

Lab Coats in Hollywood: Science, Scientists, and Cinema. David A. Kirby. Cambridge, Massachusetts: The MIT Press, 2011, 264 pages, \$27.95 hardcover.

Reviewed by Jeff Schmerker, Missoula, Montana

This winter, my wife Laura went to see *The King's Speech* with her friend, Jen, a speech therapist who works in a general practice with a wide variety of patients. The movie stars Colin Firth as King George VI of England, who has a speech impediment but has to give a very important radio broadcast — the one that tells Britons they are going to war with Germany. The King is helped by Lionel Logue, an Australian speech therapist played by Geoffrey Rush. More than once during the movie, as the doctor helped the king, Jen leaned over to Laura. “This,” she whispered, “is the same thing I do today.”

Jen was speaking to a sense of realism in the movie, one gained no doubt not just through the acting prowess of Firth and Rush but also likely through exhaustive consulting with speech therapists and historians. Making movie sets the domain of not just actors but also scientists has been *de rigueur* almost since moviemaking got its start. In 1929, German director Fritz Lang hired science writer Willy Ley and Romanian rocket scientist Hermann Oberth to act as consultants to the film *Frau im Mond* [*Woman in the Moon*]. At the time, in the late 1920s, there was scientific consensus about what the Moon was like — including the likelihood that it did not have an atmosphere. Regardless of the scientific input, Lang portrayed his characters on the moon in what are essentially street clothes — a boy appears to be wearing shorts, and a man in a sort of sweatshirt is seen looking through binoculars while standing on the Moon a few steps from their space craft. “I cannot have whole scenes played in diving suits,” Ley said in defense of his set design. He ignored the consultants’ advice and preferred instead to rely on a hypothesis dating from the 1850s which suggested that the far side of the Moon could indeed have an atmosphere.

Contrast Ley’s film with, say, *Jurassic Park*. Paleontologist Jack Horner was extensively involved in the making of the film, and in doing so, argues evolutionary geneticist David Kirby in *Lab Coats in Hollywood: Science, Scientists, and Cinema*, did not merely lend a sense of “realism” to the film (or as real as a film about creating dinosaurs can be). Horner was also able to put forth his theories on the animals — namely, that they were warm-blooded, had a communal nature, nurtured their young, and that *Tyrannosaurus rex* was a scavenger, not a predator. The movie’s depiction of scientific

culture, meanwhile, painted “scientists as heroic figures, paleontology as an exciting career, and genetic engineering as a potentially dangerous scientific endeavor,” writes Kirby.

Kirby’s book is a timely and interesting foray into the intermingling worlds of cinema and science. The book is especially interesting to read in light of the recent crop of films which have not only become blockbusters but which have helped shape public debate over important subjects — much like *The Day After Tomorrow* did for global warming. Kirby’s work begins with a broad overview of scientific representation in film before delving into the finer points of having scientists on set — such as how labs are created for films, how scientific “facts” become gist for debate by producers, how scientific uncertainty is portrayed on the big screen and, perhaps most interestingly, how scientists can use their prominence as a movie’s science consultant to expand their theories not just before fellow (and, in some cases, competing) scientists, but also before the general public.

Consulting by scientists is taken, at times, to interesting levels. As Kirby explains, mathematician David Bayer was used to write equations in *A Beautiful Mind* — not just the equations, per se, but his actual handwriting, “so that the writing of his equations had a natural flow,” Kirby wrote. In *The Nutty Professor*, science consultants were called in to create and equip a lab, something which was done with mixed success. While accurate in many ways, the lab also featured something real labs rarely have but that the filmmakers felt was necessary — colorful bubbling liquids. Why? It was “what Hollywood thinks the public expects of a scientist,” said consultant Wayne Grody, who brought in PhD students to help make the lab.

“The ascent of the expert throughout the twentieth century has paralleled the commodification of knowledge in our society” Kirby writes. “This growing valuation of expertise has led to increasing collaboration between two communities whose objectives seem to be at odds: the entertainment industry and the scientific community.”

Consultants are used not just for fact checking, Kirby asserts. They help filmmakers shape the movie’s visual aspects and, more importantly, enhance the plausibility of scientific events — to make the movie more “believable.” Such from-the-source scene setting is used not just in the movie, but also in the PR buzz, as consulting scientists become part of the publicity drive of big films. In other words, by using scientists on the set (or during the writing of the movie, at least) filmmakers get believability and a spokesman (or an interesting interview subject on the DVD’s special features section).

Plausibility is important to filmmakers and, not surprising, to scientists, who dub inaccurate science in movies and books as “bad science.” But movies with “good” science don’t always sell, and those with “bad” science sometimes are a big hit. *Mission to Mars* used images from the Mars Pathfinder to design sets, but also designed the set to have red soil, even though Mars’ surface is more yellow–brown. “It’s the red planet, not the yellow–brown planet,” said Matt Colombek, chairman of the Mars Pathfinder Project Science Group, who consulted with filmmakers for the movie. “So who cares what reality is. You can’t fault them for that.”

Which is a large part of the argument Kirby makes. A film full of half-true scientific items represents a compromise between accuracy and inaccuracy. Accuracy is not only expensive, but also may be contrary to what the public expects and so can itself become sort of counterproductive. And, anyway, “compromised or not, any observance of factual science in cinema is only by filmmakers’ consent,” Kirby points out.

Kirby has standing to write this book. With a background in evolutionary genetics, he now serves as a lecturer in science communication studies at the University of

Manchester. What he has produced is, by and large, interesting and, as it is largely free of scientific jargon, also well suited to general readership — for the most part, anyway. The book has the annoying habit, even as late as page 75, of including phrases such as “As will be evident throughout this book” More irksome, meanwhile, could be the book’s focus on a relative handful of films — only about a dozen are detailed, and some of those were totally forgettable (if the movie *Solar Crisis* does not ring a bell, there’s probably good reason for that).

A more substantial criticism, however, can be found when one wants to know why all of this matters. In one case, we have directors seeking very detailed and specific advice from scientists about the intricacies of using nuclear weapons to blow up a meteor headed for Earth. The foundational basis for most of the movies detailed in *Lab Coats in Hollywood* is patently fictitious — cloning dinosaurs, as was done in *Jurassic Park*, is assuredly far, far off — so why does it matter that the lab scene in a particular movie features the exact same \$50,000 microscope that a real lab would have?

It is here that Kirby seems to have the most trouble. Kirby quotes Robert Heinlein, who wrote the 1947 book *Rocketship Galileo*, on which the movie *Destination Moon* was based. Heinlein recognized “that a scientifically accurate film would generate significant positive publicity within scientific circles and that it would be a picture ‘the New York Times science editor would praise . . . and that scientists would commend publicly.’ He also worried that an unrealistic film would lead to negative publicity from scientists.” To be successful, Kirby posits, “a modern science-based film must adhere to a sense of scientific authenticity.” Keeping scientists on the set provides filmmakers with insight into what it means to be a scientist and helps filmmakers make sense of not just a movie’s effects but of the scientific community itself. While that may be true, even Kirby points out that the “scientifically ludicrous” *Armageddon* creamed the “scientifically accurate” movie *Deep Impact* at the box office, bringing up the question, then, of to what extent filmmakers’ use of scientists truly helps or hinders the bottom line.

The science that gets nearly all of Kirby’s attention is the science of volcanoes, asteroids, planets, animals, and the weather. While the science of psychology and philosophy get short shrift (neither word even appears in the index) there is fodder for the fields here. Scientists have been used as consultants with great success in psychology and philosophy-themed movies — *The Silence of the Lambs* is one good example, but other films with psychological underpinnings in the recent past also include the likes of *Little Miss Sunshine* and *Memento*.

I think it is important not to confuse criticism of the book with criticism of Hollywood. Kirby’s book is honest and true, well-researched, unique, and easy to read; it is the movies, on the other hand, that can so often make such a mess of fiction.