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On the Contemporary Vilification of Scientists

By Omid Miry

As an afterschool STEM mentor for the New York Academy of Sciences (NYAS), each year I introduce myself to a new cohort of New York City public school children. Before I introduce myself as a scientist in training, I ask them to pull out a blank sheet of paper and draw a scientist. Overwhelmingly, the diverse group of boys and girls draw a Caucasian male, wearing a lab coat and oversized glasses, and with unkempt hair in desperate need of grooming. More concerning than their conceptions of what a scientist must look like is what they draw in the background of their illustrations, as well as the words written in thought bubbles emanating from the scientists' heads. Common background items include exploding beakers, sinister-looking lab rats, and vials of toxic substances, while thought bubbles convey evil laughter or some variation on "I'm going to take over the world."



It is not a challenge to trace the source of these preconceptions, and many of us can remember a time when our perception of a scientist was not dissimilar to my students'. Over 100 years since Dr. Frankenstein and his monster first appeared on celluloid, the evil scientist is still a convenient plot device. Without having to delve into explaining to children *why* a character is evil, films and comics cast scientist-villains as intrinsically evil geniuses who conduct their experiments without regard to its impact on humanity. Whether human (Dr. Doofenshmirtz, *Phineas and Ferb*; Henry Wu, *Jurassic Park*) or animal (The Brain, *Pinky and the Brain*), scientists in popular culture are often depicted as working outside the boundaries of ethics and morality. This misrepresentation of scientists instills a lifelong sense of fear and mistrust in society's only hope: children.

It is certainly true that scientific advancement has faced resistance in many forms throughout history, and one of the most effective ways to obstruct science has been to vilify the scientist. To discredit their work, Galileo and other scientists in the Middle Ages, and throughout the Enlightenment period, were accused and convicted of heresy. One may ask, if science has advanced despite the defamation of scientists, then why is this a contemporary concern?

In my opinion, despite its many achievements, science is today mistrusted and maligned by large fractions of society. Further, while in the past, humanity has had millennia to accept and affirm the laws of nature, we now find ourselves at a critical time when urgent social and political considerations must be made to ensure our survival as a species. In a sociopolitical environment, which often contradicts and refutes scientific findings, we must rely on the public's trust more than ever.

Given the urgency of our predicament, how can we change public perception? The answer is exposure. Remind your family and friends that you are a scientist, that you don't have an evil laugh (most of the time), and that you don't aim to annihilate or conquer the world.

Participate in community dialogue, introduce yourself as a scientist, and share your work. Visit a classroom and speak of your profession. Expand your social networking outside your immediate scientific and medical community. NYAS, the NYC Department of Education, and the National Science Foundation promote a wealth of local mentoring and volunteering opportunities for NYMC students and faculty.

At the end of each mentoring year, I ask my students to again draw a scientist. One of the most rewarding experiences of my life is to see their scientists now drawn as boys *and* girls of all skin colors, holding basketballs and books, evil grins replaced with smiles.

And as I say goodbye to another cohort of students, mindful that they won't all become scientists, I am satisfied that they have been exposed to a scientist who (mostly) does not fit cartoon stereotypes.