

**“An Age of Science”**

An Essay Concerning Scientific Literacy

by

Ryan Somma

Ryan Somma  
1000 Hunter St.  
Elizabeth City, NC 27909  
252.207.5768  
ryeguy123@yahoo.com

## An Age of Science

Just as people may grow addicted to exercise, sweets, drugs, or even mind-freezing self-righteous indignation, people come to crave that spine-tingling sense of awe that comes with discovery. Scientific Literacy is a state of mind where we fall in love with the immense, complex beauty of the world and want to spend the rest of our lives adventuring in it. The scientifically literate recognize the repeatable, quantifiable, and testable nature of truth (with a lower-case “t”), and our interactions with reality are clearer, and more practical for this insight.

We are the ones who see the programming code running reality and yearn to decompile it. We are keenly aware of the 13.7 billion-year chain of chance that led from our quarks condensing into our atomic nuclei, which captured our electrons, fusing hydrogen into helium into our carbon inside the forge of stars, cast out in supernovas and into the algorithm of natural selection that merged protobionts into bacteria into our mitochondria, powering single cells into somatic-cells, communing into organisms of growing complexity all the way up to our *homo sapiens*--we who are privileged to wonder, *What's it all about?*

The Information Age has inundated us in a flood of data, and human minds are flailing to keep from drowning in it. To protect the integrity of our cognitive schemas, each one of us must learn to live the Scientific Method. Every new member of the Internet must unlearn the conditioned behavior of believing everything they read, to fact-check the urban legends and misleading rhetoric that clog our inboxes and Web searches, to challenge cherished ideas we have always taken for granted, to question question question. "The more we study the more we discover our ignorance," as Percy Bysshe

Shelley noted. The Internet has become the collective peer-review journal for the entire human race, a memepool where digitized ideas are forced into a survival of the fittest competition for mindshare in the mental ecosystems hosted in our brains.

Unfortunately the minds running this massively complex multi-cultural arena of conceptuals are still prone to our primate ancestors' fascination with shiny objects. We are easily persuaded by emotive appeals vice rational ones. We have short attention spans and too many demands on our time to immerse ourselves in the complexities of anthropogenic climate change, the vast gray-area ethical conundrums of the emergent Genetic Engineering Revolution, or even thinking about the phenomenal implications of  $E=mc^2$  and  $m=E/c^2$  beyond geeky plumage, intellectual mating calls on t-shirts.

In science there are foxes and hedgehogs, researchers who dart from one subject to the next and those who hunker down into one topic exclusively. The overwhelming majority of non-scientifically minded people are foxes. They channel-surf, consume their knowledge in sound bytes, and acclimate themselves to the advertising assault we are all subjected to everywhere we go. Typical people perceive all scientists as hedgehogs. This is because, to most people, science is a single subject, and this is technically correct. Science is a single subject, the subject of everything.

Far too often, scientists are the ones who pigeonhole science. They work to narrow and restrict the scope of what constitutes "true" science. Economics isn't science, but Complexity Theory is. Psychiatry isn't science, but Neuroscience is. Politics isn't science, but Memetics is. If sub-atomic particles make atoms, which make molecules, which make cells, which make people, which make minds, which make societies, how can anything not ultimately answer to science?

Proselytizing science is far too important to be left in the hands of scientists. Scientific Literacy is everyone's responsibility. When we exist, we agree, consensually or otherwise, to live by the laws of this Universe. We must submit to the processes of biology, work within the dictates of chemistry, and obey the laws of physics whether we want to or not. People must deal with reality, and therefore science, every moment of being.

This makes each and every one of us scientists, and loosening the rules up a bit, recognizing everyone as scientists, even if they lack the publications, discoveries, education, or other credentials, will proactively work to promote scientific literacy. Ivory towers of authoritarianism are anathema to scientific progress, which is the most democratic of all disciplines, where every challenge to the establishment, no matter how trivial or unqualified its source, must be satisfactorily elucidated. As Sir Arthur Conan Doyle observed, "There is nothing more deceptive than an obvious fact."

Too many people concerned with the public understanding of science today use standardized testing, the measure of individual minds to independently recall specific facts on the spot, as the criterion for literacy. They are misplacing their focus. Scientific Literacy is a state of mind, an attitude, not a collection of facts in one's head. It is less important to know Carbon's atomic number is six than it is to know that this characteristic of the atom, and many more, are easily accessed on a Periodic Table.

The exercise of reading, even reading poorly, brings children into literacy. An open dialogue, brimming with scientific inaccuracies and ignorance, will bring amateur scientists into the habit of scientific thinking. Facts do not change because people believe inaccuracies. The facts are always there, nestled safely in reality, unchanging and waiting

patiently for people to discover and rediscover them. We all have a responsibility to help others see farther “by standing on the shoulders of giants,” as Newton did, and experience reality’s breath-taking view.

The fruits of science fill our lives, but so few appreciate it. Today Agricultural science fed billions of people across the globe. Medical science saved millions of lives. Physical and Chemical sciences enhanced quality of life with computers, cars, and a plethora of other modern conveniences. Information science expanded our digital cosmos more than half a million terabytes. Evolutionary science scribed the eons’ worth of our ancestors’ epic adventures preceding our few scant millennia of recorded history. Astronomy took us to the outermost boundary of our universe, while Quantum Physics hinted that other universes might lie beyond it.

"Invention breeds invention," wrote Ralph Waldo Emerson. Science only gets better the more you know about it. We must awaken people to that critical mass of scientific understanding, where they begin to hunger for more and set off adventuring for themselves. John Lennon said, “A dream you dream together is reality,” and when a critical mass of scientific literacy emerges in our social consciousness, then the Information Age will give way to an Age of Science.