

THEME ARTICLE

The Power and Peril of Metaphor in Health Communication

Ben Riggs / Kettering Health, Dayton, OH

ABSTRACT

Metaphor is foundational to human cognition and language. It makes abstract concepts accessible through comparisons to concrete forms. In health communication, metaphors are indispensable tools for translating complex concepts into accessible, relatable language for the public. This article examines the cognitive underpinnings of metaphor, its roles in public health discourse, and its strategic use in health campaigns, particularly during the COVID-19 pandemic. Through case studies, including the use of metaphors in messenger RNA vaccine messaging, the article demonstrates how metaphors can clarify, motivate, and guide public understanding while having inherent risk to mislead, stigmatize, or oversimplify. Supporting this analysis is the work of cognitive scientists and linguists, such as Steven Pinker, as well as seminal texts like Lakoff and Johnson's *Metaphors We Live By*. Practical strategies for effective and ethical use of metaphor in health communication are provided, emphasizing the importance of cultural sensitivity, audience testing, and clarity. Ultimately, the article argues that although metaphors are powerful and necessary, they must be used carefully.

THE COGNITIVE FOUNDATION OF METAPHOR

Imagining human thought and communication without metaphor is like trying to imagine a structure without a foundation or paint without color or life without oxygen or Paris, France, without bridges.

Without metaphor, ideas and language would be emptied of color, vitality, flexibility, and accessibility.

A cursory survey of iconic figures begins to demonstrate the ubiquity of metaphor. Iconic communicators have long relied on metaphor to convey profound truths. Religious figures such as Jesus of Nazareth described faith as a mustard seed and his followers as sheep, invoking images from daily life to express spiritual concepts. Civil rights leader Martin Luther King, Jr, spoke of "cashing a check" when demanding justice, using financial metaphors to frame the struggle for equality. Environmental scientist Rachel Carson

described ecological degradation in *Silent Spring* through metaphors of silence and sickness, making the invisible consequences of pollution tangible and urgent.

Once considered the province of poets and novelists, metaphorical thinking and speaking is deeply rooted in the brain's preference for concreteness—connecting meaning, words, and definitions to tangible objects or lived experience. This cognitive trait predates our capacity for processing abstract concepts. As cognitive scientist and linguist Steven Pinker observes, metaphorical abstraction is central to the development of human intelligence. Abstract thought relies on the brain's familiarity with concrete, lived experiences to make sense of new or complex ideas—acting like a bridge to make abstract concepts accessible.^{1,2}

This can even be seen in children as they develop. Consider telling a small child the following 2 statements:

1. Go to sleep.
2. Lie in your bed; close your eyes.

Of the 2, a child is more likely to comprehend the second statement earlier in development than the first. The second relies on simple actions (the lived experiences of "lie" and "close") and concrete objects (bed, eyes), which the developing brain has apprehended first. The same child will likely grasp the meaning of the former abstract statement following more development, making sense of the former by relying on understanding of the latter.³ The brain is wired to grasp new or complex concepts by mapping them onto older, more intuitive schemas. Pinker elaborates as follows:

I think that metaphor really is a key to explaining thought and language.... Our powers of analogy allow us to apply ancient neural structures to newfound subject matter, to discover hidden laws and systems in nature, and not least, to amplify the expressive power of language itself.⁴

Metaphors are not mere stylistic flourishes; they're fundamental to how we think, communicate, and shape meaning in public thought and discourse. And they're everywhere.

As Lakoff and Johnson argue, “Metaphor is pervasive in everyday life, not just in language but in thought and action.”⁵

METAPHOR AS A TOOL IN EVERYDAY LANGUAGE

The mechanisms that support metaphor—such as recognizing shared context, inferring meaning, and conceiving new usages—are foundational to human communication. This allows for the expression of meanings that could not be reached through direct or literal language alone, greatly expanding the communicative capacity of humans.

Consider the difference between the statements “he seemed down” and “her spirits were up.” The meaning conveyed by these simple prepositions is not merely grammatical; it is metaphorical. The preposition “down” is not only directional, it’s situational, invoking connotations of sadness, whereas “up” suggests positivity or happiness.

More traditionally structured metaphors that connect an abstract notion to a concrete, lived concept, such as, “time is money,” create a host of related metaphorical expressions that help us make sense of the abstract notion of time by comparing it to the concrete experience of money.

- Save time (“It will save us a huge amount of time if we prepare in advance.”)
- Invest time (“We’ve invested a lot of time in building this relationship.”)
- Waste time (“That meeting was a complete waste of time.”)

This reframing feels linguistic, but it’s first cognitive, shaping thought and language patterns that orient someone’s decision-making around how they use—or “spend”—their time.

METAPHOR IN HEALTH AND MEDICINE: ROLES AND RISKS

Because language is rich in metaphor, its presence in health and medicine is inevitable and influential. However, because the stakes are high in this context, we see how metaphor can shape not only understanding but also emotional responses, treatment decisions, and public attitudes, including how overuse or misuse of certain metaphors can lead to clichés, imprecision, or even harm.

In cancer care, for example, the metaphors of “battle” and “journey” are especially prevalent. The battle metaphor frames cancer as an enemy, providing language and thought patterns that can instill hope and agency. Patients and families often speak of “fighting cancer,” “winning the battle,” or “losing the fight.” For some, this framing offers empowerment and a sense of control. However, it can also impose undue pressure, suggesting that unfavorable out-

comes reflect a lack of willpower, and may stigmatize those who do not “win.” The implication that a patient might “lose” a battle they didn’t choose to fight can be deeply distressing. Battle and fight metaphors may also inculcate a fatalistic perspective on cancer diagnosis, negatively impacting others’ willingness to adopt healthy lifestyle practices to prevent cancer.⁶

The journey metaphor, often preferred for its less combative and more accepting tone, emphasizes the individualized and ongoing nature of illness. Expressions such as, “cancer journey,” “navigating treatment,” or “reaching milestones” frame illness as a path with challenges. This metaphor can reduce the pressure to “win” or “lose,” acknowledge a person’s agency, encourage acceptance and reflection, and acknowledge that a person’s “path” with illness is unique, with perhaps an unknown ending. Amid its strengths against the battle metaphor, the journey metaphor is not universally accepted. It may feel passive or disconnected from the urgency of acute illness and may inadvertently evoke feelings of isolation if the experience is seen as a solitary trek. Some may find the journey metaphor vague or sentimental, preferring more concrete or action-oriented language.

These challenges underscore the compulsion for metaphor but also that no single metaphor will resonate with all audiences or fit all situations. The effectiveness of a metaphor, especially in health communication, depends on cultural context, addressing the connotations and denotations of language choices, and the specific circumstances of illness and care.

METAPHOR IN PUBLIC HEALTH: COVID-19 AND VACCINE MESSAGING

The COVID-19 pandemic highlighted both the necessity and the risks of metaphor in public health messaging. As scientists and communicators sought to explain novel technologies like messenger RNA (mRNA) vaccines, a variety of metaphors emerged, each strategically chosen to address specific public concerns or misconceptions.

- Instruction manual and/or blueprint: This metaphor framed mRNA as a set of instructions. It was widely used by organizations such as the World Health Organization⁷ when explaining how certain vaccines “contain the blueprint” for the body to produce an antigen and was also used by health care institutions, such as Yale Medicine⁸ and Children’s Hospital of Philadelphia,⁹ and science news publications.¹⁰
- Snapchat message: By likening mRNA to the popular social media application Snapchat, which uses image- or video-based messages that time out or “disappear,” communicators aimed to counter fears about

permanence or DNA alteration. This metaphor appeared in Yale Medicine’s outreach⁸ and was popularized after a tweet on February 11, 2021, from the Centers for Disease Control and Prevention former director Dr Tom Frieden that said, “mRNA vaccines don’t contain any genetic material of Covid. They’re like a Snapchat message containing a most wanted poster of the virus that disappears after it’s delivered.”

- **Cheat sheet:** This metaphor depicted the vaccine as a reference tool for the immune system, although it risked implying that vaccination is unnatural or a shortcut. The metaphor gained attention after Vlad Mixich, a Romanian public health expert, used it on Facebook to explain why the vaccine cannot modify human DNA. Although vivid and relatable, the term “cheat sheet” risked carrying negative connotations, suggesting dishonesty or artificiality.¹¹
- **Wanted poster:** Outlets such as PBS News¹² and The Washington Post¹³ described the vaccine as a “wanted poster,” training immune cells to recognize the virus as a threat. This metaphor also appears in the aforementioned tweet by Dr Frieden.

It’s reasonable to assume these metaphors were not chosen at random. Each responded to specific misunderstandings or concerns. For instance, the “Snapchat message” metaphor addressed fears about the impermanence of mRNA, countering misinformation about DNA alteration, whereas the “wanted poster” appealed to a visual approach to shape how others understood how immune recognition functions. However, as Lakoff and Johnson caution, metaphors both highlight and hide; they shape what is visible—and what is invisible—in our understanding.⁵ A metaphor that clarifies one aspect may obscure another or carry unintended implications.

The war metaphor, also frequently invoked during the pandemic,¹⁴ emphasized the urgency, rigors of care, and communal solidarity. Yet, it also risked provoking division, casting vaccine-hesitant individuals as adversaries rather than citizens in a shared struggle. Other metaphors, such as likening vaccines to seat belts, fell flat with audiences skeptical of mandates.

These metaphors, and those listed above, found success and failure, with some like the “blueprint” metaphor being more widely adopted, likely due to the concepts implied in “blueprint” being more accessible to wider audiences. This highlights the strategic use of metaphor and the importance of testing metaphors for clarity, resonance, and unintended effect.

CULTURAL AND POLITICAL DIMENSIONS OF METAPHOR

Metaphors do not operate in a vacuum; they are embedded in cultural and political contexts that shape their meaning and impact. During the COVID-19 pandemic, metaphors became key mechanisms of communication for hastening public action and public health and also contributed to competing narratives about risk, responsibility, and collective action. The war metaphor, for example, mobilized public support for emergency measures but also contributed to polarization and fatigue as the crisis dragged on.

Similarly, metaphors of protection (eg, “shielding the vulnerable”) were used to encourage compliance with public health guidelines. However, these metaphors could also obscure structural inequalities, implying that everyone faced the same risks and had the same resources to cope. Critics argued that such language glossed over disparities in exposure, access to care, and economic security.

THE SCIENCE OF METAPHOR EFFECTIVENESS

Recent research in psychology and communication studies has sought to empirically test the effectiveness of different metaphors in health messaging. Studies have found that metaphors can increase comprehension, recall, and persuasion, especially when they align with the audience’s values and experiences. However, metaphors can also backfire if they are perceived as manipulative, patronizing, or irrelevant.

For example, the “cheat sheet” metaphor sought to help create understanding around the mechanism of mRNA vaccines, but it also may have contributed to polarization and unintended negative associations.¹¹ Similarly, as previously discussed, research on cancer metaphors has shown that patients’ preferences vary widely, with some finding the battle metaphor empowering and others finding it distressing.¹⁵

These findings underscore the importance of audience testing and refinement in metaphor use. Health communicators should not assume that a metaphor that works for one group will work for all. Instead, they should seek feedback from diverse audiences and be willing to adapt their language as needed.

PRACTICAL STRATEGIES FOR HEALTH COMMUNICATORS

To use metaphors responsibly and effectively, health communicators should

- **Consult subject matter experts:** Ask other clinicians and researchers about the metaphors they use or have heard used in teaching or patient care. These experts often have valuable insights into which metaphors resonate with patients and which may cause confusion.

- Test with nonexperts: Share metaphors with individuals unfamiliar with the topic to gauge clarity and unintended implications. Audience feedback can reveal whether a metaphor is helpful or misleading.
- Provide context first: Introduce novel metaphors with plain language, using metaphor as scaffolding rather than a substitute for explanation. Clear definitions and explanations help prevent misinterpretation.
- Be sensitive to tone and implications: Consider whether the metaphor frames the issue with compassion, fear, blame, or empowerment. The emotional impact of a metaphor can shape attitudes and behaviors.
- Study past campaigns: Analyze metaphor use in previous public health initiatives, especially those addressing fear, stigma, or uncertainty. Learning from past successes and failures can inform future messaging.

Additionally, communicators should be aware of the potential for metaphors to become outdated or lose their effectiveness over time. Regularly updating language and seeking input from target audiences can help ensure that metaphors remain relevant and impactful.

THE FUTURE OF METAPHOR IN HEALTH COMMUNICATION

As health communication continues to evolve and adapt to the pace, challenges, and connectedness of our digitally integrated world, the role of metaphor will become more important. New technologies, emerging diseases, and shifting cultural norms will require innovative approaches to explaining complex concepts and motivating public action.

Digital platforms offer new opportunities for using metaphor in health communication, from visual metaphors in infographics and videos to interactive simulations and games. At the same time, the rapid spread of information—and misinformation—on social media underscores the need for careful, evidence-based messaging.

Future research should continue to explore the cognitive, emotional, and social effects of metaphor in health communication. Interdisciplinary collaboration among linguists, psychologists, health professionals, and communication experts will be essential for developing best practices and guidelines.

Author declaration and disclosures: *The author does not have any commercial associations that may pose a conflict of interest related to this article.*

Author contact: ben.riggs@ketteringhealth.org

References

1. Pinker S. *The Language Instinct: How the Mind Creates Language*. William Morrow and Company; 1994.
2. Smith ADM, Höfler SH. The pivotal role of metaphor in the evolution of human language. In: JE Díaz-Vera, ed. *Metaphor and Metonymy across Time and Cultures: Perspectives on the Sociohistorical Linguistics of Figurative Language*. De Gruyter Mouton; 2015:123-139. Accessed May 15, 2025. https://dspace.stir.ac.uk/bitstream/1893/22194/1/2015_The%20pivotal%20role%20of%20metaphor%20in%20the%20evolution%20of%20human%20language.pdf.
3. Prado J. The development of the reasoning brain and how to foster logical reasoning skills. International Bureau of Education, Science of Learning Portal. Published 2019. Accessed May 14, 2025. <https://solportal.ibe-unesco.org/articles/the-development-of-the-reasoning-brain-and-how-to-foster-logical-reasoning-skills/>
4. Pinker S. *The Stuff of Thought: Language as a Window into Human Nature*. Viking; 2007.
5. Lakoff G, Johnson M. *Metaphors We Live By*. University of Chicago Press; 1981.
6. Gersema E. Casting cancer as a ‘war’ or ‘battle’ may harm health, study finds. USC Dornsife. Published October 14, 2019. Accessed July 9, 2025. <https://dornsife.usc.edu/news/stories/terms-like-war-on-cancer-may-actually-harm-health/>
7. World Health Organization. How do vaccines work? Published February 25, 2025. Accessed May 18, 2025. <https://www.who.int/news-room/feature-stories/detail/how-do-vaccines-work>
8. Yale Medicine. Understanding COVID-19: how mRNA vaccines work. Published January 25, 2021. Accessed May 9, 2025. <https://medicine.yale.edu/media-player/understanding-covid-19-how-mrna-vaccines-work/>
9. Children’s Hospital of Philadelphia. Are mRNA vaccines a type of gene therapy? Published April 3, 2024. Accessed May 22, 2025. <https://www.chop.edu/parents-pack/parents-pack-newsletter/feature-article-are-mrna-vaccines-type-gene-therapy>
10. Vaschetto L. mRNA: the blueprint of life and its role beyond vaccines. AZoLifeSciences. Last Updated November 5, 2024. Accessed July 9, 2025. <https://www.azolifesciences.com/article/mRNA-The-Blueprint-of-Life-and-Its-Role-Beyond-Vaccines.aspx>
11. Negrea-Busiuc E. ‘Vaccine as a *cheat sheet*’: a metaphor gone awry on Facebook. *Front Psychol*. 2023;14:1198172. doi:10.3389/fpsyg.2023.1198172
12. Isaacs-Thomas B. The powerful technology behind the Pfizer and Moderna vaccines. PBS NewsHour. Published April 2, 2021. Accessed May 20, 2025. <https://www.pbs.org/newshour/health/the-powerful-technology-behind-the-pfizer-and-moderna-vaccines>
13. Johnson CY. There’s still no HIV vaccine. The science behind coronavirus shots may help. The Washington Post. Published June 1, 2022. Accessed May 18, 2025. <https://www.washingtonpost.com/health/2022/06/01/hiv-vaccine-covid-vaccine/>
14. Stone W, Feibel C. The U.S. ‘Battles’ Coronavirus, But Is It Fair To Compare Pandemic To A War? NPR. Published February 3, 2021. Accessed July 9, 2025. <https://www.npr.org/sections/health-shots/2021/02/03/962811921/the-u-s-battles-coronavirus-but-is-it-fair-to-compare-pandemic-to-a-war>
15. Tate T. Your father’s a fighter; your daughter’s a vegetable: a critical analysis of the use of metaphor in clinical practice. *Hastings Cent Rep*. 2020;50(5):20-29.