Words wield great power. In my own experience, I have learned that numbers also wield great power. The reality is that both are abstractions for human concepts that reside in each of our brains, and in our collective realities. And they permit us to act in a complicated society.

Why do I say that words have power? We have a lot to express, emotions to communicate, an urgency to our messages. Body language isn't sufficient (ducking, cowering, puffing up, hiding, crouching). We have to rely on abstractions. Tiny little bits of sound that have been agreed upon through time and usage evolved to include complex meanings and sets of emotions, expressions, and postures. One word can convey a tremendous amount of conceptual effort: "e pluribus unum," "synergy," "Watch Out!" "You idiot," "society," "compassion,"... These words raise human interaction to higher levels and become a shorthand for expressing increasingly more complex ideas in a short period of time. Imagine a life where all thoughts had to be conveyed through charades!

Both our personal lives and our society are quite complex and varied. If there is one trend that everyone agrees upon, it is that we are doing more and more in less and less time. That makes the effect of each action important, and the consequences of mistakes more serious. People want to believe other people's words, and to rely on them on faith. They have little time allowed NOT to base their own actions on them. We accept credit cards from
3,000 miles away and act on them. We travel distances to transact business with people we have never met. We lay off and hire employees, using information conveyed through letters, forms, and answering machines. We set prices which people pay. Instead of describing where we live with natural symbols and hand gestures, we give addresses, social security numbers, and fax locations. We communicate important information through electronic bulletin boards. I sat in a municipal zoo 1,000 miles from home, and at the ubiquitous electronic teller drew $100 from my checking account. Much of this is based on faith (and solid business systems).

And we have faith that it will all work, that people will understand what we say and will act in a manner that will contribute to our goals. We simply believe in words, even in the midst of a political campaign where words often become hard to believe. We become finely tuned to words so that when they are not truthful, we sense it. And yet, with little hesitation, people are willing to stake their lives on some words, justifiably, when someone calls for help.

I think that words are among the most important tools in civilization; they let us transmit information, organize our energy, control our time, convey our feelings, and shape our lives.

What do words mean to you? Well for one thing I can't understand what you are saying unless you use conventional words, in conventional sentences that are arranged in logical patterns. I can't follow emotional grunts or visceral complaints if I can't find the logical or emotional basis by which a thought is conveyed.

How many people really know what my job is? Do you know each other's academic interests and passions? Do you really know what some profession does? Do you know why you program a computer? Can you produce a statistic? Well, if you can do any of these things, and you
want to tell someone who can't, you are forced either to demonstrate the process entirely, or to find an abstraction to convey your meaning. The tougher the concept, the more difficult and careful the use of words. If I am to understand you, I have to be able to follow your thoughts. And simple words don't always do the job. If what you want to say is complex, it sometimes requires shading of meanings. A well-chosen word can illustrate an entire concept. Do you have an idea? Is it "brilliant," "erroneous," "dangerous," "clever," "terrifying," or just an "ordinary" idea? I can react more appropriately if what you want to convey is clothed in words which give me shortcuts through your forest and byways, and enable me to understand what you mean without having to ask you a dozen more questions. And I will enjoy your participating in a good use of words, reveling in the efficiency and clarity of good speech. We will feel "sociable."

While spoken words work well in small groups, to convey meaning in a larger setting, you must be able to write those words in a way that will not confuse a wide variety of people. You must keep the reader's interest. You can't be boring, redundant, poorly organized, or illogical. A written thought can be widely copied and distributed. Your message may go to a much larger public, and have wide effect.

Since writing is a substitute for more personal conversation, why shouldn't it have some of the elements of conversation, containing a certain amount of humor, not insulting the intelligence of the reader, and allowing for multiple viewpoints?

Because our society gets more complex each day, and people have less knowledge of what anyone else is doing except in the simplest occupations (try to describe teaching and learning as a process sometime), it becomes necessary for us, if we are to advance as a human community to learn to communicate with each other carefully,
succinctly, and with the right emphasis. This makes it very important that the rocket scientist knows how to discuss the town budget, that the computer programmer knows how to handle debits and credits, and that the doctor understands domestic strife. How else can we place thoughts in each other's minds so that we are able to achieve our mutual goals? Any way which leads to a wrong conclusion because of a poor choice of words, or through a lack of words to express the true significance of a thought, can lead to serious consequences, lost opportunities for human betterment, and even tragedy.

Numbers, too, are words. Instead of conveying the emotional side of our thought, they convey the quantitative. Much of what we do in life involves measurement, proportion. We need to know the relative value, the relative humidity, the average, the relative size. We work out trends, rates of change, percents, bottom lines... all to enable our minds to grasp a concept of size and proportion, and point the direction of change. Numbers help us understand when certain limits are reached, and when action is required. Do we like the numerical results of what we do? Do we want to do more of it, less of it, or none of it? It really isn't different from using words. We have just changed the symbols.

In my lifetime I have seen a trend toward using fewer words to cover more complexity. More verbal shorthand. We live in a society where people are readily being given full membership and credibility with few reservations. I am worried that without the tool of good vocabulary and the ability to use it, the good will and social justice that we are building throughout our society and the world can only move haltingly. People will lack the ability to make critical choices on complex ideas if they lack the tools to dissect a thought into its "abstractions." To paraphrase Gresham's law, "poor vocabulary and communication will drive out the good." Used well, words and
numbers convey and organize complexity, and make our responsibilities manageable and our lives "civilized." They also enable us to enjoy fully the community of humankind in our myriad contacts with our fellow creatures.