Dr. Benjamin Franklin—Embodiment of the Two Cultures: How His Example Continues to be Relevant in Today's World

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Abstract

Dr. Benjamin Franklin (1706-1790) was an American genius phenomenally successful as scientist, literary writer, civic leader and diplomat. He is a counter example to the image of the rift of the "two cultures" postulated by C. P. Snow in his 1959 Rede lecture in Cambridge, England. We give a short synopsis of Franklin's brilliant life, and using his achievements as an example, emphasize the need for public policy and education to strive to bridge the gap between the two cultures, because today we have a greater chance then ever.

Introduction

Dr. Benjamin Franklin (1706-1790) was an American genius phenomenally successful as scientist, literary writer, civic leader and diplomat. As one of the most resourceful persons in history he is a counter example to the image of the rift of the "two cultures" postulated by C. P. Snow in his 1959 Rede lecture in Cambridge, England.

In his lecture, fifty years ago, C. P. Snow started a great controversy about the "two cultures": the "literary intellectuals", and the "natural scientists". Snow, himself a scientist, accomplished writer and administrator, spoke from personal experience. He postulated that these two cultures have ceased to communicate altogether and they polarize western society, which as a result is split into two polar groups, between which lie mutual incomprehension and even hostility and dislike. The "two cultures" evolved during the industrial and scientific revolution. The literary intellectuals look with suspicion to the scientists, who they consider superficial and too optimistic, out of touch with human needs. On the other hand, the scientists believe that the literary intellectuals are unconcerned with progress, restricting art and thought to the existential moment. C. P. Snow believed that education was the way to bridge the gap between the "two cultures". In his words though: "the separation between scientists and non-scientists is much less bridgeable among young than it was thirty years ago".

Instead of contemplating the gap between the two cultures it is more beneficial to study the life and accomplishments of a person who bridged the two cultures.

Although, C. P. Snow is dating the split of the two cultures to the industrial revolution, which was in full swing during Franklin's life, it may not be limited to any time frame. The issue existed in the past as well as in the present time.

The Oxford Round Table 20th Anniversary discussion in July 2008 was devoted to the tension between the "two cultures", a tension still relevant in today's world. Faculties, universities and governments face hard academic choices, as fiscal pressures mount. In consequence, the polarization, or tension, becomes a matter of public policy, as the funding of projects, the heart of progress, is exceedingly important, as research tends to be more and more expensive. There is also a moral component to research, as we have seen with the Large Hadron Collider at CERN, which scientists hailed as the greatest experiment of humankind and opponents decried as irresponsibly bringing about the end of the world by having it swallowed up by a black hole produced in the collider. Understanding of the concerns of both scientists and non-scientists is crucial to progress not only for basic research of energy, but also the research in medical fields and technology.

In the fifty years since the start of this debate there have been many advances both in the fields of science as well as in technology. Society is changing its means of communication,

reaching an unprecedented number of people all over the world with the success of the Internet, telecommunications of voice, pictures and data transfer. What was true in the time of C.P. Snow has changed radically, as young people communicate more, using the new technology.

Today, we are much farther along in the scientific and technical revolution, than as described by Snow, and the changes are accelerating. The tools and means to bridge the cultures are available and we have to add the mindset, which is the role of education. Therefore, education is still our best hope to bring together both scientists and non-scientists. They need a common language and understanding, because together they decide what is funded and what will be left out. Public policy on science should be based on scientific understanding of the problems that we face, by those who have the power to allocate the resources that scientists need. Our ability to tackle solutions that face our nation- natural catastrophes, hunger, disease and hatred- depends on our comprehension of the world we live in and this can be only achieved through education that encompasses both sciences and humanities. Public policy makers must appreciate both sides in order for their decisions to result in a positive outcome for the public good.

Dr. Franklin, the First Scientific American and Political Genius

Dr. Benjamin Franklin (1706-1790), an 18th century figure, with an honorary doctor degree in 1762 from Oxford University, embodies both cultures. With the use of the printing press, the 18th century equivalent to the Internet, he was also the first person to disseminate science, as well as literature and knowledge about technology, to a large number of people.

Dr. Franklin, or Ben Franklin as everyone called him, was one of the most resourceful persons in history, who was successful in numerous dissimilar fields, such as science, literature, technology, business, politics, administration and public relations. He was of crucial importance to the success of the newly established, democratic United States of America by winning over the French to support America's struggle for independence.

The 1969 Nobel Price winner for Medicine, Salvador Luria said: "Modern democracy is the daughter of the rationalism of the 17th and 18th century and is therefore, in a sense, the twin sister of science. It is, by its very origins, committed to rationality, to optimism about the future of mankind, to faith in progress based on factual knowledge of the world."

Only the confluence of the two cultures in Dr. Franklin, science and technology as well as literature and art, allowed him to accomplish the goals he set out to secure this democracy. His diplomatic mission to France was threefold: raising funds to finance the Revolutionary Army, obtaining a commercial and military treaty with France and ultimately securing the American Independence in 1783 through the Peace Treaty of Paris with Britain.

When he arrived in France in December 1776, America was six month old, while Franklin was seventy years old. Congress entrusted the fate of the newly declared independent republic to considerable extent to Franklin. America, small as it was, faced Britain, the superpower of that time. Congress has declared independence without having the resources necessary to successfully fight for its cause. The American colonies were without industry to produce munitions, without money or credit to buy them. Few Americans spoke French and access to politics in Europe was through different channels than the town hall meetings in America. Franklin was familiar with the European salons, Europe's true arena of politics. On his previous stays in Britain and France he learned the social graces necessary to succeed. Thus, Congress assigned the only person familiar with Europe to be its representative. Franklin was a natural diplomat, charismatic, patient but ruthless, possessing a truly logical mind, capable to reduce any problem to its simplest, solvable terms, a characteristic of the scientific attitude. Most

importantly he had personal prestige, something that European aristocracy highly esteemed: Franklin was America's first international celebrity. It was the simply dressed Franklin who gave a face to a nation that had none. Franklin was fascinatingly American with his fur cap, recognizable instantly among the powdered heads of Paris. He capitalized on this, for he was a public relations genius. It was the power of his personality that opened the door of the aristocratic salons.

To the French, Franklin was the discoverer of electricity, a man of genius. They were totally amazed by Franklin's account of having killed a turkey with electricity, and these stunts were circulated in Paris and his fame grew.

He exploited his fame as a scientist and inventor of the lightening rod to gain entrance to the salons of the French aristocracy, and then used his literary wit and his skill as a printer, to disseminate his literary works that kept him popular in France. In an age when news arrived slowly, he needed all his skill in order to keep the aristocracy's attention focused on the revolutionary cause. Only the confluence of the "two cultures", his fame as a scientist and his literary skill, allowed him to succeed, one without the other would not have been sufficient. Critical was the use of the printing press that he installed in Passy, his home in France, which afforded him the means to communicate his wit on a larger scale. He was the best goodwill ambassador in France, giving an identity to the nascent nation of America, one that showed simplicity and service to mankind.

Let us examine what Franklin accomplished in the diverse fields he operated in and how all of them together contributed to his success as a diplomat.

Born poor, Franklin became one of the wealthiest men in America through his business acumen, with his printing business, his newspaper and by selling his *Poor Richard's Almanac*. He retired from business and dedicated his time to pursue science and civic interests. He also used his wealth in his diplomatic mission, as Congress had very little money, by giving lavish dinners and keeping a large wine cellar for his guests in Paris.

In science he did research in the field of electricity, which culminated in his invention of the lightening rod, that saved many houses from being burned down when hit by lightening, and brought him world fame. He enjoyed doing research and tried to interest others in his experiments. In the 1753 issue of *Poor Richard's Almanac,* Ben Franklin published his design for a lightening rod. He, unlike anyone before him, and seldom even today, also asked for feedback from anyone who observes lightening hitting the device they install. He used communication in both directions to achieve the best results possible. The response he got from the public helped him redesign the lightening rod, which became basically today's standard model. Franklin was good at writing clearly and tended to write using his own terminology, thus giving us several of the electrical terms: "plus" and "minus" electrical states, "charging" and "discharging", "conductors", "electrical battery", etc. Electricity was still a mystery at this time and in Europe, even in the most elegant salons of the aristocracy, there were exhibits of electrical "experiments". He became a superstar in his time, a person universally recognized and admired for his service to humankind. His superstardom opened the doors for him in France.

His first literary efforts were displayed in *Poor Richard's Almanac*, which gave us many sayings still used today. In fact, many people use them without even realizing their source. Who has never heard "Time is money" or "There is nothing certain, but death and taxes". Later, he used his literary talent in France, where his "bagatelles", little fables and allegories, created a buzz at the French court and in all Europe. His literary skill kept the attention on America, even

when there was no news. The intellectuals of Europe viewed Franklin as one of their own. His name was universally known, from the simplest maids to kings and their courts.

He was a resourceful administrator as Postmaster General for the colonies. His innovation and pragmatism even lead to a postal service that showed a profit. His skill as an administrator helped him coordinate all the resources for the American Revolution and get them to their destination across the ocean.

Franklin was a bold civic leader, a wizard of public relations, who organized the first fire company in Philadelphia, the first police department, a circulating library, the first hospital in Philadelphia and the Academy for Education of Youth, which is today the University of Pennsylvania. Without these he would not have become one of the most outstanding leaders of the American Revolution.

Conclusion

Dr. Franklin was the anti-theses of C.P. Snow's rift between the two cultures. How did he accomplish everything he did? Why was one man so successful? He had an innate curiosity, liked pragmatic solutions, educated himself in history, science, philosophy and foreign languages and learned to express himself with wit and clarity, writing informative essays. His personal charm helped a lot too.

Each of Franklin's achievements would have made a person famous. Thus, his discovery of electricity would have made any scientist famous. His writings would have made any author famous. His printing would have made any publisher famous. His postal service would have made any entrepreneur famous. However, all these people together could not have changed the world history as Franklin did himself.

Dr. Franklin's example continues to be relevant in today's world where a civic-minded scientist could use his or her scientific knowledge to inform the public about the latest scientific discoveries and so influence public policy.

Franklin showed us that learning coupled with commonsense wisdom, observation, imagination, critical thinking linked with pragmatism, concern for the common good and skill to put everything in a clear language can result in a positive outcome, change the life for the better in a society.

Franklin is not the only one that bridged the gap between the two cultures, there are many who could be cited. C. P. Snow himself is another example, as is Bertrand Russell, the 20th century mathematician and philosopher, who in 1950 received the Nobel Prize in Literature. Bertrand Russell said: "Almost everything that distinguishes the modern world from earlier centuries is attributable to science".

What we need today is the confluence of science, technology, art, literature and media in all its forms—written and visual. Scientist and non-scientist need to work together, on a common ground to solve social problems. Science and technology are critical in today's world, but we can make science accessible to everyone only if we can express it clearly in writing and visually. We have the technology to reach more and more people, but we have to make science understandable and attractive, using plain language and visual images. The tools of each culture are today readily available to most people. Thus, what was the quill to Franklin and typewriter to Snow is the computer keyboard for us today. The personal printing press to Franklin and mimeograph to Snow is the computer printer for us today. The letters, newspapers and libraries are enhanced by e-mail, document exchange and search engines on the Internet. The experiments of Franklin and Snow were not accessible to the lay person, but the various public research laboratories do offer

a window into their research on their web sites. Education is still paramount to help people sort and understand the information available. We should educate not "artists" or "scientists" only, but strive to educate well-rounded individuals, who have an understanding of the elements of both cultures.

We have to be able to provide role models for the young, so that they realize that celebrity status in itself is not a substitute for knowledge. The new communication available for the young through the Internet should provide not only entertainment, but also factual knowledge in entertainment form, allowing easy access to facts that are of crucial importance for an educated person. We have to learn to use this new communication method to disseminate knowledge to a large audience.

The scientific attitude: stating the problem, breaking it down to manageable parts, experimenting and observing the outcome, collecting data and finally drawing a conclusion is helpful not only to a scientist, but to every thinking person.

Communicating will require clarity of expression and the use of everyday language, not the jargon of a special field. Embracing both cultures will create a common platform to form consensus and lead to negotiating a positive outcome of the global problems that face us both economically as well as environmentally.

Franklin's example shows us that a truly educated person has knowledge in science, arts, literature, technology, business, history and philosophy. When all these come together, social change will follow, just as in Franklin's time.

Today, we all, scientists as well as literary intellectuals and technology experts, have a unique opportunity to help our society by using our lectern as the podium for public policy reforms. We recognize that there is a need to educate well-rounded individuals. The time has come not to talk anymore about "two cultures" or a "third culture" but about general culture. Only by embracing all cultures, having an understanding of the problems arts, science and technology face, and disseminating knowledge to a large population, following Franklin's example, will we accomplish a positive change in public policy.

References

Krider, Phillip E. (Physics Today, January 2006) *Benjamin Franklin and Lightening Rods.*
http://inventors.about.com/od/fstartinventions/a/Franklin.htm

Schiff, Stacy (2005). *A Great Improvisation: Franklin, France, and the Birth of America*, Henry Holt and Company, New York.

http://www.scottwinslow.com/2002/wealthy.asp

Isaacson, Walter (2003). *Benjamin Franklin, An American Life*, Simon and Schuster, New York.

Snow, C. P. (1998). *The Two Cultures*, Cambridge University Press, Cambridge.

Chaplin, Joyce E. (2006). *The First Scientific American, Benjamin Franklin and the Pursuit of Genius,* Basic Books, New York.

Gabler, James (2006). *An Evening with Benjamin Franklin and Thomas Jefferson*, Bacchus Press, Palm Beach, Florida.

Johnson, Paul (1997). *A History of the American People*, Harper Perennial, New York.

Kohn, Thomas S. (1996). *The Structure of Scientific Revolutions*, The University of Chicago Press, Chicago and London.

Feuchtwanger, Lion (1947). *Proud Destiny*, The Viking Press, New York.

Brockman, John (1995). *The Third Culture: Beyond the Scientific Revolution*, Touchstone, Simon & Schuster, New York.

Dubourcq, Hilaire (2000). *Benjamin Franklin Book of Recipes*, Canopus Publishing, University Press, Cambridge, UK.

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