NASA is criticized for saying they developed a flu drug in space. Movies are said to "portray scientists in ways that reflect the hopes and fears of the audience." Whether the French Embassy in Beirut tried to influence the awarding of the Rammal Medal for physics is debated. The questioning of strict maternal inheritance of human mitochondria is discussed. Aneuploidy is suggested as the key to cancer. And the citation impact of Czech journals is reanalyzed by representatives of the Czech Academy of Sciences.

Drug Development in Space?

I would like to reply to Lawrence J. DeLucas's letter of 4 June (*Science*'s Compass, p. 1621). On 15 March, a press release by the National Aeronautics and Space Administration (NASA) proclaimed: "NASA develops flu drugs in space," implying that flu neuraminidase crystals grown in space in microgravity on the NASA shuttle had been used by Biocryst Pharmaceuticals for the rational design of neuraminidase inhibitors now being further developed by Johnson and Johnson as drugs for the treatment of influenza.

This is not correct. The neuraminidase crystals used by BioCryst in this project were grown here on Earth at the Australian National University. One grown on Mir (nothing to do with NASA) was used in the initial stages, but it was not significantly better than the Earth-grown crystals.

In a letter sent to me on 18 March, DeLucas and Ming Luo stated: "In addition, we grew crystals of N2 and B/Lee/40 neuraminidase on the NASA space shuttle with proteins you provided. These crystals were used in attempts to solve the structure of drug-B/Lee/40 complexes. These crystals did not show any improvements compared to the Earth-grown crystals."

They then went on to say, "NASA simply wants to let the public know about the positive results from this program." It seems to me that after years of growing crystals on a large number of orbiting shuttle flights, at a cost of millions of dollars, NASA has very little in the way of "positive results."

NASA has, of course, done many marvelous and exciting things, but protein crystal growth in microgravity seems not to be one of them. It might be appropriate to terminate this activity now and use the money saved for some more worthwhile project.

W. Graeme Laver
John Curtin School of Medical Research, Australian National University, Post Office Box 334, Canberra 2601, Australia. E-mail: graeme.laver@anu.edu.au.

Scientists Sam Neill and Laura Dern in *Jurassic Park*

CREDIT: ARCHIVE PHOTOS

Swashbucklers and Brainy Babes?

In his essay "Ritual abuse, hot air, and missed opportunities" (Essays on Science and Society, *Science*'s Compass, 5 Mar., p. 1461), Michael Crichton criticizes my article "Script doctors" in *The Sciences* (*1*) for emphasizing "negative rather than positive images, a perennial exercise in self-flagellation, what I call ritual abuse."

Actually, "Script doctors" is a balanced look at how movies have always portrayed scientists; while it considers prototypically mad or overreaching scientists, it also discusses heroic ones, from swashbucklers to the wise Professor Barnhardt of *The Day the Earth Stood Still,* from Madam Curie to the admirable scientists of Crichton's own *The Andromeda Strain*—whom I describe as "pretty normal people who, in this case, manage to save the world."

Some of Crichton's comments are inaccurate or based on misinterpretation. For instance, he asks why I single out Sharon Stone's character in *Sphere,* instead of discussing any of the three males, since "[e]verybody in *Sphere* is a scientist." But I specifically identify her as a new type of Hollywood scientist, "the brainy babe"—a category for which the three men do not readily qualify. Similarly, when he dismisses *Re-Animator* as "a movie no one has ever seen," he is apparently unaware that this movie has spawned *two* follow-up films. Although he writes that *Dr. Jekyll and Mr. Hyde* "isn't about science, it's about the dual nature of man," it is certainly about both. A constantly reiterated theme in *Dr. Jekyll and Mr. Hyde* is the danger of a brilliant scientist overreaching himself; in the 1932 version, Jekyll, speaking to God, says, "I have trespassed on your domain. I have gone further than man should go."

Crichton's "proof" that movie images do not "reflect society in some way," is that "[f]ifty years ago, movies were characterized by strong women—Crawford and Stanwyck and Bette Davis. Women of intelligence and substance, women to be reckoned with. Since then...the movies have portrayed women primarily as giggling idiots or prostitutes." The truth, of course, is that there were plenty of giggling idiots and prostitutes in the old movies, and to state that today's films do not have their share of "strong women...to be reckoned with," would likely be unwelcome news to Susan Sarandon, Meryl Streep, Jessica Lange, Michelle Pfeiffer, Barbra Streisand, and a number of others, including Sharon Stone.

Crichton says of my essay that "The implication is that scientists are singled out for negative portrayals, and that the public is therefore deceived in some way we should worry about. I say, that's nonsense." That is indeed nonsense, but it isn't what I wrote.

I thoroughly agree that accurate portrayals rarely have much to do with a commercial film. But I hardly think the public is "deceived," since the subject of my essay was not the appearance of actuality, but rather how movies portray scientists in ways that reflect the hopes and fears of the audience. It's not a question of deception, but of reflection.

Crichton's statement that "[a]ll professions look bad in the movies...doctors are all uncaring...All cops are psychopaths, and all businessmen are crooks" is not only nonsense (there are countless heroic cops and caring doctors onscreen); ironically, his own films contradict that assertion. His doctor in *The Andromeda Strain* is compassionate and heroic; his businessman in *Jurassic Park* is, as Richard Nixon might have said, not a crook. Crichton insists that "Scientific work is often an extended search. But movies can't sustain a search," when *The Andromeda Strain* makes thrilling a scientific search that lasts the length of the film.

A deeper irony is this: in generalizing about movies, Crichton seems to be dismissing their relevance, even as he accuses film columnists of demonizing scientists.

But his own cinematic contributions attest that while films do not reflect reality, they do reflect our psychic aspirations and terrors and that, in doing so, they should not be devalued or ignored, any more than they should be presented as literally true. Any art form that has people of Crichton's caliber working in it should be taken a lot more seriously than he himself seems inclined to take it.

M. Z. Ribalow
431 East 20 Street, New York, NY 10010, USA

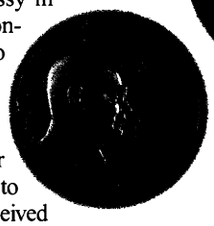
References

1. M. Z. Ribalow, *The Sciences* (November/December 1998), pp. 26–31.

Rammal Medal Selection

Certain passages of Michael Balter's article "Physics prize falls foul of Middle East politics" (News of the Week, 5 Mar., p. 1422) might lead the reader to believe that French authorities possibly exerted influence on the deliberations of the prize jury responsible for the awarding of the 1998 Rammal Medal for physics.

I would like to clarify that no intervention was made by the services of the Embassy of France in Beirut to sway, in any way, the decisions of the French Physical Society and the Ecole Normale Supérieure Foundation, the institutions responsible for the adjudication of the Rammal Medal. As the spokesperson of the French Foreign Ministry announced as early as 8 March 1999, these organizations acted autonomously in both the nomination and the determination of conditions for ratification of this year's medal recipient.



The French Embassy in Beirut's role in the controversy was limited to reporting on the adverse reaction in Lebanon to the nomination of an Israeli for the prize, in response to inquiries that it had received on the subject. The Embassy of France did not participate in either the nomination or the review of the 1998 Rammal Medal candidates.

Jean-François Large
Mission Scientifique et Technologique, Ambassade de France aux Etats-Unis, 4101 Reservoir Road, NW, Washington, DC, 20007–2174, USA

Response

I reported that the scientific attaché of the French embassy in Beirut contacted the president of the Rammal Medal jury to complain that the jury's decision to award the medal to an Israeli was causing strains in Franco-Lebanese relations. This is supported by e-mail exchanges made available to *Science* and interviews with officials involved. The attaché told me that he acted in a "personal capacity." The French Physical Society (SFP) was still considering the jury's decision at that point, but as I also reported, SFP officials themselves are divided on whether outside pressure, including the views of embassy officials, had any influence on their decision not to award the prize.

—Michael Balter

Mitochondrial Recombination?

In her article "Can mitochondrial clocks keep time?" (News Focus, 5 Mar., p. 1435), Evelyn Strauss discusses a paper by Adam Eyre-Walker *et al.* (*1*) questioning the strict maternal inheritance of human mitochondria. Given that the large body of vertebrate phylogeny (as well as population studies using mitochondrial genetic information) rests on the assumption that the vertebrate mitochondria are clonal in their mode of inheritance, evidence of recombination between maternally and paternally derived mitochondria would seri-

CREDIT: SAM KITTNER