

## A PIECE OF MY MIND

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## The Evidence-Based Metaphor

**"Grace and I are trying** to keep the vaccines minimal for Annie, if we can."

Jeremy, the man sitting in front of me, is tall, slender, and politely tattooed. Despite appearing distinctly well rested, he's every bit the new parent: exhilarated and, equally, terrified.

"There are just so many of them," he says. "I was concerned about overloading her system."

It's a situation that many pediatricians encounter on a regular basis: a parent who is resistant to the idea of childhood vaccinations for a son or daughter. The only difference here is that Jeremy isn't really an anxious parent but a standardized patient—an actor trained to re-create this scenario—and I'm not a physician but a medical student. We're in the midst of an OSCE, an "objective structured clinical examination," designed to train medical students in the real-life practice of medicine.

Sitting in a perfect replica of an examination room, wearing a white coat and stethoscope, I'm tasked with changing Jeremy's mind. I launch into my carefully prepared talking points, explaining that vaccines are remarkably safe and effective, that they won't overstrain his daughter's immune system. The vaccine we're discussing doesn't even contain living virus, I tell him.

"It's more like a fingerprint of the germ," I explain. "When Annie's body sees it, she learns to recognize that tiny fragment so she can attack it if she ever encounters it again."

Later, in the debriefing, Jeremy reviews the case with me, providing lengthy feedback on everything from eye contact and posture to professionalism.

"I've done this scenario hundreds of times," he says, finally, "and I've heard a lot of explanations of how vaccines work. I thought the fingerprint analogy worked well."

This statement came almost as an afterthought, a high note to close the encounter. Yet as I left the examination, I began to wonder about the hundreds of other medical students stretching back through the years, each armed with their own individual script, each trying to accomplish the same task with different metaphors. Just how dissimilar were our explanations?

Curious, I asked around. One of my classmates had described the vaccine as a "personal trainer" for the immune system, "pumping up" the patient's natural immunity. Another portrayed vaccination as a kind of insurance policy against future illness. In a case where we had all carefully memorized the same statistics, cellular pathways, and adverse effects, it occurred to me that our patient explanations seemed wildly, and perhaps unwisely, variable.

Metaphor and analogy are necessary mainstays in medicine. Starting in medical school—where we learn to recognize strawberry tongues, barking seal coughs, and

apple-core lesions of the colon—physicians frequently use vivid and creative imagery to describe disease processes. For medical students, these descriptions serve as whimsical mnemonics (once you've seen one strawberry tongue, it's said, you'll never forget it). In clinical practice, however, such comparisons are often a useful and necessary component of the physician-patient dialogue. With appointment times creeping ever shorter, a physician may have only moments to explain a complicated scientific concept to his or her patient in a way that is both clear and memorable. Metaphors are immediately relatable, drawing as they do on the commonplace to express the complex or, as Oliver Sacks wrote, to "make the strange familiar." This is undoubtedly why physicians use them so frequently; a 2010 study of oncologists found 268 examples of metaphor and analogy in just 101 patient conversations.<sup>1</sup> Notably, in this study, physicians who made frequent use of analogy were rated as better communicators by their patients, suggesting that figurative language can be valuable in clinical practice.

But not all metaphors are created equal. A vaccine is more analogous to an insurance policy than it is to, say, a bowl of petunias. Yet virtually no consideration is given in medical school, or in health care as a whole, to exactly which metaphors ought to be used. There seems to be a prevailing view that while physicians may, according to their tastes, use *different* figures of speech, one is not inherently better or worse than the next (or if it is, it's impossible to know which is which). The study of oncologists, for example, found metaphors ranging in theme from militaristic (eg, cancer as an invading army), to sport themed (eg, treatment as a marathon), to agricultural (eg, stem cells as seeds), to animal inspired (eg, bone marrow as an elephant that never forgets). Should the framing of these important conversations be left entirely to the whims of individual physicians?

We implement evidence-based medicine, so why not evidence-based communication?

The particular words used to describe an illness can fundamentally alter patients' experiences and behaviors. In a study of patients with breast cancer, women who reportedly saw their illness as an "enemy" (a mindset prompted, perhaps, by militaristic metaphors) were found to have higher levels of depression and anxiety and a poorer quality of life than those who assigned more positive descriptors like "journey" or "challenge" to their experience.<sup>2</sup>

Similarly, a 2014 study found that people who believe their depression is caused by a "chemical imbalance" rather than by complex psychosocial factors are more likely to see themselves as "essentially" depressive; they tend to expect a worse prognosis, to rely more heavily on drugs, and to be less likely to engage in

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psychotherapy, seeing this approach as irrelevant to their purely biogenetic illness.<sup>3,4</sup>

Metaphors have significance for health policy too. When discussing child development, using a "scale" metaphor—explaining that early childhood adversity can be "counterbalanced" by positive relationships and support—was found to significantly improve public understanding and support for early intervention policies. Meanwhile, describing childhood resilience as an inherent trait, with some children as hardy "dandelions" and others as fragile "orchids," caused no improvement of public understanding and, in some cases, even triggered the negative assumption by study participants that any attempt at intervention would be futile.<sup>5</sup>

The impetus of the last several decades has been toward *more* communication between physicians and patients, a rebuke to the impassive or harried physician of the sort immortalized in Margaret Edson's *Wit*. The goal of these efforts was an open dialogue, the creation of a so-called health-literate public, and the ushering in of a new era of shared decision making between physician and patient.

As many physicians recognize, however, simply passing along information, attempting to "correct" the issue of a public who knows too little science, can sometimes be ineffective when it comes to bringing about changes in behavior and attitudes.<sup>6-8</sup> Knowledge is important, but not always sufficient.

The next push within medicine should move beyond the simple transfer of information, to focus instead on promoting entire ways of thinking. Metaphors may nudge patients not only to understand illness, but to conceptualize it in ways that can lead to beneficial

health behaviors and attitudes (at least, beneficial from the perspective of the physician or public health policy maker). Research on medical metaphors, though largely confined at present to cognitive psychology and the social sciences, should be translated into clinical practice.

Many of the biggest challenges facing medicine today, issues like promoting adherence or encouraging lifestyle changes, hinge on successful communication. How much more effective could the next cohort of physicians become if equipped not only with scientific knowledge but also with empirical communication tools? What if, instead of a medley of vaccine analogies of varying efficacy, patients like Jeremy heard only tried and tested messages from the medical community?

There will never be just one "right" way of explaining illness. Things like tone, gesture, cultural background, and personal experience will have at least as much influence over how someone interprets a given metaphor as the words themselves. In the absence of an evidence-based approach, however, physicians may be missing out on a powerful clinical tool or, worse, using metaphors that are unintentionally harmful or counterproductive in their long-term effect on patient behavior or public health.

Throughout medical school, much is made of the importance of using research to optimize decisions about patient care. When evidence shows that one treatment is more effective than another, physicians incorporate this knowledge into practice. We strive to make conscious, empirical decisions on everything from drug dosing and treatment modalities to medical education and health policy. We should be just as rigorous with our words.

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