damage will occur, Robins & Mayer, 2000, study 6, p. 82). Contrary to CDA scholars, REA scholars reported on effects in line with positive frames as well. When the worker's strike was positively framed as a *dance*, participants had more positive beliefs about the strike (e.g., both parties will be satisfied when it is over), than when the strike was compared to a *war* (Robins & Mayer, 2000, study 6, p. 82). More examples of positive frames with socially desirable effects are presented in Table 4.

Not all REA studies reported metaphorical framing effects in line with the valence of frame. Landau, Sullivan, and Greenberg (2009; REA) provide an example of a negative metaphorical frame with socially desirable effects. When binge drinking was metaphorically framed as *self-destructive*, participant's attraction for the person that was binge drinking dropped, compared to a non-metaphorical frame (Study 2, p. 1425).

Moreover, in several REA studies, the same metaphorical frame had divergent effects. Hartman (2012; REA) examined the effects of metaphorically framing net neutrality (i.e., the principle that governments and service providers should not interfere with a user's Internet access) on policy attitudes, by conducting two experiments. Study 1 revealed no direct effects of the metaphorical



Table 4. An overview of the differences between effects reported by scholars who (a) took a CDA approach and (b) took an REA approach, illustrated with examples.

Differences	CDA	REA
Effect presence	<p>Studies reporting direct effects</p> <ul style="list-style-type: none"> • 45/45 (100%) 	<p>Studies reporting direct effects</p> <ul style="list-style-type: none"> • 49/64 (76.56%)
Effect directionality	<p><i>Socially undesirable effects in line with negative frame</i></p> <ul style="list-style-type: none"> • <i>The war on terror</i> brought a pervasive feeling of fear (Bartolucci, 2012, p. 577)^a • <i>The war on H1N1</i> heightened public fear (Morant Marco & Martín López, 2011, p. 92)^a • <i>Immigration is a natural disaster</i> discouraged empathy for immigrants (Charteris-Black, 2006, p. 569)^a • <i>Communism is a disease</i> intensified the nations sense of insecurity (Ivie, 1999, p. 587)^a • <i>Immigrants are animals</i> sustained a racist world-view (Santa Ana, 1999, p. 217)^a 	<p><i>Socially undesirable effects in line with negative frame</i></p> <ul style="list-style-type: none"> • <i>A worker's strike is a war</i> led to negative beliefs about strikes (Robins & Mayer, 2000, study 6, pp. 82, 83)^c • <i>Radon gas is a threatening sentient agent</i>, increased perceived severity (Dragojevic, Bell, & McGlone, 2014, p. 95)^b <p><i>Socially desirable effects in line with positive frame</i></p> <ul style="list-style-type: none"> • <i>Anthropomorphisms</i> made people willing to donate money (Ahn et al., 2014, study 3, p. 227)^b • <i>Anthropomorphisms</i> increased people's connectedness to nature (Tam et al., 2013, study 2, p. 517, study 3, p. 518)^b
Effect strength	<p><i>"Strong"/"impactful" effects</i></p> <ul style="list-style-type: none"> • <i>The anchor baby</i> frame reinforced a negative stereotype of immigrants (Lederer, 2013, p. 265)^a • <i>The war on terror</i> frame led to a limitation of freedom (Bartolucci, 2012, p. 577)^a • <i>The social and political adversaries are parasites</i> frame had devastating historical consequences (Musolff, 2014; p. 229)^a 	<p><i>"Small"/"less impactful" effects</i></p> <ul style="list-style-type: none"> • Statistically small effect (partial $\eta^2 = .00$) of metaphorical frames on behavior-dimensional affect coherence (Sopory, 2008, p. 175)^c • Genes are <i>blueprints</i> led to more threat beliefs than genes are <i>instructions</i> (Parrott & Smith, 2014, p. 142)^c • <i>Anthropomorphizing</i> nature increased people's connectedness to nature (Tam et al., 2013, study 3, p. 518)^b

Note. This table presents examples that illustrate observed differences between metaphorical framing effects reported by CDA and REA studies (effect presence, effect directionality and effect strength). Each bullet point provides an example of the characteristic above it (in italics: e.g., *"strong"/"impactful" effects*).

^aMetaphorical framing effects over time, ^bMetaphorical framing effects compared to a nonfigurative frame, ^cMetaphorical framing effects compared to another figurative frame

frame (charging people for fast data transfer is *placing tollbooths on the Internet*; Hartman, 2012, study 1, p. 287; REA). Interestingly, in a follow-up study (with an extra non-metaphorical control condition) the same metaphorical frame steered people's attitude in line with the promoted policy measure (Hartman, 2012, study 2, p. 290; REA).

Contradicting results were also reported across studies. Consider studies conducted by two groups of scholars who examined the effect of two metaphorical frames, namely *crime is beast* and *crime is a virus*, on policy preferences (REA: Steen, Reijniere, & Burgers, 2014; Thibodeau & Boroditsky, 2011, 2013). First, Thibodeau and Boroditsky (2011, 2013) reported that the *crime is a beast* frame made people prefer enforcement strategies to reform strategies. People exposed to *crime is a virus*, on the other hand, more often preferred reform strategies over enforcement strategies (Thibodeau & Boroditsky, 2011, study 1, 2, 4, pp. 4–7, 2013, study 1–5, pp. 4, 5; REA). Consequently, Steen et al. (2014), conducted a series of follow-up experiments, in which they compared the effects of the same metaphorical frames to a non-metaphorical control frame. They found no framing effects (Steen et al., 2014, pp. 14, 15; REA). These diverging results indicate that, even when a metaphorical frame was reported as effective before, this does not guarantee that this frame will be effective in the future.

A third difference between the reported effects (CDA, REA) was found in perceived effect strength. Although no effect sizes were measured, CDA studies tend to report effects that appear to be strong and impactful. For example, the frame “*anchor baby*,” which implies that illegal immigrants intentionally choose to have a baby because it increases their chance to obtain a residence permit, reinforced a negative stereotype of immigrants (Lederer, 2013, p. 265; CDA). These effects were not limited to an individual's opinion, but also steered public opinion in line with the promoted negative image. When the impact of metaphorical frames reached beyond affected beliefs and opinion, for example when they led to a limitation of freedom (Bartolucci, 2012, p. 577; CDA) or when they had devastating historical consequences (Musolff, 2014, p. 229; CDA), it seems legitimate to characterize reported effects like these as “intense” and “impactful.”

REA studies, on the contrary, tend to report on quantitatively small and/or less impactful effects of metaphorical framing. REA studies generally did not report on effects that go beyond affected beliefs about and attitudes toward political issues. Metaphorical frames affected for example, beliefs about genes (Parrott & Smith, 2014, p. 142; REA) and attitudes toward prenuptial agreements (Robins & Mayer, 2000, study 4, pp. 73, 74; REA). Since no CDA study and only a few REA studies reported effect sizes, we could not make a quantitative comparison between the two approaches. Nevertheless, after analyzing the reported effects, we suggest that effects reported by CDA scholars, compared to REA scholars, were stronger and more impactful.

Conclusion

We explored the differences and similarities between the effects reported by scholars who took a CDA approach and scholars who took a REA approach. We noticed differences in effect presence, with all CDA frames being effective, contrary to a part of the REA frames. Furthermore, we saw that CDA effects were always in line with the frame, contrary to REA effects. Finally, we noticed that CDA studies typically reported on effects that were more intense and impactful than REA studies. It is possible that this difference can be (partly) explained by looking at the differences in frame characteristics that we pointed out (i.e., valence, fictionality and extremity).

Discussion

The results of this systematic literature review show that different research perspectives (CDA, REA) reported diverging effects of metaphorical framing. Differences in frame characteristics might be (partially) responsible for the differences in effect presence, effect direction and effect strength that we observed. At the same time, these differences might be (partially) caused by the different research paradigms and methods CDA and REA work with.

First, a difference in effect presence could be explained by a difference between CDA and REA, in that scholars who take a REA approach focus on individuals' responses to metaphorically framed issues (Gibbs & Steen, 1999), whereas CDA scholars study real-world changes as a result of metaphorical framing. As the tenets of CDA assert, discourse is socially constitutive as well as socially shaped (Chilton, 2005). Thus, when studying metaphorical framing effects CDA scholars connect a real-world occurrence to metaphorical discourse, which implies that effect presence is inherent. This in contrast to REA scholars who expose individuals to a metaphorical frame and determine (immediately) afterward if the frame affected their responses. Generally, REA scholars compare a metaphorical frame to another metaphorical frame and/or a non-metaphorical control frame to test whether metaphorical are persuasive. This implies that effect presence is not inherent. Although REA studies are sometimes critiqued for using such highly controlled stimuli and for testing under such unnatural circumstances that finding effects seems inevitable (e.g., Van Dijk, 1993; CDA), our results show that effects are inevitable for CDA studies, rather than for REA studies.

Second, where CDA scholars are interested in the role of discourse in the (re)production of dominance and social inequality (Van Dijk, 1993), effects that are reported by scholars with such a focus might be impactful and strong by default. Moreover, an interest in the role of discourse on social inequality and power dominance suggests a tendency to look for effects of metaphorical frames used by power elites that are in line with the frame. Therefore, it seems reasonable to attribute at least a part of the differences between reported effects, to differences between the two approaches (CDA, REA). Future research can further unravel what factors attribute to the differences in reported effects, and if metaphorical frames that resemble CDA frames show an effect when used as stimuli in REA studies.

Other suggestions for future research on metaphorical framing effects arise from this review. First, our data suggests that combining metaphor and hyperbole can create extreme and intense frames. As Burgers, Konijn & Steen, (2016) suggest, such complex figurative frames can have an impact that goes beyond the effects of frames that comprise only metaphor. Some reported effects of frames that comprise metaphor and hyperbole could indeed be qualified as impactful (e.g., the "devastating historical consequences of the *social and political adversaries are parasites* frame"; Musolff, 2014, p. 229; CDA). However, our database contains too few examples to discern a pattern. Future research should thus further explore the effects of these potentially very impactful frames.

Most studies (CDA and REA) focused on direct effects of metaphorical frames on political persuasion. Therefore, to be able to properly compare the reported metaphorical framing effects between CDA and REA, we limited our analysis to direct effects of metaphorical frames. We did, however, find some REA studies that looked at indirect metaphorical framing effects. These included studies that explored if persuasive effects were stronger for certain groups of people (e.g., politically unsophisticated citizens; Hartman, 2012, REA) or occurred only under certain circumstances (e.g., for spatially distant issues; Jia & Smith, 2013, REA). Nevertheless, the majority of studies (CDA and REA) have focused on the direct influence of metaphorical frames on persuasion. This is remarkable since research from communication science shows that media effects generally indirectly affect citizens; effects are enhanced or reduced by individual differences and social-context variables (for overviews, see Konijn & Hoorn, 2005; Valkenburg & Peter, 2013). Therefore, we argue that future research on metaphorical framing effects should focus on indirect effects as well as direct effects. Such a focus on indirect effects could reveal more detailed information about when, how and under which boundary conditions metaphors persuade.

Although CDA and REA criticize each other in terms of the reliability and validity of their results (e.g., REA: Jaspaert et al., 2011; CDA; Kövecses, 2006), both acknowledge that adopting several ideas from the other approach could improve research on metaphorical framing effects. Several scholars who took a REA approach affirm the critique of CDA on their stimuli and promote the use of more "real" and natural language stimuli (e.g., Krennmayr, Bowdle, Mulder, & Steen, 2014; REA). On the other hand, several CDA scholars argue that it is necessary to introduce a "cognitive dimension" to

the research field (CDA; Chilton, 2005; Van Dijk, 1998), which is a tenet of REA research. These CDA scholars claim that, since language is produced and interpreted in the brain, and the construction of knowledge about social issues thus takes place in the minds of people, CDA should not ignore “the individual” when studying metaphorical framing effects.

We agree that combining the strengths of both approaches could improve future research on metaphorical framing effects. Therefore, we propose several ways in which this can be done. First, as mentioned above, REA scholars could focus on studying the impact of metaphorical frames that resemble natural language, and thus resemble CDA frames, to enhance the ecological validity of their research. Second, the exact time frame under which metaphorical framing effects last often remains unspecified. In CDA studies on metaphorical framing, the timeframe under which effects occur and persistence of effects are generally not specifically mentioned. In REA studies on metaphorical framing, the timeframe and persistence of effects remain unaddressed. However, in studies focusing on non-metaphorical frames only, communication scholars working from an REA perspective have demonstrated that single exposure to a non-metaphorical frame can affect policy support. Although these framing effects diminish over time, they could still endure for two (Lecheler & De Vreese, 2011; REA) or even three weeks (Tewksbury, Jones, Peske, Raymond, & Vig, 2000; REA). Conducting an REA study to examine if this also holds true for metaphorical frames could complement CDA research into metaphor, by further specifying the persistence of metaphorical framing effects. Third, current CDA studies typically focus on the impact of frames that are repeatedly and successfully used in public discourse. However, many frames in public discourse are only used on a small number of occasions, and stop being used if they fail to elicit the required response. Future CDA studies could thus also focus on comparing these successful and unsuccessful metaphorical frames in discourse, to provide more insights into the question why some metaphorical frames are persuasive and some are not.

In conclusion, this systematic literature review has shown that scholars who take a CDA approach report on different effects than scholars that take an REA approach. We suggested that these differences could be attributed to differences in characteristics of the frames that are studied and/or differences between the research approaches themselves. Despite the diversity in research methods, political issues, metaphorical frames and effects that we reviewed, we were able to identify several interesting patterns within the metaphorical frames that can explain for the differences in effects reported by scholars who choose one of the two approaches. The results of this review bring forth several interesting questions, for example about the effectiveness of frames that comprise both metaphor and hyperbole. Furthermore, this review hopefully creates awareness about the strengths and weaknesses of different approaches that are chosen to study the effects of metaphorical framing and serves as a starting point for valuable future research.

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