A FrameWorks Institute eZine

Can't I Just Invent My Own Metaphors? Why Research Matters in Developing Metaphorical Models

For some time, *FrameWorks* has been developing simplifying models for its projects, identifying this as an important frame element. Simplifying models are brief user-friendly explanations of complex processes or constructs -– sometimes they capture a mechanism, like how global warming is produced or how children develop. In this way, simplifying models allow a lay public to actively engage with the perspectives of experts. The simplifying models that result from *FrameWorks* investigations can be shown to further public understanding of a social problem. *FrameWorks* researchers work with many elements of language to develop simplifying models, but a major research focus has been on metaphors. We work with metaphors in two primary ways. First, we analyze the metaphors that people use to describe, explain and reason about an issue. Second, we propose and test new metaphorical models that advocates might use to communicate with the public about that issue.

Our partners have found the focus on and development of metaphorical models to be a useful addition to the array of frame elements that can help people imagine a social issue in new ways. At times, however, the advocates we work with find that the metaphorical models we suggest do not resonate with them. They tell us: "I don't really like the metaphorical models that *FrameWorks* has identified. Can't I just invent a better metaphor to get people to think about my issue?"

When we imagine how people invent metaphors, we often think of a writer working alone at her desk, imaginatively and creatively using language to inspire vivid images in the minds of her readers. Creative metaphors can allow writers to invoke new ways of thinking about familiar topics and allow readers to grasp unfamiliar ideas. The *FrameWorks* approach to metaphorical models also works to inspire new ways of thinking about a social issue and aids public engagement with scholarship and research of experts and insiders. In contrast to the creative writers, however, when *FrameWorks* researchers work with metaphorical models, they approach metaphors from theory and research developed in the cognitive and social sciences. This approach to metaphors differs from the more humanities-based invention of metaphors precisely because of our use of replicable and verifiable methods to test the impact of the new metaphor on people's understanding of the problem definition and their enhanced openness to policy

solutions. That is, *FrameWorks* researchers are interested in studying, through methods developed in the cognitive and social sciences, how those metaphors will be processed and understood to resolve social problems.

This eZine describes the *FrameWorks* approach to working with metaphorical models and identifies the issues advocates need to think about before working with and inventing new metaphors. There are a number of questions that advocates must ask themselves when they are thinking about working with new metaphors: What is the relationship between your new metaphor and existing metaphors that people use to reason and think about a social problem? How will people process your new metaphor or use it to make sense of a specific issue? What are the elements of your metaphor? What might be the impact or consequences of that metaphor on future action and behavior? In this eZine, I quickly review the definition of metaphors, why they are a useful part of language, and why they are interesting to scientists. I then review some of the scholarship that informs *FrameWorks'* research on metaphorical models and how this research helps *FrameWorks* researchers to answer the questions listed above.

What are metaphors and why do scientists study them?

Merriam Webster defines metaphor as "a figure 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 between them (as in *drowning in money*)." A metaphor establishes a relationship between two subjects or domains. Using a metaphor typically implies that the first or *source* domain, to use the terminology of Lakoff and Turner (1980), is the same or equal to a second or *target* domain in some manner. In the example provided by Merriam Webster, the source domain is the act of drowning while the target is having enormous amounts of money or wealth. The target domain can be described and mentally processed quickly and economically because the attributes from the source domain are used to enhance the description and understanding of the target domain. Let's consider how this works with our metaphor "drowning in money." While having lots of money is often thought of as a positive attribute in American culture, comparing a person's wealth to drowning invokes an overwhelming, debilitating and generally negative relationship with wealth. This metaphor allows the reader to understand that the person being described does indeed have lots of money, but that s/he might be incapacitated in some way by it – practically, socially, mentally, etc. The important thing about metaphors is that all of this information—all of the images and ideas that we can interpret from this metaphor—are captured in a simple and short phrase "drowning in money."

Metaphors are interesting because they are examples of creative and brilliant uses of language, but they also tell us something about how we think, how we communicate with each other, and how we develop common understandings of our world. They are therefore a point of interest not only to people who study literary works. How and why people make connections between two seemingly dissimilar domains—like having enormous wealth and the act of drowning—has been a central research focus of cognitive scientists or those who study how the human mind works. It has also been the focus of

social scientists, particularly those who study the relationship between language and culture and how cultures and social groups work. Both of these literatures inform how *FrameWorks* researchers determine what kinds of metaphors will lead to successful communication strategies about pressing social problems.

Metaphors and the Cognitive and Social Sciences

Cognitive scientists study many facets of how we think. One central question that cognitive scientists address is how do people process and assimilate all of the new information they constantly take in? In other words, how do we learn about new things and new concepts? The relationships we establish in our minds between two domains when we use and comprehend metaphors have been an important way that cognitive scientists have answered these questions. In other words, metaphors are not only important to get us to think and imagine in new ways, but are central to how we think and learn.

Cognitive scientists have shown that thinking with metaphors and analogies allows people to create maps in their minds. These maps establish relationships in one domain of experience. With those maps in place, they are able to use them to interpret and draw new inferences about how things might work in another domain (Flannagan, Fried, and Holyoak 1986; Fried and Holyoak 1984; Gentner 1983; Gentner and Holyoak 1997; Gentner, Holyoak, and Kokinov 2001; Gentner, Loewenstein, and Thompson 2003; Gentner and Markman 1997; Holyoak and Thagard 1997; Hummel and Holyoak 1997). For example, people make inferences about unfamiliar people based on their similarity to other people they know. New problems are solved based on past experiences solving similar problems (Holyoak and Thagard 1997). These maps that are based on metaphorical thinking are very durable; once a map has proven effective it can be difficult to change. *FrameWorks* sometimes refers to this as the "stubbornness" of metaphorical reasoning.

People use mental maps to think about all kinds of things and solve all sorts of problems including problems in the physical world as well as invisible and conceptual processes. Through mostly experimental research, cognitive scientists have documented how these mental processes work. Hayes (1985), for example, presented study participants with possible states of liquids in space like liquids in a container, liquids on a flat surface, and liquids moving through a confined space. He then studied how participants reasoned about what happens to milk when poured on a table without seeing the milk being spilled. Past experiences and the information provided to the participants about liquids allowed them to create the maps needed to think about what happens when milk is poured on a table. Their minds literally "filled in" the missing information, drawing from the mental map of past experience.

In another study, Collins and Gentner (1987) examined how non-experts and lay people understand processes of evaporation. They gave study participants various models of how evaporation works—these models were the source analogies. Participants were then asked questions about evaporation and asked to explain in detail their

reasoning on each question. The researchers found that reasoning patterns were tightly linked with the models of evaporation that each participant was given prior to the questioning. Like Hayes' study of liquids, the models of evaporation in effect created the maps in people's minds about evaporation.

Metaphors are also used to help people grasp the meaning of concepts. For example, Lakoff and Koveces (1987) studied how American English speakers talked about and conceptualized anger. They found that a dominant metaphor was that of hot liquids in a container (i.e. someone needs to blow off steam). This image lets people reason about how emotions work in the body (we might say he reached his boiling point) and what happens to people when people get angry (he blew his lid).

Finally, cognitive scientists not only show us how people think using metaphors and analogies. They have also developed methods and theories that allow them to explain, predict and demonstrate how well a metaphor will work. That is, they have shown that the elements of metaphors are critical when people use a metaphor to reason about a new domain. Lakoff and Johnson (1980) argue the source domain of a metaphor is typically drawn from the physical world in order to explain the target domain from the nonphysical world. Metaphors drawn from the physical world allow people to create images in their minds and map them onto nonphysical things. Scientists working in developing artificial intelligence have been conducting important research about predicting how well metaphors will work. Hummel and Holyoak's (1997) research, for example, shows the more explicit the relationships are between elements in an analogy, the stronger the inference or generalization to the target domain will be.

Metaphors are not only interesting because they tell us something about how the brain processes new information. Metaphors are also a central research focus because they are widely shared by people of a social, cultural and linguistic group. I can write that someone is drowning in money and can confidently assume that readers will understand the metaphor with very little additional information. Social scientists study metaphors because they are an extremely common form of speech. Paying attention to the metaphors that people use is an important window into cultural knowledge as well as core beliefs and values of a social group. Research on metaphorical language, therefore, is also is a way to study how culture works and how people communicate with each other economically and efficiently.

Social scientists show that metaphors that we use are collective—the maps that they create are not specific to an individual but shared by a cultural group. They are also important clues about how people might act, behave, the choices they make in their everyday lives, as well as how they make meaning of their worlds. Quinn's (2005) study of Americans' shared understandings of marriage, for example, shows what social scientists can learn from people's use of metaphors. After repeatedly interviewing people about marriage, she catalogues all uses of metaphor that people used to talk and think about marriage. Among other findings, Quinn found that the domain of economic investment was a key source for the ways that her participants thought about marriage. Her interviewees talked about their partner's "assets" and the mutual benefits that come

out of marriage in ways that we talk about business partnerships and transactions. The consistent use of this metaphor revealed important aspects of American values about marriage. It also served to predict how people might act and behave in their marriages. For example, when a marriage ceases to be experienced as a partnership in which both parties are mutually benefiting, this might be expected to be the point when the marriage is dissolved. Understanding the metaphors people use to describe a phenomenon and why they use those metaphors points to their motives and can shed some light on why people decide on specific courses of action.

How should advocates work with metaphors?

How does this research pertain to advocates working on issues of social justice who want to make a case for particular policies by harnessing the power of metaphorical models? Research in the cognitive and social sciences has illuminated how and why people think with metaphors. *FrameWorks* researchers utilize a multi-staged research process when working with metaphors that is based on many of the lessons gleaned from the cognitive and social scientific research on metaphors. This section describes those lessons and the specific research strategies that *FrameWorks* has developed to work effectively with metaphorical models.

Lesson and questions from existing research: Metaphors conjure maps and images in peoples' minds about the way things work and how they could work in another domain. These maps are relatively durable and stable. Advocates working with metaphors need to be aware of the maps that are already in people's heads about an issue. What are the metaphors that people are already using to think about the issue?

FrameWorks approach: Through one-on-one cognitive interviews, as well as small group discussions or focus groups, the first step *FrameWorks* takes in working with metaphorical models is to identify the dominant metaphors (as well as other aspects of frames) that people are already using to explain, reason and think about the research topic. Our interviews and focus groups are designed to allow participants to talk at length about an issue. In these research encounters, we are interested not in what people know but how they know – the pattern of their reasoning about a particular issue. As part of this analysis, we extract the metaphors that people use to talk and think about the problem. We then map and analyze the metaphors that people are using and begin to develop new models from these findings.

For example, in our research about how people think about the role of government, we found that two contradictory metaphors dominated thinking. A diverse sample of Americans talked in-depth about the government as a single entity that represented the mind of the country, or as equivalent to elected leadership. The other metaphor that people used was government as monolith or an overwhelming bureaucracy and a passive "thing" (for more on this, see *FrameWorks*' MessageMemo on "How to Talk Government"). The crucial point about both of these metaphors is that, although quite different, both precluded people's ability to imagine themselves as having impact or

being a part of the government. Understanding the dominant metaphors and the consequences of these patterns of thinking was a crucial step before proposing, testing and introducing new ways that people might think about the government, and especially their own roles and agency within their government.

Lessons and questions raised from existing research: Cognitive and social scientists have also studied how the elements of a metaphor will impact how people reason and think about the target domain. They have shown that examples from the physical world are more effective especially when people are learning about or thinking in new ways about abstract concepts and issues. They have also shown that the more explicit the metaphor, the easier it is to reason about the unfamiliar domain. Research in the social sciences has shown that metaphors are more effective when they express a shared understanding and when they resonate with people's experiences.

Once advocates have identified a metaphor that they feel has effective explanatory power, they need to test how it works. Does the new metaphor resonate with the personal everyday experiences of the target audience? Or is the new metaphorical model too abstract or too distant from the lives and experiences of the audience? Of equal importance, how do people reason about a given problem once the new metaphor is introduced? Does the metaphor allow them to think about collective solutions, such as policies, as opposed to individual actions?

FrameWorks approach: FrameWorks has worked with several methods for testing the efficacy of new metaphors with its research partners. One approach is "TalkBack Testing" which includes interviews and small groups where study participants are given short texts that include new metaphorical models. We measure the impact of these models by examining if the study participants are able to remember the model, repeat it, explain it and use it in another context. This approach allows us to investigate whether or not the model will enter broader discussions of the issue (is "viral") and if it will lead to positive impacts on thinking and making decisions about the issue.

For example, in our study of how issue advocates might change entrenched and discriminatory thinking about race, we tested several metaphorical models that might impact mainstream (or white) America's views. Our goal was to address the "cognitive blindness" to structural racism that is typical of American thinking about race. We tested two metaphors that allowed the public to talk about how race structures economic, social and political opportunities: one was a "prosperity grid" and the other a "prosperity network." Although very similar, we found that the metaphor of a "prosperity grid" allowed participants to think about how different <u>access</u> to institutions that offer economic support impacts economic well-being; white people have had better access to those institutions in comparison to people of color. "Prosperity networks" were often conflated with social networks by our study participants, which allowed them to revert to more personal, rather than structural, explanations of racialized economic disparities. These two metaphors were very similar, yet the impact on thinking about structural racism was markedly different (for more on this research, see *FrameWorks*

MessageMemo on race). Again, the key to identifying the most effective communications strategy was through exhaustive and rigorous research.

Conclusion

In *FrameWorks*' view, our focus on metaphors has proven effective for developing new communication strategies. Metaphors reveal what people are thinking but more importantly how they are thinking. New metaphors can also provide simple and economic ways to talk about an issue with a lay audience. The most important part of how *FrameWorks* works with metaphors is that we adopt research methods employed in both the cognitive and social sciences. The point of this eZine is not to dissuade advocates from using and adapting metaphors, but rather to underscore the importance of getting the metaphor right; we see this as an empirical issue. By using an array of iterative research methods, we can tell advocates what works and why it works. This is not to inhibit creativity, but rather to ensure that that creativity yields benefits for the precise social policies that advocates wish to help people to see.

About FrameWorks Institute: The FrameWorks Institute is an independent nonprofit organization founded in 1999 to advance science-based communications research and practice. The Institute conducts original, multi-method research to identify the communications strategies that will advance public understanding of social problems and improve public support for remedial policies. The Institute's work also includes teaching the nonprofit sector how to apply these science-based communications strategies in their work for social change. The Institute publishes its research and recommendations, as well as toolkits and other products for the nonprofit sector at www.frameworksinstitute.org.

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