



Alan Alda is an actor, writer, and founding board member of the Center for Communicating Science.

The Flame Challenge

I WAS 11 AND I WAS CURIOUS. I HAD BEEN THINKING FOR DAYS ABOUT THE FLAME AT THE END of a candle. Finally, I took the problem to my teacher. “What’s a flame?” I asked her. “What’s going on in there?” There was a slight pause and she said, “It’s oxidation.” She didn’t seem to think there was much else to say. Deflated, I knew there had to be more to the mystery of a flame than just giving the mystery another name. That was a discouraging moment for me personally, but decades later I see the failure to communicate science with clarity as far more serious for society. We feel the disconnect all around us, from a common misimpression that evolution is the theory that we’re descended from monkeys, to the worry that physicists in Geneva might suck the universe into a teacup—or something uncomfortably smaller.

Scientists have recognized for some time that there is a harmful gap in understanding between their work and much of the rest of the world—one that can hold back scientific progress. Scientists urgently need to be able to speak with clarity to funders, policy-makers, students, the general public, and even other scientists. (Not to mention the poignant wish of some young researchers to be able to explain their work to their grandmothers.) I first got insight into this problem while interviewing hundreds of scientists on the television program *Scientific American Frontiers*, produced for the Public Broadcasting Service in the United States. On that show, rather than doing conventional interviews, I had conversations with the scientists in which I kept barraging them with questions until I finally understood their answers. As a result, their work became more accessible to the audience (and to me) than if I had stuck to a standard interview format. Having to talk with someone who was truly trying to understand caused an actual human interaction to take place in these interviews. There was more warmth, and the real person behind the scientist in the white lab coat could emerge. Suddenly, both young people and adults could see that scientists were like them, with a natural way of speaking and even a sense of humor.

I began to think that clarity in communicating science is at the very heart of science itself. And I wondered if written and oral communication skills could be taught systematically throughout the entire length of a student’s science education. The State University of New York at Stony Brook picked up on this idea, founding the Center for Communicating Science. I became part of the teaching faculty, and we began experimenting. We are now teaching communication courses for credit to graduate students in the sciences. Students learn to distill their message and write without jargon. They also experience an innovative course in improvisation, which teaches them to communicate with a live audience with the ease and familiarity of an animated conversation. The intention, of course, is not to turn scientists into actors but to allow them to be more authentically themselves in public interactions. Most of all, we discourage any form of “dumbing down” the science. The goal is to achieve clarity and vividness.

As serious as this question is, I’d like to try a playful experiment. Would you be willing to have a go at writing your own explanation of what a flame is—one that an 11-year-old would find intelligible, maybe even fun? The Center for Communicating Science is looking for new ways to light up people’s minds with science, and you might point the way. We’ll try out the entries on real 11-year-olds and see which work best. For information about this Flame Challenge contest, see <http://flamechallenge.org>.

So here I am—I’m 11 years old and looking up at you with the wide eyes of curiosity. What is a flame? What’s going on in there? What will you tell me?

— Alan Alda



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