



*There is an increase in popularity of Anglo-Saxon films and TV series featuring many kinds of scientists. In an opinion piece Kevin Grazier and Stephen Cass, authors of a recently published book on the topic, called *Hollyweird Science*, explain how Hollywood and major TV series representing scientists have come a long way. Scientists have never been portrayed more positively.*

Hollyweird scientists



Scientists' portrayal in Hollywood and on TV is more positive than ever

Cinematic science fiction is a cultural juggernaut. Few films have garnered the kind of audience anticipation seen in the run-up to the release of *Star Wars: The Force Awakens*. And although the *Star Wars* series is perhaps better described as science fantasy than science fiction, recent “hard” science fiction films like *Gravity*, *Interstellar*, and *The Martian* have performed extremely well at the box office.

On the small screen, US TV series *Battlestar Galactica* won numerous mainstream television awards, with several newspapers and magazines proclaiming it “the best show on television” during its run —

while on the series *Eureka*—known as *A Town Called Eureka* to some European audiences—a different scientific discipline was a guest star every episode.

Science-themed TV shows are also immensely popular. The situation comedy [The Big Bang Theory](#) has been the top-rated comedy among US viewers since the 2010-2011 season and recently enjoyed a rare three-season renewal. [Breaking Bad](#), the various forensic procedural shows, such as [CSI](#), and medical dramas like *House, MD* have all attracted tremendous ratings.

With the consequent increase in the number of scientist characters, surely there must be good news for the evolution of how scientists are portrayed?

Some would say no. In a 2005 interview with the *New York Times*, while promoting his film [Aliens of the Deep](#), filmmaker James Cameron said, "...they always show scientists as idiosyncratic nerds or actively the villains." Although that interview is now a decade old, many working scientists still take umbrage with the ways in which Hollywood depicts scientist characters.

Stereotyped researchers?

In the past, scientist characters generally fell into two camps. Members of the first camp were on screen simply to provide exposition or 'McGuffins' to further the plot. A McGuffin is an object or person that provides the lead characters with motivation but whose exact nature is actually irrelevant to the plot; think, for example, spies chasing secret super weapon plans or rescuing a kidnapped researcher.

Members of the second camp were mad scientists. Both groups were often used to express public fears and frustrations about the pace and direction of life: think super weapons. After World War I, which saw the introduction of both poison gas and the airplane into warfare, the notion that a single person—in particular a scientist—could bring about the end of the world became entrenched in humanity's collective psyche. By the time the 1960s rolled around, the zeitgeist was infused with memories of the sadistic experimentation of Nazi researcher Josef Mengele alongside Cold War nuclear warfare fears. The evil scientist character became firmly entrenched in cinema. And screen scientists became the whipping boys for the anxieties of the modern age.

"Written science fiction embodies more of the philosophy of science itself, in that it suggests that it isn't what we find out that threatens us, it's what we don't know and don't find out," says James Gunn, science fiction historian and founder of the [Gunn Center for the Study of Science Fiction](#) at the University of Kansas, USA. Generally, he elaborates, it encourages experimentation and study and finding out what is out there so we can use it, or defend ourselves against it, or prepare ourselves for it. "Film science fiction... is skeptical of scientific experimentation," he adds: "Of course there are exceptions to that, but in general the impression you get if you see somebody experimenting in a laboratory in the opening scenes of a movie or TV program, you figure that something dangerous is going to emerge from this..."

Wrong impression

Anti-science and scientist bias was already deeply rooted in the early days of the cinema. For example, German filmmaker Otto Rippert's 1916 six-part serial *Homunculus*, was the first film in which both science and scientists are characterised as inherently dangerous. Fritz Lang's influential 1927 *Metropolis* also did not paint either in a favourable light.

This fundamental difference in attitude still divides literary and screen sci-fi to this day. However, in recent years--albeit in a process that probably had its seeds in the debut of *Star Trek* in 1966--the gap has been narrowing, with sympathetic portrayals of science and its practitioners becoming more common.

Indeed, while we discuss six archetypes of scientists now found on screen in our latest book [Hollyweird Science](#), one of the most increasingly popular archetypes is the hero scientist. For example, [Stargate SG-1](#)'s Samantha Carter, [Bones](#)' Temperance Brennan, and most of the cast of [The Martian](#).

If scientists have the impression that they are still getting the short end of the stick, the problem may actually be universal. It turns out that people in very few groups — professional, religious, ethnic any type of group—appreciate their onscreen depictions. There are over 100 organisations in the Los Angeles area whose mission is to lobby Hollywood to improve the representation of their members.

Subjective interpretations

Sometimes scientists are depicted as nerds or villains, but there are also cognitive biases — confirmation bias, negativity bias, backfire effect, and others — that enter the picture. So why do we still complain about these stereotypes? When we see a version of ourselves on screen that is at variance with how we would like to be seen, that depiction, like a gas, expands to fill the volume of our personal container labelled "Hollywood's Depiction of People Like Me." We are all used to being "too close to a problem" that we cannot see the answer. Here, we have a related effect.

Media scholars, researchers with no stake in the outcome, have in recent years performed large-scale, content analysis studies of the depiction of scientist characters. They have come to conclusions, which may be surprising to scientists themselves. Depictions of scientists on both big and little screens are not only better than ever, they are overwhelmingly positive.

A study of primetime content appearing between 2000 and 2008 "... finds that scientists--in accord with their professional distribution among the general population--remain relatively rare characters in the TV world-- with just 1% of characters being scientists--but when they are shown, it is almost exclusively in a positive light. That's according to Matthew Nisbet, associate professor of communication studies at Northeastern University in Boston, Massachusetts, USA, and Anthony Dudo, assistant professor of advertising and public relations at the University of Texas-Austin, USA. "Of the scientist characters, 81% were characterised as good, 26% as both good and bad, and just 3% as bad," their research indicates.

Elusive mad scientist

Though scientists as nerds may still be plentiful, the mad scientist character has largely become a rarity. In the past decade, even before James Cameron made his oft-cited quip, Hollywood producers have been actively involved in improving the representations of science, scientists, and the culture of science in TV and film.

Think about a doctor eye-rolling at the shenanigans seen on a primetime medical drama. Their reaction is probably fair. But, on the other hand, think also about the beneficial impact such dramas have had over the decades in bringing topics such as domestic abuse, addiction, organ donation, HIV/AIDS, and even antibiotic resistance into the public discourse.

Organisations like the US National Academy of Science's [Science and Entertainment Exchange](#) and [Hollywood Health and Society](#) are helping Hollywood productions improve the accuracy of their science. They also assist the film industry in giving a better depiction of scientists and of the culture of science. They do so by connecting science advisers with productions asking for science advice and assistance.

Although many a scientist may sigh audibly every time *The Big Bang Theory* character *Sheldon Cooper* opens his mouth to speak, remember, too, that there are also many more Hollywoodland characters such as Daniel Graystone in *Caprica*, Murphy Cooper in *Interstellar* and *Jurassic Park's* Alan Grant. Scientists are portrayed better than ever, and the situation is only getting better.

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