



## “What’s COVID-19 Vaccine Like?” – From A Cognitive Frame to A Similative Proposition

*Nino Guliashvili, Associate Professor*

School of Arts and Sciences, English Philology

Ilia State University, Kakutsa Cholokashvili Avenue 3/ 5, 0162

Tbilisi, Georgia

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### Abstract

Frames and propositions are believed to be cognitive acts that play an important role in the perception of reality and the enactment of discursive practices. The linguistic scrutiny of the Covid-19 pandemic discourse could shed light on how the figurative language, similes in particular, are conceptualized by the cognitive structures and represented discursively as surface-level manifestations of the pandemic reality. This paper argues that similes as opposed to metaphors explicitly expound propositions and communicative frames in the discourse to avoid incipient cognitive ambiguity of the comparison. As it appears, similes may come forward as more tangible cognitive-discursive structures that assist the human mind to cope with the novel cognitive comparisons.

**Keywords:** Simile, figurative framing, similative proposition, cognitive linguistics

The entire world was challenged by the impact of the Coronavirus pandemic at the end of 2019 that marked the outbreak of the virus. Metaphorically speaking, people would say: ‘*we have not seen the light at the end of the tunnel yet*’. Definitely, metaphors have been pervasive and represented abundantly in the coronavirus discourse competing with the world’s leading discourses of politics and economy. Metaphors for the

pandemic have been extensively researched (Craig 2020; Nerlich & Jaspal 2020; Semino 2021; Guliashvili 2022; Döring and Nerlich 2020;) as they reflect people's attitudes, their cognitive stances in relation to the pandemic and the microscopic virus ravaging the unperturbed existence people used to have 'before coronavirus invasion'.

Similes may not be as powerful figures of speech as metaphors, but the question "what's the COVID-19 vaccine like?" fueled the research. In doing so, the paper attempts to focus on the investigation of the above-mentioned discursive figure represented in the coronavirus corpus, which possesses different rhetorical and discursive features. Apart from cognitive and discursive similarities that metaphors and similes share, the evidence-based characterizations manifest cognitive and linguistic peculiarities similes may promote (Israel, Riddle Harding & Tobin 2004; Gentner & Bowdle 2008; Dancygier & Sweetser 2014; Cuenca 2015; Romano 2017).

The aim of the present article is to identify the basic cognitive rationale of a simile in the naturally occurring discourse of the COVID-19 pandemic. The explication of the cognitive basis of similes in this paper does not imply that the same procedural steps were taken by the creators or recipients of the target language, rather it would be more reasonable to expound an analytic framework of similitive language along with its conceptualization as a theoretical stance. In this paper, I have an endeavor to show that similes operating on cognitive structures, are realized into explicit textual propositions of comparison, and could be expanded through *elaboration* (an extended part of a simile, which will be delineated in the following section) as well as extricating communicative frames, which tend to influence the recipients.

## Similes

Simile manifests comparison between two entities, which do not resemble each other. Simile, unlike metaphor, explicitly indicates the comparison through certain words "like" or "as" and both target and source entities/concepts are directly represented. The investigation of similes and metaphors dates back to the origin of Rhetorical Theory. Interestingly, Aristotle discerns that the difference between these figures of speech is contingent upon a slight distinction: "the simile is also a metaphor ... the difference is, but slight" (Aristotle III,4). The analysts and theorists have been trying to scientifically account for the existence of two alike but at the same time different figures rendering a metaphor as an elliptical simile (Miller 2021), or a direct result of the metaphorical mapping given in language (Lakoff & Johnson 1980; Glucksberg & Keysar 1990). In the end, a simile and a metaphor appear to be the case of an ontological priority: "Which comes first metaphorical egg or the chicken of the similitude?"

(Glucksberg 2001,29). However, the fact that they both still do exist vindicates the perspective that both are the reflections of human mind: the metaphor – based on implicit cognitive and the simile – based on overt cognitive-discursive comparison.

In a traditional sense (“the equivalence approach”) a simile could be characterized as an *expanded metaphor* as it “simply makes explicit what a metaphor merely implies” (Israel et.al. 2004,123) as well as being conceptualized alike (Tversky 1977; Glucksberg & Keysar 1990; Addison 1993). The equivalence approach was a case of critique (Romano 2017). Nevertheless, psycholinguistic and discourse studies come forward with the disparities similes can bring about (e.g., Aisenman 1999; Chiappe & Kennedy 2000; Chiappe, Kennedy & Chiappe 2003; Croft & Cruse 2004; Bowdle & Gentner 2005; Gentner & Bowdle 2008; Dancygier and Sweetser 2014; Glucksberg & Haught 2006; Israel et al. 2004).

The primary and most notable difference between metaphors and similes is the presence of an overt marker *like* and even this slight linguistic - structural difference could contribute to the changes in meaning and function (Langacker 1987, 2013). From this perspective, *like* is a standard-bearer, which sets the difference between a simile and a metaphor explicitly alluding to the source and target domains, as well as initiating the mapping process. Cognitively, mappings and interpretations of metaphors and similes cannot always be identical / similar, which could explain the fact that not all the metaphors could be transformed into similes or vice versa (Romano 2017). Metaphors are perceived as categorizations, whereas similes are understood as comparisons, and from a psycholinguistic perspective, the cognitive comparison is slower as it requires more processing stages (Roncero et al., 2021, 95). Nevertheless, similes could propose more ingenious conceptual mappings, which render them more preferable figures of speech (e.g., Israel et al. 2004; Bowdle & Gentner 2005; Moder 2012; Dancygier & Sweetser 2014).

Discursive functions of the figurative language are yet another factor contributing to the discrepancies between metaphors and similes. Empirical data through real communicative contexts reveal that metaphors mainly work on conceptual level via a lexical-paradigmatic axis of the discourse, while similes manifest both linguistic-discursive and conceptual features, pertaining thus to the syntagmatic axis (e.g., Cuenca 2015; Romano 2017). Regarding the structure and semantics of a simile, three componential mode is evident: A (*comparandum* – the target, or the topic of comparison), B (*comparatum* – the source, or the vehicle of comparison), and E (elaboration – explication of the implicitness) (Cuenca 2015, 143). Thus, *elaboration* makes the implicit aspect of comparison (A is like B) explicit by a syntagmatic addition to the core structure of a simile. Consequently, if *like* is

a comparison marker linking the element A with the element B in a simile, *elaboration* is an overt discursive indicator of the mapping between A and B (without an indicator the identification of the shared features between the conceptual domains could be ambiguous due to cultural and epistemic/informational backgrounds).

### **From Frames to Figurative Framing**

It is essential to characterize what the cognitive reality of a simile could be. At this point propositional analysis would be a relevant means to explore psychology of language processing though well-established predicate and argument structure proposed by Bovair and Kieras (1985), which was rendered as workable, “dramatic” and indirectly capturing some aspects of a cognitive reality (Perfetti and Britt 1995, 16). This theorization of the cognitive reality does not necessarily mean that all human cognition is propositional in essence; human cognition is realized through image schemas, which have a continuous analogous structure as opposed to propositions with a discrete finitary structure (Crisp 2002, 11). Image schemas, such as SOURCE - PATH - GOAL, through cognitive semantics is viewed as embodiment of a human mind (Gibbs and Colston 1995). As for the propositions, they could provide a hierarchical series in the form of a foundation of the text (Kintsch and van Dijk 1978; Kintsch 1998) as well as being the carriers of some kind of cognitive reality, which is not the basis or medium of all human cognition. Crisp (2002, 14) states that it is discernible to construct a metaphorical proposition for every linguistic metaphor through a three-level approach: “The first level is that of the surface linguistic expression; the second level is that of the metaphorical proposition; the third level is that of the cross-domain mapping”. The second intermediary level expounded in this approach is on the one hand practical as it is most probably that human mind cannot directly move from a surface structure (i.e., linguistic metaphor) to a conceptual domain mapping and on the other hand, it is theoretical as propositions may have the cognitive reality, which is not equivalent to all human cognition being propositional.

As for the notions of ‘frame’ and ‘framing’, they need to be more tangibly defined to be applied in empirical studies (Dijk 2020) as well as minimizing the use of ‘frame’ in the sense of equally ambiguous concept ‘perspective’ (Schon 1993). Supposedly, the other more feasible notions and phenomena are camouflaged by the concepts of ‘frame’ and ‘framing’ (Dijk 2023). Therefore, it must be identified that ‘frames in thought’ are different from ‘frames in communication’ (Druckman 2001). The latter includes verbal and non-verbal ‘pictorial’ frames (Abdel-Raheem 2019). Communicative frames are contingent on cognitive frames, they emerge on the surface level when “cognitive frames are encoded in language art, or

another medium, causing the cognitive frames to be created or activated in someone else's mind" (Sullivan 2023, 6).

The conceptualization of 'framing' is most essentially provided by Goffman (1974, 21) who defined 'frames' as 'schemata of interpretation' that capacitate individuals 'to locate, perceive, identify, and label' phenomena in the social milieu of our world. Thus, frames tend to operate where communication takes place, where discursive practices are overtly represented, where occurrences around us enter the discursive dimension influencing or more precisely shaping people's perception and attitudes. If frames are meant to cognitively predispose people in favour of certain policies, and regulations, then mass media is certainly a relevant discursive platform to instrumentalize 'frames', which is a dynamic process since to frame is 'to select some aspects of perceived reality and make them more salient in a communicating text, in such a way that as to promote a particular problem definition, casual interpretation, moral evaluation, and/or treatment recommendation for the item described' (Entman 1993, 52). Consequently, framing is accomplished by the construction of meaning, which is a key factor in the instrumentalization of so-called schemata.

From the perspective of cognitive linguistics 'meaning' of lingual units is deeply rooted in human experiences, and the assignation of meaning to the language is no other than involvement of other cognitive domains in the process of meaning making, such as memory, perception, imagination, and reasoning (Croft and Cruse 2004). Since human cognition has an inherent nature of constantly shaping the understanding of complex social phenomena by comparing them with more experience-based perceptions of reality, it is obvious that figurative language, metaphor in particular, which is the reflection of conceptual comparison, fleshes out as a *metaphoric frame structure*. The latter comes across as an enactment of a *source-frame* and a *target-frame* projection to make events, processes, policies, abstract notions more tangible and perceivable for the audience (Lakoff and Johnson 1980). In the case of figurative language, metaphor for instance, two viable elements are linked through a choice of lexical unit: the source frame element being indexed in the discourse and 'the referential element in the target situation or frame' (Hart 2023, 252). Thus, the choice of a source element in reference to the target frame is open-ended and is defined by cultural and historical knowledge affected by individual and shared emotive experiences. Accordingly, logical, culturally, and historically determined, knowledge along with cognitive-emotive experiences with regard to the source frame legitimate potential actions within the target frame. Therefore, metaphor is accountable for consequences as to 'how a particular issue is "framed" or structured, which aspects are foregrounded and which are backgrounded, what inferences are facilitated, what evaluative and emotional

associations are triggered, what courses of action seem to be possible and so on' (Semino 2008, 91).

Metaphoric frames are interesting due to their inherent nature of relating two different frames through conceptual structures where *the source-frame* is projected over *the target-frame* to conceptualize actions, entities, and events via providing specific patterns for thinking that serve the purpose of perceiving the complexity of a phenomenon (Lakoff and Johnson 1980). As a discursive construct, frame elements may be indexed by *lexical units* in the language so as to conceptualize referential occurrences, and as far as metaphor is involved a lexical unit establishes the link between “the source-frame element indexed and the referential element in the target situation of frame” (Hart 2023, 252).

Metaphoric frames have been tracked down in the discourse of the pandemic; the research proposes versatile conceptualizations of *danger*, *violence*, and *threat* cognitive frames through the pervasive domains of war, natural disasters, fire, monsters, in order to influence people’s right of choice. Nevertheless, these hegemonic frames could be challenged by other novel metaphors projecting the frames of *solidarity*, *cooperation*, and *responsibility* (Olza, Koller, Ibarretxe-Antunano, Perez-Sobrino, & Semino 2021; Perez-Sobrino, Semino, Ibarretxe-Antunano, Koller, & Olza 2022).

Metaphor and simile both are the reflections of human mind: the metaphor – based on implicit cognitive and the simile – based on overt cognitive-discursive comparison. Similes are also based on cognitive frames, which are extricated in the discourse through communicative frames. The present study focuses on the communicative frames enacted by similes as the cognitive-discursive dimension of this figure of speech may play a pivotal role in the emergence of a textual similitive proposition.

## Methods

The empirical material for the study derives from Brigham Young University coronavirus corpus <https://www.english-corpora.org/corona/> (Davis 2019). The extracted lingual data are contingent on the following string “target is like source” where vaccine/vaccination is the target, and the source is X – an open discursive choice. The data were retrieved in the form of concordance lists based on the search string “ \* *vaccin* \* *is like* ” The search yielded competing similes with certain amount of hits (665) out of which 135 are similes with the linking verbs: be, look, feel, seem. The dataset for the present research was compiled and deposited on Harvard Dataverse<sup>1</sup>. The dataset is represented by excel files encompassing the information concerning the figurative language.

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<sup>1</sup> <https://doi.org/10.7910/DVN/2VUPKT>

## Results and Discussion

### Surface Level Representations and Frames

In this part of the discussion, the identification of textual/surface level representations of smiles expands into the characterization of a cognitive foundation with the focus on source concepts/entities and communicative frames respectively.

The similes have been manually categorized in relation to their semantic features. A wide array of similes in the concordance lists can be divided into relatively more frequently occurring semantic categories in relation to the source entity/concept of comparison. The source concept is a more tangible object of the comparison, the entity that provides an explanation for the vaccine. The following source concepts/entities were identified: *computer software and technology, security and regulations, military intervention, tournament, panacea*, and finally, *adventure*. The linguistic variations of the similes in connection with these source concepts are represented below in **Table 2**. The mapping is defined by comparing the target entity (vaccine/vaccination) with a variety of source entities/concepts.

**Table 2.** Categorization of COVID-19 similes based on source concept/entity

| Source Concept/Entity                   | Similes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Computer software<br/>Technology</i> | <ul style="list-style-type: none"> <li>* software program to the body</li> <li>* a SpaceX shuttle</li> <li>* a self destruct or biodegradable messenger carrying instructions to make the most important</li> <li>* a metallic implant</li> </ul>                                                                                                                                                                                                                                           |
| <i>Security</i>                         | <ul style="list-style-type: none"> <li>* a helmet for Corona</li> <li>* a bulletproof vest/mask</li> <li>* protection shield against the virus</li> <li>* an umbrella in the rain</li> <li>* seatbelt</li> <li>* “ extra security “</li> <li>* putting on your seatbelt.</li> <li>* a parking brake: It works well once a car is in park, but not nearly as well when you’re racing down the highway</li> <li>* obeying traffic rules: It’s a life-saving system</li> <li>* pass</li> </ul> |
| <i>Military Intervention</i>            | <ul style="list-style-type: none"> <li>* shooting at a moving target with a fixed gun</li> <li>* a “ force field”</li> <li>* Frontline doctors and nurses</li> <li>* a moving target</li> </ul>                                                                                                                                                                                                                                                                                             |
| <i>Tournament</i>                       | <ul style="list-style-type: none"> <li>* getting your immune system ready for a big match against the virus</li> </ul>                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Panacea</i>                          | <ul style="list-style-type: none"> <li>* Nectar</li> <li>* Medicine</li> <li>* the light at the end of the tunnel</li> </ul>                                                                                                                                                                                                                                                                                                                                                                |

|                  |                                                                                                                                  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <i>Adventure</i> | <ul style="list-style-type: none"> <li>*arriving at base camp on Mount Everest</li> <li>*embarking on a treasure hunt</li> </ul> |
|------------------|----------------------------------------------------------------------------------------------------------------------------------|

The categorization and qualitative analysis of the similes yielded noteworthy communicative frames, promoting vaccine administration as a positive and acceptable procedure to safeguard the healthcare of the world population. Therefore, almost all the source concepts/entities of the comparison sustain the positive meaning. President of Moderna, Dr Stephen Hoge stated in February 2020: “RNA is like a software molecule in biology. So, our *vaccine is like the software program to the body*” (Park 2020) responsible for generating an immune response to the body and when the population gets vaccinated “*It is like watching software updates load*” said Tracy Epton (2021), Healthcare psychologist at Manchester University. Framing the process of vaccination as a software program update, which is a beneficial procedure for normal functioning of a device, conjugates the two cognitive frames: the frame of vaccination with the frame of software update. This comparison seems to be extremely popular due to the resemblance between the DNA/RNA and computer software coding as the society is more open to accepting and activating the communicative frames when they are disseminated by a reliable or authoritative sources (Sullivan 2023, 10).

The source concept of the simile in the pandemic discourse appears to be quite versatile ranging from the lexical domains of *computer software and technology, security and regulations, military intervention, and tournament* to *panacea* and even *adventure*. Therefore, the frames of technology, war, security, sport, and medicine are aligned with the frame of the pandemic, thereby transferring the notions of certain experiences onto the global phenomenon. All the source entities are about showing the benefits of vaccination by framing the vaccine or process of vaccination more comprehensible for the people. Nevertheless, some source concepts bear the challenge of the vaccination. In this sense, the procedure is compared with *shooting at the moving target*, which makes it more difficult to attain the most valuable goal (Castillo-M.D 2021) or the other attitude which compares the vaccine administration to “blaming certain books in school libraries to have sex...” (Shafer 2022). The contradicting communicative frames challenge the process of vaccination as they may give rise to the cognitive frames which might not be compatible with one another.

### Cognitive Shift

In this part of the paper, I will focus on the structure of a simile, which is a key to the most discernible differences between similes and metaphors on a discursive as well as cognitive level. Extract 1 (Tribune Desk 2020) below explicates the similitive proposition, which establishes likeness

of mRNA and a vaccine with the software program. Moreover, an extension of a simile - elaboration, expands into an explanatory statement to avoid ambiguity.

- (1) Dr Stephen Hoge, president of Moderna, while speaking to TIME, said: **‘mRNA is really like a software molecule in biology, therefore, our vaccine is like the software program to the body, which goes and makes the [viral] proteins that can generate an immune response.’**

The proposition in this example ‘mRNA is really like a software molecule in biology’ and ‘our vaccine is like the software program to the body’ explicitly states a comparative equation in the discourse (syntactically it is the combination of a copular phrase *be like + noun phrase*), which is not the case for a metaphoric proposition. The latter is more an intermediary cognitive link standing prior to the emergence of a linguistic or a surface level metaphor (Crisp 2002, 14). And an elaboration is discourse-syntactic expansion of a similitive proposition to make the essence of comparison more comprehensible for the public. Therefore, a cognitive mapping is transferred onto the surface level overtly stating the similarity between a biological molecule and a software program. Otherwise, it could be obscure to equate a molecule with a software program.

For more consideration, extract 2 (Cullen 2020) would provide an interesting stance. The simile in German doctor’s interview expounds that the benefits of vaccination should outweigh the risks and the precautionary principle - *dictum primum nihil nocere* (‘first, do no harm’) is vital to avoid the complications due to frequent mutations of the pathogenic genome. The similitive proposition here is the combination of a copular phrase (be like) and a gerundial phrase, which makes it syntactically more complex than the previous example. Nevertheless, for more clarification, it is also followed by an elaboration:

- (2) ... If frequent mutations occur, **vaccination is like shooting at a moving target with a fixed gun: you can hit the bull's eye, but you usually miss.** Thirdly, the pathogen should occur only in humans, because its eradication is possible only if it does not find shelter in animals. Finally, vaccination should provide long-term and comprehensive protection against the targeted disease.

Extract 3 (O’Leary 2021) is yet another example of a copular phrase + a gerundial phrase without the syntactic elaboration. Nevertheless, the necessity of dissolving ambiguity is resolved by a miniature narrative of an explicatory nature.

- (3) Professor Cormican said: **Getting vaccinated is like getting your immune system ready for a big match against the virus.** For most of us our immune team is ready for action after the

standard vaccine dose, for some people whose immune system is starting from a lower base, it's weaker, they need an extra training session, an extra vaccine dose to get them ready for that match and that's what the additional dose is about for the immunocompromised. It's getting them ready for that if they meet the virus.

As we can see, the similitive proposition (target entity is like source entity) unlike a metaphoric proposition, resides in a discursive dimension indicating *a cognitive shift* of a proposition into a discursive realm. An expansion of a simile into a syntactic elaboration or a miniature narrative seems to be essential for clarifying the essence of a simile, as they discursively map the overlapping features of the two entities in the discourse; thus, the incipient ambiguities, which the comparison may bear, are averted. While metaphors imply the cognitive comparisons and mappings, similes come across as explicators, especially when at one glance contradictory source entities are compared, e.g., a biological molecule and a software program, or a medical procedure and a shooting for sport.

## Conclusion

In this paper I have endeavored to show how similes perform cognitive and discursive functions in comparison with metaphors. The first level of a simile representation is contingent on its linguistic-textual appearance, which is grounded in the cross-domain mappings of the target and source concepts/entities. The most vulnerable part here is an intermediary – a propositional link, which in the case of metaphors is cognitive, however, with regard to a simile, a similitive linguistic statement is propositional by its nature. Therefore, as opposed to metaphors the two-fold cognitive shift is evident: 1. *A cognitive proposition morphs into a textual/linguistic proposition (implicitness into explicitness)*, and 2. *A similitive proposition lessens the exact sameness of the target and source concepts/entities in order to avoid ambiguity while mapping the domains*.

The human mind needs to digest cognitive comparisons. The metaphors which focus on the sameness of the source and target entities or concepts could be more experience based, as they imply the metaphoric propositions and cognitive mappings. However, similes being more cautious, stress the similarity between the two concepts; Thereby, the recipients of this figurative language may skip the stage of the implicit cognitive mapping and overtly frame the aspects of reality.

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### References:

1. Abdel-Raheem, Ahmed. (2019). *Pictorial Framing in Moral Politics: A Corpus-Based Experimental Study*. Routledge, Taylor & Francis Group.
2. Addison, Catherine. (1993). From Literal to Figurative: An Introduction to the Study of Simile. *College English*, 55(4), 402-419. <https://doi.org/10.2307/378650>
3. Aisenman, Ravid, A. (1999). Structure mapping and simile-metaphor preference. *Metaphor and Symbolic Activity*, 14(1) 45–51. doi: 10.1207/s15327868ms1401\_5
4. Aristotle. 1954. *Rhetoric*. Trans. W. R. Roberts. New York: Modern Library.
5. Bovair, Susan, and David Kieras. (1985). A Guide to Propositional Analysis for Research on Technical Prose. In B. Britton and J. Black (Eds.), *Understanding Expository Text: A Theoretical and Practical Handbook for Analyzing Explanatory Prose* (pp. 315-362), Hillsdale, NJ: Lawrence Erlbaum.
6. Bowdle, Bran F., and Dedre Gentner. (2005) The career of metaphor. *Psychological Review*, 112(1), 193– 216. doi: 10.1037/0033-295X.112.1.193
7. Castillo-M.D, Rafael. (2021). Do COVID survivors still need to be vaccinated? *LIFESTYLE.INQ.* 21 July. <https://lifestyle.inquirer.net/386013/do-covid-survivors-still-need-to-be-vaccinated/>
8. Chiappe, Dan L, and John M. Kennedy. (2000). Are metaphors elliptical similes? *Journal of Psycholinguistic Research*, 29(4), 371–398. doi:10.1023/A:1005103211670
9. Chiappe, Dan L, John M. Kennedy, and Penny Chiappe. (2003). Aptness is more important than comprehensibility in preferences for metaphors and similes. *Poetics*, 31(1), 51–68. [https://doi.org/10.1016/S0304-422X\(03\)00003-2](https://doi.org/10.1016/S0304-422X(03)00003-2)
10. Craig, David. (2020). Pandemic and its metaphors: Sontag revisited in the Covid-19 era. *European Journal of Cultural Studies*, 23(6), 1025–1032. DOI: <https://doi.org/10.1177/1367549420938403>

11. Croft, William, and Allan D. Cruse. (2004). *Cognitive Linguistics*. Cambridge: Cambridge University Press.
12. Crisp, Peter. (2002). Metaphorical propositions: a rationale. *Language and Literature*, 11(1), 7-16. <https://doi.org/10.1177/096394700201100102>
13. Cuenca, Maria Josep. (2015). Beyond compare: Similes in interaction. *Review of Cognitive Linguistics*, 31(1), 140-166. <https://doi.org/10.1075/rcl.13.1.06cue>
14. Cullen, Paul. (2020). German doctor: COVID-19 vaccine ‘could prove to be the biggest mistake’. *LifeSite*. 10 Sep. <https://www.lifesitenews.com/opinion/german-doctor-covid-19-vaccine-could-prove-to-be-the-biggest-mistake>
15. Dancygier, Barbara, and Eve Sweetser. (2014). *Figurative language*. Cambridge: Cambridge University Press.
16. Davies, Mark. (2019). *The Coronavirus Corpus*. <https://www.english-corpora.org/corona/>
17. Döring, Martin, and Brigitte Nerlich. (2022). Framing the 2020 Coronavirus Pandemic: Metaphors, Images and Symbols.” *Metaphor and Symbol*, 37(2), 71-75. <https://doi.org/10.1080/10926488.2021.2004378>
18. Druckman, James, N. (2001). The implications of framing effects for citizen competence. *Political Behavior*, 23(3), 225–256. <https://link.springer.com/article/10.1023/A:1015006907312>
19. Epton, Tracy. (2021). COVID: The three barriers that stop people from being vaccinated. *The Conversation*. 18 June 18. <https://theconversation.com/covid-the-three-barriers-that-stop-people-being-vaccinated-162617>
20. Entman, Robert, M. (2008). Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication* 43, 51-58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
21. Gentner, Dedre, and Brian Bowdle. (2008). Metaphor as structure-mapping. In Raymond Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 109 -128). Cambridge: Cambridge University Press.
22. Gibbs, Raymond, W. Jr., and Herbert L. Colston. (1995). The cognitive psychological reality of image schemas and their transformations. *Cognitive Linguistics*, 6(4), 347-378. <https://doi.org/10.1515/cogl.1995.6.4.347>
23. Goffman, Erving. (1974). *Frame Analysis: An Essay on the Organization of the Experience*. New York: Harper Colophon.

24. Glucksberg, Sam, and Boaz Keysar. (1990). Understanding metaphorical comparisons: Beyond similarity. *Psychological Review*, 97(1), 3-18. <https://doi.org/10.1037/0033-295X.97.1.3>.
25. Glucksberg, Sam. (2001). *Understanding Figurative Language*. Oxford: Oxford University Press, DOI: 10.1093/acprof:oso/9780195111095.001.0001
26. Glucksberg, Sam, and Catrinel Haught. (2006). On the relation between metaphor and simile: When comparison fails. *Mind & Language*, 21(3), 360–378. <https://doi.org/10.1111/j.1468-0017.2006.00282.x>
27. Guliashvili, Nino. (2022). “Invader or Inhabitant?” – Competing Metaphors for the COVID-19 Pandemic. *Health Communication*, 38(10), 2099-2105. <https://doi.org/10.1080/10410236.2022.2054101>
28. Guliashvili, Nino. (2022). Coronavirus Pandemic through Similes. Dataset, *Harvard Dataverse*, V2, 2022. <https://doi.org/10.7910/DVN/2VUPKT>
29. Hart, Christopher. (2023). Frames, framing and framing effects in cognitive CDA. *Discourse Studies*, 25, 247-258.
30. Israel, Michael, Jennifer Riddle Harding, and Vera Tobin. (2004). On simile. In M. Achard and S. Kemmer (Eds.), *Language culture, and mind* (pp. 123-135). Stanford: CSLI Publications.
31. Kintsch, Walter, and van Dijk, Teun A. (1978). Toward a model of text comprehension and production.” *Psychological Review*, 85(5), 363–394. <https://doi.org/10.1037/0033-295X.85.5.363>
32. Kintsch, Walter. (1998). *Comprehension: A paradigm for cognition*. Cambridge University Press.
33. Lakoff, George, and Mark Johnson. (1980). *Metaphors We Live By*. Chicago, IL: University of Chicago Press.
34. Langacker, Ronald W. (1987). *Foundations of cognitive grammar, vol.1: Theoretical prerequisites*. Stanford: Stanford University Press.
35. Langacker, Ronald W. (2008). *Cognitive Grammar: A Basic Introduction*. Oxford: Oxford University Press.
36. Miller, Mark, R. (2021). Language choice about COVID-19 vaccines can save lives.” *Journal of Communication in Healthcare*, 14(2), 99-101. DOI: <https://doi.org/10.1080/17538068.2021.1892285>
37. Moder, Carol Lynn. (2012). Two puzzle pieces: Fitting discourse context and constructions into cognitive metaphor theory. In Barbara Dancygier, José Sanders, and Lieven Vandelanotte (Eds.), *Textual choices in discourse: A view from cognitive linguistics* (pp. 157-183). AM/PH: John Benjamins,

38. Nerlich, Brigitte, and Rusi Jaspal. (2021). Social representations of 'social distancing' in response to Covid-19 in the UK media. *Current Sociology*, 69(4), 566-583. DOI: <https://doi.org/10.1177/0011392121990030>
39. O'Leary, Kim. (2021). Covid-19 cases update Ireland with 1,059 new cases reported. *DublinLive*. 1 Oct. <https://www.dublinlive.ie/news/dublin-news/covid-19-cases-update-ireland-21739580>
40. Olza, I Inés, Veronika Koller, Iraide Ibarretxe-Antuñano, Paula Pérez-Sobrino, and Elena Semino. (2021). The #reframecovid initiative: From Twitter to society via metaphor. *Metaphor and the Social World*, 11(1), 99–121. doi:10.1075/msw.00013.olz
41. Pérez-Sobrino, Paula, Elena Semino, Iraide Ibarretxe-Antuñano, Veronika Koller, and Inés Olza. (2022). Acting like a hedgehog in times of pandemic: Metaphorical creativity in the #reframecovid collection. *Metaphor and Symbol*, 37(2), 127-139. DOI: 10.1080/10926488.2021.1949599
42. Park, Alice. (2020). Covid-19 vaccine shipped, and Drug Trials Start. *Time*. 25 Febr. <https://time.com/5790545/first-covid-19-vaccine/>
43. Perfetti, Charles A., and Anne M. Britt. (1995). Where do propositions come from? In C. A. Weaver III, S. Mannes, & C. R. Fletcher (Eds.), *Discourse comprehension: Essays in honor of Walter Kintsch* (pp. 11-34). Lawrence Erlbaum Associates, Inc.
44. Romano, Manuela. (2017). Are metaphors and similes interchangeable? A case study in opinion discourse. *Review of Cognitive Linguistics*, 15(1), 1-33. DOI: <https://doi.org/10.1075/rcl.15.1.01rom>
45. Roncero, Carlos, Roberto G. Almeida, Laura Pissani, and Lola Patalas. (2021). Metaphor is not like a simile: Reading-time evidence for distinct interpretations for negated tropes. *Metaphor & Symbol*, 36(2), 85–98. doi:10.1080/10926488.2021.1882258
46. Semino, Elena. (2008). *Metaphor in Discourse*. Cambridge: Cambridge University Press.
47. Semino, Elena. (2021). 'Not soldiers but fire-fighters'– metaphors and Covid-19. *Health Communication*, 36(1), 50–58. DOI: <https://doi.org/10.1080/10410236.2020.1844989>
48. Schon, Donald, A. (1993). Generative metaphor. In Andrew Ortony (Ed.), *Metaphor and Thought* (pp. 137-163) Cambridge, UK: Cambridge University Press.
49. Shafer, Jack. (2022). The Dangerous Appeal of Neil Young's Righteous Censorship. *POLITICO*. 31 Jan. 2022.

- <https://www.politico.com/news/magazine/2022/01/31/dangerous-appeal-neil-young-censorship-00003923>
50. Sullivan, Karen. (2013). *Frames and Constructions in Metaphoric Language*. Amsterdam: John Benjamins Publishing Company.
  51. Tribune Desk. (2020). US firm ships 1st batch of coronavirus vaccine. *Dhaka Tribune*. 7 Mar. <https://www.dhakatribune.com/world/2020/03/07/us-firm-ships-1st-batch-coronavirus-vaccine>
  52. Tversky, Amos. (1977). Features of similarity. *Psychological Review*, 84(4), 327–352. doi:10.1037/0033-295X.84.4.327
  53. Van, Dijk, Teun A. (2020). *Critical Review of Framing Studies in Social Movement Research*. Barcelona: Center of Discourse Studies.
  54. Van, Dijk, Teun A. (2023). Frame analysis. *Discourse Studies*, 25(2), 151-152. <https://doi.org/10.1177/14614456231155086>