METAPHORS

FRAMING SCIENCE BRIEF II

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TOPOS Framing Science Briefs help communicators understand the social and cognitive science principles relevant to effective framing, and point them to academic sources where they can read more.

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TOPOS FRAMING SCIENCE BRIEF II: METAPHORS

In the course of a recent speech about foreign policy, Massachusetts Senator Elizabeth Warren said:

> *For decades, the leaders of both parties preached the gospel that free trade was a* rising tide that would lift all boats*. Great rhetoric—except that the trade deals they negotiated mainly* lifted the yachts*, and threw millions of working Americans* overboard to drown*.* (November 29, 2018; emphasis added)

Taken literally—at face value—these statements are odd and even inexplicable. What do tides, boats, yachts and drowning have to do with trade deals?

Of course, English speakers would never ask such questions about the Senator's remarks since she was mainly using common metaphorical ideas and language. We often think of improvements in terms of physical rising; we think of complex causal dynamics as physical forces that can move things; we picture overwhelming problems as bodies of water we can be immersed and drown in. And of course it's easy to understand the economic implications of the distinction between "boats" and "yachts."

This Framing Science Brief focuses on the role metaphors play in communication, particularly about complex topics related to the public interest. Far from being mere rhetorical or literary devices, metaphors can be indispensable tools for conveying intricate and complicated realities in simple, straightforward terms.[1]

Of course, this doesn't necessarily mean that *effective* metaphors are easy to identify.

[1] This Framing Science Brief is adapted from Joseph Grady (2016) "Using metaphor to influence public perceptions and policy; or, how metaphors can save the world," in the Routledge Handbook of Metaphor and Language (Semino & Demjén, Eds.).

GETTING A HANDLE ON COMPLEXITY

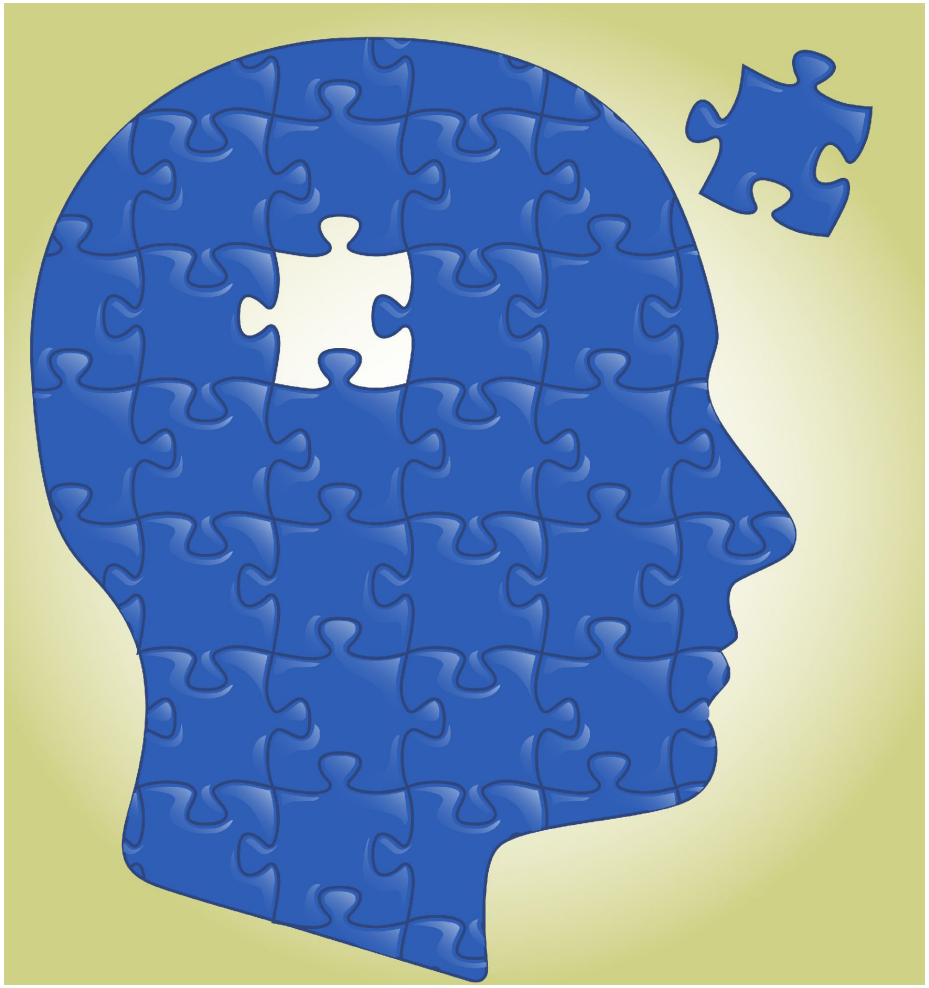
Our work at Topos suggests that, often, what may look like public indifference can better be explained as *cognitive failure*—or, equally relevantly, explanatory failure on the part of communicators. Lay people simply do not understand or "see" a given topic in a way that allows them to appreciate it fully. They may have no clear grasp of the causal dynamics at work, who is affected, what the stakes are more broadly, or how intervention can make a difference. Put briefly, they may simply see no role for themselves on the issue, because they don't see the issue itself clearly.

Many of the forces, phenomena and systems that people must manage and contend with are poor targets for human cognition. Climate dynamics, the development of a child's neural system, ocean ecosystems, economic cause-and-effect, the role of government or labor unions in society, are all examples of topics that are a poor fit with basic modes of human reasoning, which evolved to handle more concrete, direct aspects of experience (physical or social interaction with objects and people, time scales of seconds or minutes—what we have called "everyday action scenarios"). Metaphors create a bridge from "everyday action" thinking to important topics that would otherwise be hard to reason about.

The role of analogies and metaphors in teaching complex science topics to students has been well studied. For instance, the flow of blood through a blood vessel can be thought of as the flow of water in a pipe (see Pontiga and Gaytán 2005, Cameron 2003). Pipes and water are familiar and concrete, they can be interacted with at typical human scales of space and time, and we understand their basic behaviors well.

If communicators are hoping for lay people to participate in deliberation about a complex issue, it should "feel" cognitively more like *water and pipes* than the unseen and less well-understood system of capillaries and other blood vessels.

NOVELTY



Besides making topics "easier to think" in various ways, metaphors can have other advantages, especially if they strike audiences as novel. Many public interest topics have been discussed innumerable times in public forums, to the extent that it can be difficult to attract attention to a seemingly familiar or even clichéd topic, such as the environment. A metaphor that suggests a new way of looking at the topic—for instance, a discussion of the "carbon dioxide blanket" that causes the global climate to change[2]—may have a greater chance of breaking through the noise of chaotic public dialog. And novel metaphors may also help audiences *remember* a new idea better. There is a wealth of research indicating that novelty aids memory (see e.g. Kishiyama and Yonelinas 2003), and novel metaphors may also be memorable because they are *concrete*—another known factor in aiding recall.

[2]See http://blogs.discovermagazine.com/intersection/2006/02/02/learning-to-speak-science/#.XFIKMi3Mz_8 for a brief discussion.

METAPHORS IN THE PUBLIC INTEREST SPHERE

A number of academic researchers have explored the role of metaphor in political and policy discussions. For instance, linguist George Lakoff argues that the common metaphorical identification of a *nation with an individual person* played an important role in justifying bombing raids on Iraq that were destined to kill many civilians:

> *Ordinary American citizens are using this metaphor when they say things like "Saddam is a tyrant. He must be stopped." What the metaphor hides, of course, is that the three thousand bombs to be dropped in the first two days [of a U.S.-led assault on Iraq] will not be dropped on that one person. They will kill many thousands of people hidden by the metaphor...* (Lakoff 2004, p. 69)

In an influential 1979 article, philosopher Donald Schön argued that the definitions of social problems—which in turn strongly affect how we act on those problems—are often metaphorical. For instance, the various social services offered by a town or state may be viewed as "fragmented" from one metaphorical point of view (i.e. "something like a vase that was once whole and now is broken"), or alternatively as "autonomous." "Under the spell of the metaphor," Schön notes, "it appears obvious that fragmentation is bad and coordination, good."

Experimental evidence has confirmed that metaphors for public interest topics lead to particular understandings, and implications for action. Experimentalists Thibodeau and Boroditsky (2011) showed people nearly identical paragraphs about crime—differing by only a single metaphorical word, virus vs. beast—and found that the metaphor choice led to significantly different policy preferences, greater than the differences between Republicans and Democrats, for instance! (Those who read that "Crime is a beast ravaging the city of Addison" supported harsher law enforcement, while those who read that "Crime is a virus ravaging the city of Addison" preferred preventive policies related to poverty and education.)

In our own experience, Topos has found various metaphors helpful for engaging interest and aiding understanding on a range of public interest issues. For example, plumbing isn't just a good analogy for the blood system; people can also understand policies and policy decisions as "pipes" that end up directing the flow of money in one direction or another, building on the common idea of money as a fluid—as in usages like "cash flow" and "liquidity."

In research on how to best convey the significance and value of the arts, we found that a particularly helpful metaphorical idea is the image of the "ripple effect" of community benefits from arts establishments in a neighborhood. For instance, theaters, galleries, and other arts ventures create greater vitality, making communities more attractive and ultimately more prosperous. This prosperity can be seen to radiate outward from an arts venue throughout the surrounding neighborhood, just as ripples spread outward across the surface of a pond.

METAPHORS AREN'T MAGIC

Not all metaphors are successful, in terms of changing people's understandings and motivations. Sometimes, they just don't have a significant effect.

Following the study about metaphors for crime, mentioned earlier, Shinohara et al. (2012) tested the effects of two different metaphorical terms on beliefs about genetically modified organisms, and food containing GMOs. In this instance, the researchers found no significant results—demonstrating that we cannot simply assume that a given metaphor will have guaranteed effects on reasoning.

At other times, one metaphor swamps another. In our experience talking to scores of Americans about climate change, many have immediately thought of a "hole in the ozone layer" rather than the "greenhouse effect." The second is a far more accurate understanding of the science involved, but the familiar and concrete "hole in the roof" concept is far more broadly grasped, and has usually trumped the scientifically more helpful image.

Finally, it is easy for metaphors to fail because they are sometimes dismissed as ornamental language—at best unnecessary, and at worst intended to obfuscate or confuse. In research on a variety of topics, Topos has found that candidate metaphors for introducing new understandings are sometimes simply ignored in favor of more literal expressions of the same basic point.

IMPLICATIONS

The bottom line for real-world communicators is the demonstrable effectiveness of a given metaphor for advocates to use in their communications. And that can only be determined empirically, by testing the metaphor with real people. At Topos, finding the right metaphor for a given issue is like being in Thomas Edison's lab: Metaphors regularly undergo trials with study participants to see if they work—e.g. do people easily get how the metaphor corresponds to the real world issue? We also look at whether a metaphor leads to appropriate entailments and inferences. More subtle considerations include:

- **Reification:** Metaphors are often more effective when they involve treating a phenomenon as though it were a concrete, definable *thing*.
- **Imageability:** Metaphors are more easily grasped when they can easily be seen in the "mind's eye."
- **Terms of art:** Metaphors may have particular impact when presented as established language used by experts, and that the public audience might want to learn (e.g. the "arts ripple effect," referring to how arts institutions in a neighborhood create vibrancy and social connections with benefits far beyond their own walls).

Whatever their characteristics, well-chosen metaphors, proven to have communicative power, may be one of communicators' most effective tools for promoting positive change.

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