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COGNITIVE WARFARE AND METAPHORS: FRAMING CONFLICT IN THE MIND

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Metaphors are not merely linguistic flourishes; they shape cognition, frame conflicts, and can influence perception at scale. Within the emerging arena of cognitive warfare – where the human mind is the primary battlefield – metaphors are "deployed" strategically to reframe reality, distort perception, and manipulate social consensus. The present narrative review explores the literature on metaphor theory and cognitive linguistics to understand how metaphors are weaponized in cognitive warfare. Furthermore, the implications for defense policy, the development of counter-metaphor strategies, as well as the ethical and legal considerations involved in this form of non-kinetic conflict are also discussed.

Keywords: *metaphor in cognitive warfare; communication as a weapon; conflict framing; cognitive linguistics; conceptual system; source domain; target domain.*

Introduction

The 21st-century battlespace has evolved beyond physical territory and kinetic engagements to include the minds and perceptions of individuals and societies. Within this context, cognitive warfare (CW), as a domain of conflict aimed at influencing perceptions, decision-making, and societal cohesion, has thus gained prominence, especially in modern hybrid conflicts. Rather than rely on kinetic force

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alone, cognitive warfare mainly targets thought and rationality. Language plays a pivotal role in this respect as both medium and a weapon of influence.

Considering the above-mentioned aspects, the present paper, which is a narrative review, is intended to explore the relationship between language, mind, and experience, offering a linguistic-cognitive perspective on cognitive warfare, focusing on metaphors and their role, if any, in this field. Thus, in the IMRaD format (University of Minnesota, 2024), (Aarhus University, 2025), we intend, by examining the scientific bases of metaphors, to find answers to the following main *research questions*:

• do metaphors function only as linguistic tools, or are they affecting the way people think/perceive, how they do it, and ultimately, how they would act, based on particular thoughts/perceptions?

• do metaphors play a role in the dynamics of cognitive warfare?

• what are the implications of the acknowledgement of metaphor role in cognitive warfare for defense policy and "counter-metaphor" strategies development?

• what are the main ethical and legal challenges related to this form this form of non-kinetic conflict?

In this context, we consider it important to provide several definitions of the two terms in the title, namely *cognitive warfare* and *metaphors*, mentioning that definitions are not yet standardized and that mainly NATO documents have been retained as relevant reference points for the CW concept.

Thus, according to NATO Allied Command Transformation, CW includes "the activities conducted in synchronization with other instruments of power, to affect attitudes and behaviors by influencing, protecting, and/or disrupting individual and group cognitions to gain an advantage. These activities vary greatly, and may encompass supporting or conflicting cultural or personalized components – social psychology, Game Theory, and ethics are all contributing factors" (NATO ACT 2023). Some other traits are mentioned as well, like the fact that it "focuses on attacking and degrading rationality, which can lead to exploitation of vulnerabilities and systemic weakening" as well as that "outside the battlefield, influence can also affect law, rule-of-order, and civil constructs" (NATO ACT n.d.), thereby underlining its potentiality to exploit non-combatant domains.

Moreover, the NATO ACT exploratory concept mentions vectors, enablers, and capabilities relevant to CW, as follows:

• *traditional* – broadcast and print mass media, as well as corporate, state and political entities;

• *existing technology* – social media platforms, big data, smart devices, gaming environments, and encrypted communication platforms, avatars, and virtual profiles;

• *emerging* – cutting-edge technologies encompassing synthetic media, AI-driven media, the immersive realm of Metaverse, and the concerning emergence of neuroweapons (NATO ACT 2023 in Deppe, C., Schaal, G.S., 2024).

In addition, the exploratory concept provides a list and description of the intended effects of cognitive warfare, mentioning impeding decision-making and disrupting the OODA (Observe, Orient, Decide, Act) loop, dividing and polarizing societies, weaponizing identity and, weaponizing narratives, impacting the will to fight (NATO ACT 2023 in Deppe, C., Schaal, G.S., 2024). Particularly important is the expansion of the concept of identity to encompass individuals' connections with others, namely national, cultural, and societal affiliations. In this regard, narratives can be related to historical memory and collective heritage, being employed, in this particular case, to alter the way individuals, communities, and nations perceive themselves, in order to align these perceptions to strategic objectives. In the same vein, the impact on the will to fight, in the context of cognitive warfare, highlights the fact that it "requires seamless synchronization and coordination to manipulate human cognition" (NATO ACT 2023 in Deppe, C., Schaal, G.S., 2024).

As for definitions, mention should be made that because of the young age of the concept, on the one hand, and of the complexity given by its interdisciplinarity, to which cutting-edge technologies are added, on the other hand, the concept has not been unitarily defined yet. However, regardless of the definition attempt, there are some common characteristics related to the alteration of cognition and the employment of specific technologies to achieve it. In this context, the concept of "cognitics" has also been advanced in the field of warfare, mainly referring to the relationship between the exploitation of rationality errors, the motivated influence, and cognitive disability (Claverie et al 2022). Thus, the main difference between the domains of psychological operations (PSYOPS) and CW, in terms of actual operations and other non-kinetic actions, have been highlighted as follows: the PSYOPS domain is related to "actions on beliefs, distorted perceptions, cultural illusion, anxieties and fears, personality weaknesses or strengths, repression, whereas the CW domain is related to action on cognition itself, through mechanisms such as sensory or perceptive overflow, attention saturation, tunneling of attention, judgement errors of judgement, and cognitive biases" (Claverie *et al*. 2022, 2-4).

As for *metaphors*, they are mainly known as "figures of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy" (Merriam-Webster online dictionary). Thus, metaphors function as comparisons between objects that are otherwise unrelated, as elements of different paradigms. Within metaphors, the qualities of one thing are figuratively transmuted to another. However, metaphors are not literary or linguistic devices. Given the interdependence between language and thought has been thoroughly documented, metaphors also play an important role in shaping cognition. In this context, "metaphor induces the hearer (or reader) to view a thing, state of affairs or whatever, as being like something else, by applying to the former linguistic expressions which are more normally employed in reference to the latter"

(Cruse 1986, 41). A metaphor is interpreted as such because there exists "an incongruity or inappropriateness" between the literal meaning and implied one, thus contributing to generating a certain perception (Cruse 1986, 42.).

1. Methods

To achieve the established aim of this paper, namely to explore the role of metaphors in cognitive warfare by examining the scientific bases of metaphors as not only linguistic and cognitive tools, the applications in cognitive warfare, as well as the implications for defense, we have developed a research protocol to synthesize findings from interdisciplinary fields. Thus, we have studied and coded information from documents (such as peer-reviewed journal articles indexed in scientific databases, defense concepts/strategy repositories, as well as other relevant literature published between 1970 and 2024), having in view the following domains: *cognitive linguistics* – with emphasis on metaphor theory; *cognitive studies* – including framing, priming, mapping, and persuasion; *military and strategic studies* – mainly from NATO; *communication studies* – particularly discourse analysis in political and military contexts. Moreover, we have also utilized ChatGPT to interrogate and clarify certain encountered concepts. Mention should be made, in this context, that, more often than not, upon verification, we identified some elements of incongruity between the "quoted" definitions or explanations and the indicated source. Following coding information, we have applied further selection criteria to streamline the synthesis, to provide examples, and to make it readable to not only experts, but also to the general public interested in the topic. Last but not least, we have focused on identifying certain suggested or documented response measures pertaining to defense policy or counter-metaphor strategies, as well as on discussing some ethical and legal considerations related to this form of non-kinetic conflict and the tools employed.

Taking into account the research questions, the paper is not mainly aimed at highlighting and addressing the gaps in knowledge, but at streamlining the information in the literature and raising the level of awareness in relation to the topic, so that resilience could be enhanced, especially under the circumstances of increasingly creative hybridity in the realm of warfare.

There are, of course, limitations to the research pertaining to the literature review, on condition of open-source documents, mainly available online, provided examples and response suggestions, which are assumed, considering the relative novelty of the topic, the access to documents, as well as the editorial standards related to the paper length. However, we have paid due attention to the presentation of the content to ensure clarity, accuracy, and consistency, while avoiding bias and promoting fairness and transparency.

2. Results

In what follows, we shall provide the outcomes of our research at both theoretical and practical levels, showing that metaphorical language plays a pivotal role in cognitive warfare.

2.1. The Cognitive Function of Metaphors

Cognitive studies investigate how people use concepts or conceptual categories in order to understand and interact with the world they live in. In this context, metaphors allow individuals to understand complex or novel situations by mapping them onto familiar schemata. "Schemata are truly the building blocks of cognition. They are fundamental elements upon which all information processing depends. Schemata are employed in the process of interpreting sensory data (both linguistic and nonlinguistic), in retrieving information from memory, in organizing actions, in determining goals and subgoals, in allocating resources, and, generally, in guiding the flow of processing in the system" (Rumelhart 1980, 33). Therefore, as "building blocks of cognition", schemata simplify reality, set expectations, and organize memory. In this context, we have chosen to briefly present two theoretical frameworks we consider relevant to the topic, namely *Framing Theory (FT)* and *Conceptual Metaphor Theory (CMT)*.

Framing Theory, introduced by Goffman (1974), is related to the fact that "Given their understanding of what it is that is going on, individuals fit their actions to this understanding and ordinarily find that the ongoing world supports this fitting. These organizational premises – sustained both in the mind and in activity – I call the frame of activity" (Goffman 1974, 247). Thus, while schemata represent types of activity, frames denote the subjects or referents within an activity. "Frames can represent types of person or other animate beings, … or inanimate objects, …or processes, …or abstract concepts" (Fairclough 1999, 159). Therefore, people engage frames to ascribe meaning to their experience. According to Entman, "the concept of framing consistently offers a way to describe the power of a communicating text. Analysis of frames illuminates the precise way in which influence over a human consciousness is exerted by the transfer (or communication) of information from one location – such as a speech, utterance, news report, or novel – to that consciousness (…) Framing essentially involves selection and salience" (Entman, 1993, 51-52). As for the framing, techniques and tools, metaphors have been identified as key to them (Fairhurst & Sarr, 1996). In fact, a conceptual idea can be framed by comparing it to something else, a process which also entails the mentioned selection and salience with regard to certain aspects of reality. By framing, some of them can be highlighted, while others can be downplayed.

Conceptual Metaphor Theory (CMT), developed mainly by George Lakoff and Mark Johnson (1980), revolves around the idea of *mapping*, entailing a *source domain* and a *target domain*, with conceptual metaphor thus becoming the basis of rational thinking with all the underlying processes. By mapping from a source domain to a target domain, complex ideas and abstract concepts can be easily understood, making use of more concrete, familiar domains. The mapping process also entails a relationship between the source and target. Moreover, metaphorical mapping is not random, reflecting underlying patterns in our thought and experience, which can be natural or social frameworks, such as those highlighted in framing theory. The most quoted example in this regard is that provided and discussed by Lakoff and Johnson, namely "Argument is war" (1980, 124). The source domain is represented by strategy, attack, defense, victory, and defeat, while the target domain is represented by plan, approach, persuasion, and counterargument. By mapping, we understand that an argument in a debate is like an attack in war. Therefore, winning an argument is like winning a war. Likewise, a source domain (war) can be mapped onto a target domain (terror, disease, corruption). Therefore, we have "war on terror/disease/corruption". It has thus become obvious that we do not use metaphors just in language, shaping not only how we describe reality, but act in accordance to metaphors.

In this context, *cognitive studies* investigate how people use concepts or conceptual categories in order to understand and interact with the world they live in. Lakoff (1987) argues that *concepts* are mental representations of objects, entities and events kept in people's memory. People transform thoughts into concepts and, subsequently into language, in order to interact properly with their companions or to adjust their behavior to the environment. Filtering information and sharing representations imply categorization, as the mental activity of grouping things together into conceptual categories or classes. Thus, "most categorization is automatic and unconscious, and if we become aware of it at all, it is only in problematic cases. In moving about the world, we automatically categorize people, animals, and physical objects, both natural and man-made. This sometimes leads to the impression that we just categorize things as they are, that things come in natural kinds, and that our categories of mind naturally fit the kinds of things there are in the world. But a large proportion of our categories are not categories of things; they are categories of abstract entities. We categorize events, actions, emotions, spatial relationships, social relationships, and abstract entities of an enormous range: governments, illnesses, and entities in both scientific and folk theories, like electrons and colds. Any adequate account of human thought must provide an accurate theory for all our categories, both concrete and abstract" (Lakoff 1987, 23).

Consequently, *cognitive linguistics* – a new approach to the study of language develops (in the 1970s) from the premise that language is embedded in cognition. One of the strongest assumptions underlying the field of cognitive linguistics belongs to Lakoff & Johnson (1980): "Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature" (Lakoff & Johnson 1980). Language and cognitive processing are closely interrelated in the human brain, which means that "language is governed by general cognitive principles, rather than by a special-purpose language model" (Croft & Cruse, 2004, i). From the above-presented aspects, that when individuals come into contact with things or facts from reality, they automatically tend to categorize them. Cognitive researchers argue that humans operate within scripts, frames and categories that help us organize experiences (including perceptions, knowledge, and attitudes), and make sense of what is happening around us.

Combining the knowledge provided by the two aforementioned theories, one can speak about the psychological effects of metaphoric framing. Metaphors operate below the level of conscious scrutiny, often shaping intuition and emotion. Studies in experimental psychology show that metaphorical framing can be used as a cognitive shortcut or can influence moral judgments, risk assessments, and political attitudes (Thibodeau & Boroditsky, 2011). For example, framing corruption as a "virus" may entail defensive and recovering measures, whereas framing the experience of a disease like cancer as a "battle" may entail lack of strategy and guilt in case the person fails to recover. In narrative warfare, metaphors can set the stage for public interpretation of complex events, often simplifying moral ambiguities and creating affective resonance. Neuroscientific studies reveal that metaphorical framing engages brain regions associated with emotional processing, memory encoding, and moral judgment (Citron & Goldberg, 2014). This emotional resonance explains why metaphor-based propaganda often outperforms fact-based counter-narratives in persuasive power.

Moreover, while *framing* focuses on the way information is presented (*frame*), namely by highlighting certain aspects and while downplaying others, *priming* entails exposing the audience to specific stimuli in order to shape perceptions and elicit certain responses to meet the agenda. Priming refers to "changes in the standards that people use to make political evaluations (Iyengar *et al*., 1987, 63, in Dietram *et al*., 2007, 9-20). Priming is a tool employed to agenda setting extension, thus including new content, which is based on introduced considering the assumption that information processing is based on influenced both by memory models, on the one hand, and on the most accessible content, on the other hand. Therefore, *metaphors*, *mapping, framing, and priming are important tools not only in language, but also in cognition*. Thus, they have become key instruments in both hybrid and cognitive warfare.

2.2. Metaphor as a Tool in Cognitive Warfare

Having shown the importance of metaphors for cognition, as well as the relationship between them and mapping, framing, and priming, we can briefly explain how they can be employed in cognitive warfare to serve the strategic agenda. Considering that metaphor-driven framing becomes a subtle, but potent tool in both hybrid as well as cognitive warfare campaigns, we shall further will provide some examples of the key ways in which metaphors, along with framing and priming, can serve as tools for cognitive shaping. Mention must be made that the corpus of examples was drawn from the media, public discourses and documents, more broadly, from the public sphere, in order to capture representations that are socially circulated and publicly accessible.

• *Framing complex concepts or narratives*

As already mentioned, metaphors can be used to simplify abstract constructs, to make them more salient. Thus, disinformation/misinformation (American Psychological Association, n.d.) and propaganda are framed as contagious diseases, therefore the expressions "a virus of dis/misinformation"/"spread dis/misinformation"/"counter propaganda" (The Conversation, 2024) implicitly suggest that policy responses that mirror physical/healthcare/contagious threats are needed. Likewise, other more or less abstract constructs (e.g., terror/ism, corruption, disease, climate change, etc.) are framed as enemies in the battlefield. Therefore, strict or even extreme measures are required to resist to/combat them. The "war/battle on terror/corruption/drugs/Covid-19" phrases relate the concepts to warfare/time. In the same vein, "war on truth" suggests that truth itself is under siege, thereby legitimizing countermeasures such as censorship, surveillance, or counter-disinformation campaigns. Moreover, narrative environments can be framed as fragile systems needing regulations (e.g., "information ecosystem", "cognitive pollution") suggesting the necessity of normalization. Thus, in extreme situations, tactics pertaining to war become legitimized and/or normalized as absolutely necessary for survival (e.g., invasion, surveillance, extrajudicial measures, quarantine-like measures, containment, military force or pre-emptive cognitive interventions).

• *Priming emotional responses*

Metaphors engage moral and affective reasoning. Thus, war-related(like) metaphors (e.g., "battle against climate change", "fight against terror") invoke urgency and moral action. In the same vein, describing migration as a "flood" activates fear and a perceived loss of control.

• *Identity construction and polarization*

Using metaphors to cast certain groups, especially opponents, as "invaders", "parasites", "infestations", "zombies", identity and otherness are reinforced. Metaphors thus help dehumanize and polarize populations, creating in-groups and out-groups. Moral disengagement and even hate are elicited based on depriving

people of human traits. In the same vein, using metaphors belonging to the machine and AI paradigms while framing people, especially adversaries, as "programmed" or "algorithmically influenced", further helps depersonalize them, thus facilitating digital or social engineering interventions.

• *Mapping*

As previously mentioned, mapping is involved in streamlining the information flow, understanding its impact, and adopting strategies to manage the complex situations. Thus, metaphors related to journey, framing a path, can be employed to help portraying a possible destination, making it thus easily accessible/more salient (*e.g.*, "navigating change", "mapping information", "cognitive terrain mapping"). In the same vein, phrases like "building trust", "strengthen partnership", "building resilience", "coalition of the willing" suggest collaboration and will to achieve a set goal, which can be genuine or belong to a specific agenda.

2.3. Implications for Defense

Having explained how metaphors can become tools in CW, as well as how framing, priming and mapping can be employed in CW to meet the agenda, we intend to highlight some of the implications of the acknowledgement of the role of metaphors in cognitive warfare for defense policy and counter-metaphor strategies.

• *Strategic implications*

Considering that the power of metaphors, in the context of CW, lies in the fact that they shape thought processes before scrutiny can be applied. Strategically deployed metaphors may be intended to root ideologies, justify violence, delegitimize institutions, etc. Thus, metaphors can be employed to undermine trust in governments, institutions, and leaders. Entailing a lot of war-related phrases, they can dilute the civil-military boundaries, since domestic, social or educational aspects can be portrayed security or defense priorities. In this context, mention should be made that, unlike real war, where attacks are not continuous, in CW, they are persistent and difficult to attribute, resulting in severe social damage, which can be too late perceived as such. Moreover, cutting-edge technology, mainly that embedding AI, amplifies the increasing actualization of CW.

• *Defense policy/strategy implications*

Under the circumstances of increasingly prominence and documentation of CW, defense policy must adapt, broadening its scope to encompass the concept of "cognitive security". Actions in this regard have already been conducted, as is the mentioned case of NATO ACT developments in this field. Such initiatives like this can result in the reconceptualization of national security to include, for example, mental resilience as "critical infrastructure". The reconceptualization can also entail a higher level of interagency coordination as well as an expanded mandate for the military in the cognitive domain, which may generate some ethical and legal

challenges, especially considering new norms to be adopted to regulate not only the use of AI-based and neuro/nano-technology, but also the prevention of cognitive domain weaponization.

• *Counter-metaphor strategies*

Given the strategies, techniques, and tools employed in CW, of which, more often than not, the subject is not aware, developing literacy in the field is required, so that, on the one hand, they could be easily detected by anyone, and, on the other hand, counter-metaphor strategies for minimizing cognitive distractions could be developed.

• *Framework for detection and counteraction*

Some of the frameworks include media literacy training, based on metaphor potential to contribute to narrative construction, to raise public awareness of metaphorical manipulation, linguistic scanning and analysis of the metaphors used in the media and social discourse to highlight how dominant metaphors are used to frame public discourse; frame mapping to detect shifts in perception over time, which will help the development of both new metaphor clusters and counter-metaphor strategies; reframe narratives to counter metaphors employed in hostile activities or in conflict exacerbation, namely reframing those containing war, disease, flood, wave, with the constructive ones, such as journey, ground, creativity (*e.g.*, "migration wave"/"journey of resilience"; "battle on disease/war, etc."/"journey into disease, etc."; "lay ground for peace, cooperation, etc."). Such strategies create space for different perspectives to coexist.

2.4. Ethical and Legal Considerations

The deliberate manipulation of cognition raises significant ethical and legal challenges (*c.f.* Miller, 2023). The weaponizing of metaphors should thus be a key concern, especially in democratic societies. The challenges are mainly related to the following aspects, some of which having been already mentioned. Thus, metaphors can contribute to creating detachment and lack moral accountability (e.g., "neutralizing targets"), especially by involving AI-enabled technologies. Moreover, they can contribute to dehumanization, by depicting individuals as less than human beings (e.g., "zombies"). Strategic metaphors can be persuasive and may backfire if perceived as propaganda. In this context, the thin line between persuasion and manipulation should be defined, as accurate as possible and oversight mechanisms should be regulated by clear norms. In the same vein, psychological operations should be strictly limited, both nationally and internationally. In this context, mention should be made there have been attempts, especially in democratic societies, including Romania, to develop regulations that also consider the definition of targets of such operations, especially under the circumstances that the balance between national security and civil liberties remains a challenge in developing appropriate cognitive defense strategies.

3. Discussion

We have organized this section in line with the research questions to present the main findings related to the following issues: metaphors are only linguistic tools or they are cognitive structures; the extent to which metaphors play a key role in CW; the acknowledgement of the role played by metaphors in CW have implications for defense policy and "counter-metaphor" strategies; and the ethical and legal challenges in this regard.

3.1. Metaphors in language and cognition

Linguistically, metaphors are comparisons between two classes of objects, without using prepositions such "like" or "as". It means that metaphors do not directly suggest that an object/something is like something else, which would be a simile, but that an object is another (*e.g.,* "argument is war"). Metaphors are frequently used in everyday language, and, more often than not, users are unaware of the fact that a metaphor is employed. The structure of a metaphor entails both a relationship between two classes of objects and a difference that results in familiarity, clarity, explanation, and, finally, in meaning-making, especially in the case of complex or abstract constructs.

As they help understanding the reality, there is an evident relation between metaphors and cognition, a fact that has been documented by famous cognitive linguists like the ones quoted above. Broadly speaking, we understand the world by use of metaphors. Therefore, metaphors change the way we perceive reality, contributing to cognitive shaping. Mapping, framing and priming are added to metaphors to make the world easily understandable, to persuade or even manipulate people into a specific form of understanding and, consequently, acting, according to certain agendas. Thus, within the critical cognitive linguistic framework, metaphors can be analyzed as cognitive tools that, when integrated with security studies, become not only rhetorical devices, but also key components of strategic communication, shaping strategic narratives.

3.2. Metaphors in CW

Considering that metaphors are fundamental to both communication and cognition, they are instrumental in cognitive warfare by shaping how individuals perceive threats, evaluate actions, and form collective identities. Thus, metaphors can be easily weaponized to be employed in CW as subtle, yet powerful instruments of psychological influence. Their subtlety consists in the fact that they are often invisible, but profoundly influential. In cognitive warfare, they become operational tools that structure thought and behavior. Unlike overt propaganda, metaphorical framing operates at a subconscious level, reducing resistance and increasing

absorption. Taking into account the two discussed characteristics of framing, namely selection and salience, it has become obvious that once metaphors are embedded in public discourse, it is difficult for them to be displaced often acting mechanically. The mechanical and endurance components make them potent tools for long-term influence, especially when combined with AI-enabled technology, resulting in algorithmic amplification on digital platforms. Mention should be made, in this context, that AI networks can be weaponized themselves, by poisoning the databases used to train algorithms, AI being thus employed as an adaptive strategic weapon.

In strict connection to the above-mentioned aspects, we consider important to highlight the fact that metaphors can easily become entrenched. Thus, once a metaphor succeeds in dominating the discourse, alternative framings are increasingly difficult to introduce. The examples provided in the present paper are eloquent in this respect, especially those related to the idea of war, which make more constructive solutions appear naïve, ineffective, or even dystopic. In this context, another important observation is that the employment of metaphors in cognitive warfare is double-edged – they can ease the understanding of a problem and mobilization towards finding the appropriate response, while they can also constrain cognition, by entrenching ideologies, justifying violence, delegitimizing institutions, eroding trust, containing dissent etc. Therefore, the way metaphors are used is not just a linguistic concern, but also a matter of strategic importance.

3.3. Metaphors and defense policy

Understanding and critically analyzing metaphor usage is essential to responsibly approaching cognitive warfare. Having acknowledged the key role of metaphor in cognition as well as the mechanisms related to its usage in cognitive warfare, we have presented the main identified implications of such acknowledgement for defense policy along with some counter-metaphor strategies based on the available sources and provided examples. In this context, it is important to point out that understanding metaphorical mapping, framing and priming are also critical for modern defense.

Therefore, military planners and decision-makers should include training in metaphor literacy as well as metaphor analysis into their constant preoccupations. Additionally, metaphors should also be carefully considered while situational awareness-related processes are conducted, having in view the conflicts increasingly target the human mind, being mainly aimed at eroding trust, the human domain becoming thus the sixth domain in warfare (Le Guyader et al 2022, 1-5). Considering the amazing development of AI-enabled technology, as well as the possibility for it

to be easily weaponized, digital literacy also becomes crucial, although not enough in defense, especially in societies that preserve democracy, the rule of law, and sovereignty as core values. In this context, it is worth noting that metaphor analysis is interpretative and context-sensitive. Cultural variations in metaphor usage may complicate cross-border operations.

In addition, countering adversarial metaphors, employing counter-framing techniques, such as narrative inoculation or competing metaphor deployment, presents strategic dilemmas that are related to the risk of over-reliance on the power of metaphors. More precisely, repeated exposure to metaphor-laden narratives can shift public perception and prime behavior consistent with the adversarial metaphorical framing. In this context, more responsible metaphor use in policy discourse has been advocated for, based on metaphor audits, to detect cognitive vulnerabilities in target populations (Haiden 2023, 101-134).

All in all, CW represents a new and transformative domain of operations. That is why, equally transformative shifts should be conceptualized and subsequently operationalized in terms of defense strategies, policies and operations. By targeting the mind rather than the body, it demands integrated, adaptive, and ethically grounded responses.

3.4. Ethical challenges

Weaponizing of metaphors, as is the case of CW, raises both ethical and legal concerns, particularly in democratic societies that value freedom of thought and speech. Thus, appropriate oversight mechanisms should be in place to ensure transparency in terms of the fine line between persuasion, manipulation and influence, as well as the use of AI and other futuristic and sometimes mind-blowing technologies in this domain.

In the same vein, we consider that the preservation of our humanity is key, despite the undergoing conflicts and the rapid advancement of technology promises. Considering that CW mainly targets trust in oneself and in others, it can easily result in dehumanization and social isolation. That is why, we advocate for the adoption of clear legal norms in the field. In addition, taking into account that exposure period makes the difference between information/psychological warfare and cognitive warfare, we express our concern with regard to the cognitive conditions of the societies worldwide, which may become a serious threat in the future. More precisely, other types of warfare, which entail episodic activities, while in CW the exposure, helped by technology-enabled hyper-connectivity, is permanent, persistent and adaptively enhanced, in order to deny or degrade the cognition, which is a miraculous human characteristic.

Conclusion

The present qualitative narrative review, presented in the IMRaD format, does not aim to cover the topic extensively, but rather to streamline the existing knowledge in the field and make it more accessible to the general public, including by providing examples considered relevant. Also, it has highlighted the main themes as they have resulted from the study of the literature. Furthermore, some challenges have been identified, especially related to the adoption of appropriate ethical and legal norms to deploy and counter metaphors in CW, while preserving both security and civil liberties that have been embedded in democratic societies.

Building on the present findings, future research could further investigate metaphorical framing, focusing on developing norms to operationalize metaphor in military contexts as well as metaphor resistance strategies. Moreover, the evolving potential of AI-enabled devices to become strategic weapons may be thoroughly examined in sync with technological advancements. Metaphors are not merely literary tools; they are integral to the processes through which individuals construct meaning and make decisions. Their influence is not always benign. However, within the context of cognitive warfare, metaphors function as tools of influence, capable of shaping perception and behavior on a large scale. Consequently, metaphors should be regarded as critical strategic assets in modern defense planning. An intriguing question that arises in this context is whether, when deployed as part of warfare strategies, metaphors affect only adversaries or whether they influence allies and domestic audiences as well.

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