

Science Talk: Discovery and Debate

By Daniel M. Wegner

There are two ways to talk about science. One is a language of discovery (Eureka!) the other a language of debate (Victory!). Each one captures a truth about science. But when it comes to science writing, discovery trumps debate every time. Here's why.

Discovery and Debate

Discovery talk is about exploring and looking and suspecting and learning, full of images of science as a search. We think of Galileo gazing into the heavens to see what no one had seen before. Images arise of truth-seekers through the ages, of Newton, Faraday, Edison, Pasteur, Curie, each entranced by the search for knowledge. Discovery talk produces visions of light bulbs going on over our heads.

Debate talk is about claiming and arguing and maintaining and holding, a

language that captures science as a struggle of competing views. We think of Galileo incarcerated by the Pope for his rejection of geocentric theory, taking a stand and then suffering in its

Discovery talk is about exploring and looking and suspecting and learning, full of images of science as a search.

defense. Science in this light is value-laden and personal, a battle with other scientists in their roles as reviewers and editors, or a confrontation with the press, or for that matter, a hasty retreat from villagers wielding pitchforks.

Which is the real language of science? Well obviously, both languages describe parts of the animal. Science does involve finding things out, as well as pressing for one's personal views. The social pursuit of knowledge needs

both. A discovery not proposed and defended might as well never have been found. And a fight that is joined without any basis in discovery would soon devolve into pointless bickering.

Science Between the Lines

Still, each of these languages brings with it a special flavor, a "take" on science that carries unspoken

Debate talk is about claiming and arguing and maintaining and holding, a language that captures science as a struggle of competing views.

implications. Considered in this light, the language of discovery is much more convincing.

(Continued on page 11)

Discovery Words

Suspect (We suspect that...)
 Find (I found...)
 Learn (We learned that...)
 Possibility (It is possible that...)
 Suggest (We suggest...)
 Indicate (The findings indicate...)
 Idea (Our idea is...)
 See (We can see that...)
 Expect (We expect to find that...)
 Wonder, ask, explore, hypothesize,
 observe, measure, test, track,
 reveal, investigate, conceive,
 check, look, uncover, examine...

Debate Words

Argue (We argue that...)
 Show (I showed...)
 Maintain (We maintain that...)
 Position (Our position is that...)
 Claim (We claim...)
 Demonstrate (The findings demonstrate...)
 Point (Our point is...)
 Hold (We hold that...)
 Hope (We hope to find that...)
 Defend, attack, oppose, conjecture,
 condemn, criticize, counter, reply,
 agree, disagree, surrender, contend,
 venture, insist, propose...

Science Talk

(Continued from page 10)

When science is pressed as a debate, after all, the possibility that there will be opposition is implied even as the discoveries are being described. Papers that make “claims” introduce their ideas as though they are in doubt, already criticized by a band of implied opponents who have a better idea and for sure won’t believe this one. Science presented as debate is defensive. It has already lost a battle, and is returning the fray, bloodied and punchy. Debate language suggests itself into oblivion, creating by innuendo the expectancy that there is no reality being discovered, only an arbitrary, socially determined judgment being negotiated.

The language of discovery, in turn, conveys a single reality, an underlying truth that is being found by this

scientist, this day, and that is now open to observation by all. Papers that introduce a “finding” imply a focus on what the world is like rather than on what you or I or someone else *thinks* it is like. The language of discovery suggests that what has been found is so powerful that no opposition could possibly arise. Discovery words convey wonder and astonishment. They are the things we say when we either know the truth or believe there is such a thing.

There are other undercurrents to these language choices. When we speak of discovery, we talk of a cooperative process, one in which any reasonable person would look at the evidence and agree that, darn it, this is the way things are! Everyone is a winner when a discovery is made. When we cloak our science as debate, in contrast, we use “fighting words” that foment controversy even when it did not exist.

There will be winners, yes, but there will also be losers. Debate language presumes competition, clashing self-interests, haggling, and trying to “work it out”—all the trappings of life by committee. Debate language makes us all into attorneys.

How to Write

In good science writing, discovery is what it is all about. Although debate exists and is essential to our field, it is not what we should highlight when we write. The language of discovery seems, all things considered, far more likely to win friends and influence people. When you write your next scientific paper, you might pause to reflect on this: Do you want to draw readers’ attention to the way things seem to be, or would you rather impress them that this is the way you see it? ■