Thinking literally

The surprising ways that metaphors shape your world

By Drake Bennett, Globe Staff  |  September 27, 2009

WHEN WE SAY someone is a warm person, we do not mean that they are running a fever. When we describe an issue as weighty, we have not actually used a scale to determine this. And when we say a piece of news is hard to swallow, no one assumes we have tried unsuccessfully to eat it.

These phrases are metaphorical--they use concrete objects and qualities to describe abstractions like kindness or importance or difficulty--and we use them and their like so often that we hardly notice them. For most people, metaphor, like simile or synecdoche, is a term inflicted upon them in high school English class: "all the world's a stage," "a house divided against itself cannot stand," Gatsby's fellow dreamers are "boats against the current, borne back ceaselessly into the past." Metaphors are literary creations--good ones help us see the world anew, in fresh and interesting ways, the rest are simply cliches: a test is a piece of cake, a completed task is a load off one's back, a momentary difficulty is a speed bump.

But whether they're being deployed by poets, politicians, football coaches, or realtors, metaphors are primarily thought of as tools for talking and writing--out of inspiration or out of laziness, we distill emotions and thoughts into the language of the tangible world. We use metaphors to make sense to one another.

Now, however, a new group of people has started to take an intense interest in metaphors: psychologists. Drawing on philosophy and linguistics, cognitive scientists have begun to see the basic metaphors that we use all the time not just as turns of phrase, but as keys to the structure of thought. By taking these everyday metaphors as literally as possible, psychologists are upending traditional ideas of how we learn, reason, and make sense of the world around us. The result has been a torrent of research testing the links between metaphors and their physical roots, with many of the papers reading as if they were commissioned by Amelia Bedelia, the implacably literal-minded children's book hero. Researchers have sought to determine whether the temperature of an object in someone's hands determines how "warm" or "cold" he considers a person he meets, whether the heft of a held object affects how "weighty" people consider topics they are presented with, or whether people think of the powerful as physically more elevated than the less powerful.

What they have found is that, in fact, we do. Metaphors aren't just how we talk and write, they're how we think. At some level, we actually do seem to understand temperament as a form of temperature, and we expect people's personalities to behave accordingly. What's more, without our body's instinctive sense for temperature--or position, texture, size, shape, or weight--abstract concepts like kindness and power, difficulty and purpose, and intimacy and importance would simply not make any sense to us. Deep down, we are all Amelia Bedelia.

Metaphors like this "don't invite us to see the world in new and different ways," says Daniel Casasanto, a cognitive scientist and researcher at the Max Planck Institute for Psycholinguistics in the Netherlands. "They enable us to understand the world at all."

Our instinctive, literal-minded metaphorizing can make us vulnerable to what seem like simple tweaks to our physical environment, with ramifications for everything from how we build polling booths to how we sell cereal. And at a broader level it reveals just how much the human body, in all its particularity, shapes the mind, suggesting that much of what we think of as abstract reasoning is in fact a sometimes awkward piggybacking onto the mental tools we have developed to govern our body's interactions with its physical environment. Put another way, metaphors reveal the extent to which we think with our bodies.

"The abstract way we think is really grounded in the concrete, bodily world much more than we thought," says John Bargh, a psychology professor at Yale and leading researcher in this realm.

Philosophers have long wondered about the connection between metaphor and thought, in ways that occasionally presaged current-day research. Friedrich Nietzsche scornfully described human understanding as nothing more than a web of expedient metaphors, stitched together from our shallow impressions of the world. In their ignorance, he
charged, people mistake these familiar metaphors, deadened from overuse, for truths. "We believe that we know something about the things themselves when we speak of trees, colors, snow, and flowers," he wrote, "and yet we possess nothing but metaphors for things--metaphors which correspond in no way to the original entities."

Like Nietzsche, George Lakoff, a professor of linguistics at the University of California at Berkeley, and Mark Johnson, a philosophy professor at the University of Oregon, see human thought as metaphor-driven. But, in the two greatly influential books they have co-written on the topic, "Metaphors We Live By" in 1980 and "Philosophy in the Flesh" in 1999, Lakoff and Johnson focus on the deadest of dead metaphors, the ones that don't even rise to the level of cliche. They call them "primary metaphors," and they group them into categories like "affection is warmth," "important is big," "difficulties are burdens," "similarity is closeness," "purposes are destinations," and even "categories are containers."

Rather than so much clutter standing in the way of true understanding, to Lakoff and Johnson these metaphors are markers of the roots of thought itself. Lakoff and Johnson's larger argument is that abstract thought would be meaningless without bodily experience. And primary metaphors, in their ubiquity (in English and other languages) and their physicality, are some of their most powerful evidence for this.

"What we've discovered in the last 30 years is--surprise, surprise--people think with their brains," says Lakoff. "And their brains are part of their bodies."

Inspired by this argument, psychologists have begun to make their way, experiment by experiment, through the catalog of primary metaphors, altering one side of the metaphorical equation to see how it changes the other.

Bargh at Yale, along with Lawrence Williams, now at the University of Colorado, did studies in which subjects were casually asked to hold a cup of either iced or hot coffee, not knowing it was part of the study, then a few minutes later asked to rate the personality of a person who was described to them. The hot coffee group, it turned out, consistently described a warmer person--rating them as happier, more generous, more sociable, good-natured, and more caring--than the iced coffee group. The effect seems to run the other way, too: In a paper published last year, Chen-Bo Zhong and Geoffrey J. Leonardelli of the University of Toronto found that people asked to recall a time when they were ostracized gave lower estimates of room temperature than those who recalled a social inclusion experience.

In a paper in the current issue of Psychological Science, researchers in the Netherlands and Portugal describe a series of studies in which subjects were given clipboards on which to fill out questionnaires--in one study subjects were asked to estimate the value of several foreign currencies, in another they were asked to rate the city of Amsterdam and its mayor. The clipboards, however, were two different weights, and the subjects who took the questionnaire on the heavier clipboards tended to ascribe more metaphorical weight to the questions they were asked--they not only judged the foreign currencies to be more valuable, they gave more careful, considered answers to the questions they were asked.

Similar results have proliferated in recent years. One of the authors of the weight paper, Thomas Schubert, has also done work suggesting that the fact that we associate power and elevation ("your highness," "friends in high places") means we actually unconsciously look upward when we think about power. Bargh and Josh Ackerman at MIT's Sloan School of Business, in work that has yet to be published, have done studies in which subjects, after handling sandpaper-covered puzzle pieces, were less likely to describe a social situation as having gone smoothly. Casasanto has done work in which people who were told to move marbles from a lower tray up to a higher one while recounting a story told happier stories than people moving them down.

Several studies have explored the metaphorical connection between cleanliness and moral purity. In one, subjects who were asked to recall an unethical act, then given the choice between a pencil and an antiseptic wipe, were far more likely to choose the cleansing wipe than people who had been asked to recall an ethical act. In a follow-up study, subjects who recalled an unethical act acted less guilty after washing their hands.

To the extent that metaphors reveal how we think, they also suggest ways that physical manipulation might be used to shape our thought. In essence, that is what much metaphor research entails. And while psychologists have thus far been primarily interested in using such manipulations simply to tease out an observable effect, there's no reason that they couldn't be put to other uses as well, by marketers, architects, teachers, parents, and litigators, among others.

A few psychologists have begun to ponder applications. Ackerman, for example, is looking at the impact of perceptions of hardness on our sense of difficulty. The study is ongoing, but he says he is finding that something as simple as sitting on a hard chair makes people think of a task as harder. If those results hold up, he suggests, it might make sense for future treaty negotiators to take a closer look at everything from the desks to the upholstery of the places where they
meet. Nils Jostmann, the lead author of the weight study, suggests that pollsters might want to take his findings to heart: heavier clipboards and heavier pens for issues that they want considered answers for, lighter ones for questions that they want gut reactions on.

How much of an effect these tweaks might have in a real-world setting, researchers emphasize, remains to be seen. Still, it probably couldn't hurt to try a few in your own life. When inviting a new friend over, suggest a cup of hot tea rather than a cold beer. Keep a supply of soft, smooth objects on hand at work--polished pebbles, maybe, or a silk handkerchief--in case things start to feel too daunting. And if you feel a sudden pang of guilt about some long-ago transgression, try taking a shower.

Drake Bennett is the staff writer for Ideas. E-mail drbennett@globe.com.