

## **Misguided "Balance" in Science Journalism**

Remarks delivered at the Merck Science Journalism Student Awards Program

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By Chris Mooney

Greetings. It's great to be here. I want to thank Guy Baehr for inviting me and the Journalism Resources Institute at Rutgers University for hosting the program. I'd also like to extend my congratulations to the students--and aspiring journalists--who have won scholarships this year.

I want to preface my remarks with the following disclosure, which I always give when speaking publicly about science: I am not a scientist, and don't pretend to be.

Whatever expertise I may have comes from working as a journalist who interviews a lot of scientists and regularly covers scientific controversies. But I certainly don't have the kind of specialized knowledge that emerges from conducting research in a given field or keeping up with the literature.

That said, I've been asked to speak about the "tension in journalism between 'balance' and 'truth,' especially as it applies to reporting on medical and science issues"--a topic I've gone a fair way toward branding as my own lately. I don't think I've ever received as much feedback for a single article as I did for my November 2004 *Columbia Journalism Review* piece, "Blinded By Science: How 'Balanced' Coverage Lets the Scientific Fringe Hijack Reality," which amounts to my manifesto on this subject. In fact, just yesterday I opened my mailbox and found that the article had been reprinted in the

quarterly newsletter of the National Association of Science Writers. So clearly, this pamphlet of mine has been getting around.

In the *Columbia Journalism Review* article, I argued that the journalistic norm of "balance" has no parallel in the scientific world and, when artificially grafted onto that world, can lead reporters to distort or misrepresent what's known, to create controversies where none actually exist, or to fall prey to the ploys of interest groups who demand equal treatment for their "scientific" claims. To address this problem, I suggested that when it comes to reporting on science-related controversies, journalists should avoid the trap of "he said/she said/we're clueless" coverage and instead actually help their readers evaluate the credibility of competing claims. In doing so, journalists should rely on the principle that extraordinary assertions require extraordinary proof to back them up, and bear in mind that the processes of scientific peer review and consensus building should not be discarded lightly, if at all.

My *Columbia Journalism Review* article opened with a discussion of how reporters have covered the question of whether abortion causes breast cancer (it almost certainly does not). We can discuss this topic further if you'd like. But tonight, I want to launch into my critique of the norm of journalistic "balance" in a much more exotic, but I think very revealing, way: By discussing alien "abduction" claims and how these were covered in a recent ABC primetime special. This is a subject of considerable interest to me because if you lower the standards of proof enough, it turns out that I myself may qualify as an alien "abductee." However, stories like the one I'm about to tell you throw ABC's "balanced" coverage of the alien abduction issue into serious question.

## **I. In Bed With UFO Fans**

The year was 1999, and I was working at the time for an organization called the Committee for the Scientific Investigation of Claims of the Paranormal, based in Amherst, New York, just outside of Buffalo. The group is called C-S-I-C-O-P for short (pronounced "psi-cop," which I think is a great acronym) and is best known for publishing *Skeptical Inquirer* magazine. I still write a monthly online column for *Skeptical Inquirer* these days, but at the time this was my first job out of college, and I wasn't even sure I was going to get into journalism as a profession.

CSICOP specializes in monitoring and debunking paranormalist nonsense, along with paying homage to good secular rationalists like Carl Sagan and Stephen Jay Gould. So I was working as a professional, card-carrying "skeptic," up to my ears in tales of psychics, aliens, and weird creatures. I even developed my own straitjacket escape routine for the group's Halloween celebration of the life of Harry Houdini, a prolific debunker of spiritualist mediums who claim the ability to speak to the dead.

I had almost no money at the time, and was living in a guest house behind the offices which served as a place for visiting scholars and scientists to stay when they came to consult or lecture. And one night, I had a truly horrifying--and yet curiously work-related--experience.

I woke up in the middle of the night, felt paralyzed, and sensed a frightening presence in my room. My eyes were open but I couldn't move. And then I saw it: A tiny humanoid standing by my closed bedroom door. As I lay there immobile and terrified, this thing--I don't know what else to call it--moved from the doorway over to my bedside. It didn't walk, exactly. Rather, it seemed to glide or float, closer and closer to me. The

being was standing, but its huge, oval-shaped head did not come up much higher than my chest as I lay prone on my back in the darkness.

At that point, I'm not sure exactly how, I thrashed and woke myself up. As soon as I did, the figure vanished backwards into the darkness of my computer monitor (which was sitting on a desk nearby), almost as if screen had suddenly become a black hole and sucked the "alien" in. I turned on every single light in my room and cowered for a while, but nothing else happened, and the experience has never been repeated.

Based upon little more evidence than what I myself have just described, a large number of Americans have come to the conclusion that they have been abducted from their beds at night by alien beings. Indeed, the details of my account reflect core components of the so-called alien abduction experience. Granted, "abductees" also often claim to remember sexual molestation aboard spaceships and other bizarre and sometimes kinky stuff--memories that many psychologists think are actually planted in suggestive minds through the process of hypnotic regression. I have no such memories, perhaps because I did not go seeking meaning from my experience and subsequently find someone willing to hypnotize me.

The subject of alien abduction has been around for some time, but it made a major appearance in the mainstream media recently. The notion that such abductions actually *happen*--rather than merely being something that we humans create out of our own terrifying experiences--was lent implicit credibility by none other than ABC's Peter Jennings, a leading light in journalism by any standard. Jennings' very "balanced" February 24 primetime special on UFOs, aptly titled "Seeing is Believing," included reams of testimony from alleged alien abductees. One of the individuals speaking on the

ABC program even claimed that the beings who visited his bedroom "measured three feet eleven." (I did not myself managed to get out a tape measure while lying in bed paralyzed, so I don't have comparable statistics on my own alien visitor.)

Jennings' approach to these rather stunning claims was to "balance" them against the views of psychologists who have actually studied alien "abductees," such as Harvard's Richard McNally and Susan Clancy. These two scientists, very plausibly, explain that the core alien visitation experience, which I've just described to you, is highly consistent with something called sleep paralysis, which occurs in 30% of the general population, including 5% of cases in which individuals experience "visual, tactile, and auditory hallucinations."<sup>1</sup>

In sleep paralysis you wake up in bed, feel paralyzed, and tend to sense a terrifying presence in your room. Sometimes you see something; sometimes you hear noises or even feel electrical shocks throughout your body. I have seen a small humanoid during one occasion of sleep paralysis; during another, more recent one, I saw what looked like a dog in my room. Others see ghosts, vampires--whatever they have in their minds or are particularly afraid of. Deceased relatives and loved ones are particularly good candidates for showing up during bouts of sleep paralysis.

But what's really happening here, according to McNally and Clancy, is nothing out of the ordinary. Rather, REM sleep--the phase of sleep when most dreaming occurs--is simply malfunctioning. In a phone conversation, McNally even likened the situation to getting a case of the hiccups.

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<sup>1</sup> See Richard J. McNally and Susan A. Clancy, "Sleep Paralysis, Sexual Abuse, and Space Alien Abduction," *Transcultural Psychiatry*, March 2005.

Our bodies are paralyzed while we undergo REM sleep, and for good reason (lest we act out our dreams and injure ourselves). But in some small number of cases we can actually start to wake up before paralysis wears off, and yet still remain in a dreaming state. What results is hallucination, often of some extremely scary stuff. It appears that humans have always experienced sleep paralysis and sought to explain it, resulting in well known stories of incubi and succubi--demons thought to sexually attack people in their sleep--as well as related tales from other eras and cultures.

Among all of those who have experienced sleep paralysis over the course of human history, I count myself among the lucky ones. Because of my work as a professional "skeptic," I had actually heard of sleep paralysis before it happened to me. Indeed, the fact that I had specifically studied alien abduction claims probably explains why I hallucinated an alien humanoid, rather than something like a ghost, that night. Even as I lay there in bed terrified, I think I knew on some level what was happening to me.

But what if I hadn't known? I can easily see myself trying to find an explanation for what had befallen me, and at least considering the possibility that I had been visited in my bed by a space alien. And here's where journalistic responsibility come into the picture. Whatever the duties and mandates of a journalist may be, they certainly do not include allowing people to go unchallenged in the erroneous belief that they are being snatched from their beds at night and subjected to perverse sexual experiments by marauding aliens. The mere fact that a considerable number of individuals have an emotional investment in such a belief does not exempt it from critical analysis.

Furthermore, I always thought that as a general principle, journalists were supposed to shatter myths and educate the public. Alien "abduction" happens to be one of the most bizarre--and fascinating--myths of our time.

Yet when Peter Jennings and ABC approached this topic, they opted to leave their critical faculties at the door, presumably in the hope that a show enshrouding UFO claims with a veneer of mystery and intrigue--rather than mercilessly debunking them--would draw impressive ratings. It's not that Jennings didn't provide viewers with access to the arguments of scientists like McNally and Clancy, of course. But he treated these arguments as essentially no more or less believable than the assertions of individuals claiming to be have been abducted--this in the context of a program, entitled "Seeing is Believing," which generally puffed up firsthand accounts of alien experiences and rarely subjected them to much criticism.

If we consider the weight of the evidence, Jennings' "balanced" coverage of alien "abduction" claims is impossible to justify. Such claims, based either upon individual testimony about events that occurred late at night in the darkness or upon memories "recovered" later during hypnosis, strain credulity. Meanwhile, the far more mundane explanation of this phenomenon--which cites the widespread prevalence of "New Age" and paranormal beliefs, the occurrence of sleep paralysis and its attendant hallucinations, and questionable recovered memories as contributing factors that, working together, fuel the abduction myth--has an impressive internal logic and explanatory power. As McNally put it to me, his account "can explain why individuals who are sincere and not psychotic could genuinely believe they were abducted by aliens." That's a pretty impressive achievement.

But if there's no question which explanation for the "abduction" phenomenon is more credible, journalists shouldn't mince words about that fact. To treat alien abduction claims seriously, when a clear and obvious explanation for the phenomenon exists, strikes me as a betrayal of journalistic responsibility, and one with nontrivial consequences.

Alien "abductees" seem deeply wedded to their beliefs, which apparently fulfill a deep spiritual purpose in their lives. Perhaps those who cling to these views could never be convinced to relinquish them. Nevertheless, a very positive social benefit might result if more people understood what sleep paralysis is and how it contributes to widespread "paranormal" experiences. If journalists did a better job of educating the public on this subject, it's conceivable that a lot of fear and grief could be averted.

## **II. Balance as 'Bias'**

Examples like the Jennings-ABC program, while perhaps extreme, are symptomatic of a larger problem plaguing science-related media coverage today. After all, the journalistic norm of "balance" has no corollary in the world of science. On the contrary, scientific theories and interpretations survive or perish depending upon whether they're published in highly competitive journals that practice strict quality control, whether the results upon which they're based can be replicated by other scientists, and ultimately whether they win over scientific peers. When consensus builds, it is based on repeated testing and retesting of an idea.

Journalists, though, face a number of pressures that can prevent them from accurately depicting competing claims in terms of their credibility within the scientific community as a whole. First, reporters must often deal with editors who reflexively cry

out for “balance.” Meanwhile, determining how much weight to give different sides in a scientific debate requires considerable expertise on the issue at hand. Few journalists have real scientific knowledge, and even beat reporters who know a great deal about certain scientific issues may know little about other ones they’re suddenly asked to cover.

On top of that, interest groups with a stake in various science-based controversies lobby journalists incessantly to ensure favorable coverage for their allegedly "scientific" positions. These groups not only shout with a megaphone; they're capable of getting reporters whose work they don't appreciate bombarded with hate e-mails. And beyond issue specific advocacy groups, we also encounter umbrella "media criticism" groups on both sides of the political aisle, which regularly attack journalists who have transgressed against their particular notions of how a given issue ought to be covered. One of the most frequent criticisms, of course, concerns the failure to provide adequate "balance" on controversial topics.

Yet despite all of these pressures, the journalistic objective remains to inform people, not to keep alive assertions that aren't deemed credible by the scientific community. So in reporting on science-based issues, I believe (perhaps somewhat old-fashionedly) that nonsense ought to be called into question and the current state of scientific knowledge clearly described--even if that means that we may sometimes have to forsake a so-called "balance" between competing opinions. That's not to say that the "other side" on a particular issue should be misrepresented or ignored. But fringe or minority viewpoints should be clearly identified as such, and preferably treated in a subordinate fashion in the story.

I'm not the only journalist clamoring on this point, as it happens. I think it's catching on in science journalism more generally. Consider an October 2004 article in the *New York Times* science section by Cornelia Dean, reporting on the controversy over a young Earth creationist book that's being sold at Grand Canyon bookstores. Dean flatly calls the young Earth creationist view of the canyon's history a "myth," and doesn't present the "other side" on this question *at all*.<sup>2</sup>

I considered Dean's article a breath of journalistic fresh air, but I don't think enough newspaper writers take her tack. Indeed, we have empirical evidence demonstrating that the key politico-scientific issue of our time--global climate change--has been covered in an unduly "balanced" fashion by mainstream newspaper journalists over more than a decade.

While some scientific uncertainty remains in the climate field, the most rigorous peer-reviewed assessments--produced roughly every five years by the United Nations' Intergovernmental Panel on Climate Change (IPCC)--have cemented a consensus view that human greenhouse gas emissions are helping to fuel the greenhouse effect. This position isn't simply based on deductions from physical first principles (although those are hard to argue with; virtually no one disputes that a greenhouse effect exists or that carbon dioxide is a greenhouse gas). In addition to physical reasoning, we are also seeing a string of record temperature years, as well as the early impacts of human-caused climate change--melting glaciers, pronounced Arctic warming, and shifts in the geographic ranges of species, to name a few examples.

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<sup>2</sup> Cornelia Dean, "Creationism and Science Clash at Grand Canyon Bookstores," *New York Times*, October 26, 2004

That's where the science stands, but quite a lot of people don't accept it. And the doubters, or "skeptics," have clearly sought to sway members of the media. In 1998, John H. Cushman, Jr., of *The New York Times* exposed an American Petroleum Institute memo outlining a strategy to invest millions to "maximize the impact of scientific views consistent with ours with Congress, the media and other key audiences." The memo even cited a need to "recruit and train" scientists "who do not have a long history of visibility and/or participation in the climate change debate" to engage in media outreach and counter the mainstream scientific view.<sup>3</sup>

This seems to signal an awareness that after a time, journalists catch on to the connections between contrarian scientists and industry. But in the meantime, a window of opportunity apparently exists when reporters can be duped by fresh faces. And sure enough, the evidence suggests that many journalists reporting on science issues fall easy prey to sophisticated public relations campaigns--especially on the subject of climate change.

In a 2004 paper published in the journal *Global Environmental Change*, the scholars Maxwell T. Boykoff and Jules M. Boykoff analyzed coverage of global warming in *The New York Times*, *The Washington Post*, *The Wall Street Journal*, and the *Los Angeles Times* between 1988 and 2002. During this fourteen-year period, climate scientists successfully forged a powerful consensus on human-caused climate change. But reporting in these four major papers did not reflect this consensus.<sup>4</sup>

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<sup>3</sup> John H. Cushman, "Industrial Group Plans to Battle Climate Treaty," the *New York Times*, April 26, 1998.

<sup>4</sup> Maxwell T. Boykoff and Jules M. Boykoff, "Balance as bias: global warming and the U.S. prestige press," *Global Environmental Change* 14 (2004), 125-136.

The Boykoffs analyzed a random sample of 636 articles, out of a total population of 3,543. They found that a majority--52.7 percent--gave "roughly equal attention" to the scientific consensus view that humans contribute to climate change and to the opposed (and often industry-supported) view that natural fluctuations suffice to explain the observed warming. By comparison, just 35.3 percent of articles emphasized the scientific consensus view while still presenting the other side in a subordinate fashion (a far more appropriate story structure). Finally, 6.2 percent emphasized the industry-friendly view (highly questionable from a journalistic perspective), and a mere 5.9 percent focused on the consensus view without bothering to provide the industry/"skeptical" counterpoint (justifiable, perhaps, but probably not an ideal approach in all circumstances).

Most intriguing, the Boykoffs' study found a shift in coverage between 1988--when climate change first garnered widespread media coverage--and 1990. During that period, journalists broadly moved from focusing on scientists' views of climate change to providing "balanced" accounts. During this same period, the Boykoffs noted, climate change became highly politicized and a "small group of influential spokespeople and scientists emerged in the news" to question the mainstream view that industrial emissions are warming the planet. The authors conclude that the U.S. "prestige-press" has produced "informationally biased coverage of global warming . . . hidden behind the veil of journalistic balance."

We've come a long way from the rather quirky issue of alien abductions to the very serious matter of global climate change--moving from events allegedly happening in people's bedrooms late at night to events that are quite literally transforming the Earth. And yet we see the same ticks, the same pathologies, in media coverage.

### III. Intelligently Designed Reporting

But since one needs at least three examples to demonstrate a trend, let me introduce you to yet another area where we encounter phony "balance" (and other problems) in science coverage: Reporting on the alleged controversy over the theory of evolution versus so-called "intelligent design." Intelligent design proponents make the argument that living things, in their organized complexity, simply could not have arisen from a mindless process such as natural selection. They claim this is a scientific view, but others argue, quite plausibly in my opinion, that it merely represents the latest version of creationism posing in scientific guise.

But whatever their scientific credentials, "intelligent design" advocates have clearly sought to influence the media. In the so-called Wedge Document, an early fundraising proposal from the anti-evolutionist Discovery Institute, proponents of "intelligent design" say that "we seek to cultivate and convince influential individuals in print and broadcast media."<sup>5</sup> More recently, the Discovery Institute created a blog devoted to commenting on media coverage of the evolution issue (including remarking upon interactions with journalists who have yet to even file their stories).<sup>6</sup> So clearly, these advocates are trying to shape news coverage in a way favorable to their interests.

My contention is that they're succeeding. There's been considerable coverage of ID lately thanks to several court cases, and journalists have failed in a number of ways.

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<sup>5</sup> Document on file with the author.

<sup>6</sup> See John West, "Upcoming Article: Will the Washington Post be Fair?" February 25, 2005, available online at <http://www.evolutionnews.org/index.php?p=151&more=1&c=1&tb=1&pb=1> (accessed April 5, 2005).

Let me describe a few of the lesser sins before we get on to the bigger problem of "balance."

The first issue is what we might call loaded language. Words matter a great deal in the evolution "debate." After all, we've actually seen warning labels slapped in high school biology textbooks calling evolution "a theory, not a fact," a tactic which exploits a confusion between the vernacular use of "theory" to mean conjecture or speculation and the term's scientific meaning.

In this context, I consider it questionable for journalists to describe "intelligent design" as a "theory," thereby implying it has an explanatory power comparable to the theory of evolution (which explains, among myriad other curiosities, why islands feature organisms related to but distinct from nearby mainland populations, or why closely related species have more DNA in common with one another than they do with more distant relatives). Yet we see ID called a "theory" again and again. I know I'm beating up on ABC a lot, but a January 13 "Nightline" special actually used the word "theory" to describe "intelligent design" several times (at least according to an online write-up of the program).<sup>7</sup>

The second problem with recent coverage of the evolution "debate" concerns a general lack of historical awareness. The whole history of anti-evolutionism in America demonstrates an ever-increasing trend towards the appropriation of scientific credentials. So I find it absurd for *Newsweek's* Jerry Adler to write, as he did in a recent feature on

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<sup>7</sup> ABC News, "Pa. Neighbors Feud Over Darwin, 'Design': Wounds Open Over School Board Decision to Propose 'Intelligent Design' as Alternate Theory to Evolution," January 13, 2005.

this subject, about the "new tactic of attacking evolution with objective, scientific language."<sup>8</sup>

For Mr. Adler, I have a homework assignment. He should read Ronald Numbers' excellent history *The Creationists: The Evolution of Scientific Creationism*, which will teach him that there's nothing new about anti-evolutionists adopting the guise of science. For decades, those who have sought to undermine the teaching of evolution in public schools have claimed to be just as "scientific" as the evolutionary biologists they oppose, in part for reasons of legal strategy (this is something we can discuss further if you'd like). If journalists would explain this properly to their audiences, readers would have a much easier time putting the ID movement into its appropriate context.

Which brings us to the mother of all problems in science journalism--constructing an artificial "balance" between scientifically accepted views and fringe or outright pseudoscientific ones. Once again, coverage of the "intelligent design" issue has shown this failing. Let's single out Jerry Adler's feature in *Newsweek*, once again, for scrutiny.

Adler's report is heavily infested with comments from "intelligent design" proponents, and lavishly describes their various attacks on evolution. Yet Adler makes relatively little of the fact that the American Association for the Advancement of Science has explicitly stated that ID isn't science.<sup>9</sup> Neither does he mention something that even the Discovery Institute acknowledges--that at best, ID has published one paper in a peer-reviewed scientific journal that explicitly argues for the intervention of an intelligent

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<sup>8</sup> Jerry Adler, "Doubting Darwin," *Newsweek*, February 7, 2005.

<sup>9</sup> AAAS Board Resolution on Intelligent Design Theory, available online at <http://www.aaas.org/news/releases/2002/1106id2.shtml> (accessed April 5, 2005).

designer in the history of life,<sup>10</sup> and that paper's publication took place in very controversial circumstances. This in comparison to the veritable mountain of published scientific evidence supportive of the theory of evolution by natural selection.

While I'm whacking Jerry Adler, let me give you another highlight from his article, also indicative of a questionable attempt to "balance out" the pro-evolution and pro-ID perspectives. "As a scientific theory," Adler wrote (and notice his use of the word "theory"), "I.D. is making only slow progress in overcoming evolution's 150-year head start." There's so much wrong with this comment that it's hard to know where to begin. Jean-Baptiste Lamarck had an even bigger head start than Charles Darwin, so why isn't he winning the scientific footrace described by Adler? And what about the Reverend William Paley, who propounded an idea that sounds a heck of a lot like modern day "intelligent design" back in 1802?

*Time* magazine did a better job of covering evolution recently; Michael Lemonick and colleagues didn't succumb to phony "balance."<sup>11</sup> However, they did perpetrate the misguided notion that you ought to poll scientists on issues of controversy, rather than examining what's been published or looking at consensus scientific reports and assessments. They wrote, and I quote, "Some 350 scientists have signed a declaration challenging evolution. But many tens of thousands of scientists reject I.D.'s core argument--that evolution can't produce complex structures." I don't know how many times one has to say it, but science isn't a democracy.

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<sup>10</sup> See Discovery Institute, "Meyer Responds to Errors in *Chronicle of Higher Education* Article," September 20, 2004, noting, "My piece was merely the first peer-reviewed article to advocate intelligent design openly in a science journal." Available online at <http://www.discovery.org/scripts/viewDB/index.php?command=view&id=2207&program=CSC%20Responses> (accessed February 26, 2005).

<sup>11</sup> Michael D. Lemonick and colleagues, "Stealth Attack on Evolution," *Time*, January 31, 2005.

There's a lot more one could say about the media savvy ID movement and how it's been covered, but here's my bottom line. Writers about science need to realize that a wide range of special interests find it convenient to appropriate science for their own ends. Journalists should be on the lookout for telltale signs that science is being used as a political tool, and when this happens, actually bother to tell the public what's really going on.

#### **IV. "Balanced" Coverage is Getting Old**

So far in this discussion, I haven't touched upon any issues in medical reporting. But many of the same principles that I've discussed in relation to reporting on climate science and evolution also apply to reporting on developments in medicine. Let me provide you with a brief case study, which concerns research on the biological basis of human aging (sometimes called biogerontology). In this field, too, many scientists have grown critical of media coverage, which they believe has gone too easy on proponents of unproven life extension therapies.

Human history abounds with theories of life extension, from the alchemists' belief that ingesting gold would do the trick to 13th century Englishman Roger Bacon's contention that inhaling the breath of young virgins could rejuvenate elderly men. Against this backdrop of folklore, myth, and quackery, serious scientific study of aging has come into its own only relatively recently. Congress did not establish the National Institute on Aging until 1974.

But research on the biological basis of aging coexists today with a multibillion-dollar U.S. based antiaging industry, much of it built upon the sale of largely unregulated

dietary supplements and hormones. Scientists who study aging have launched a high-profile media campaign against the promoters of these substances. In 2002, in cooperation with *Scientific American*, 50 gerontologists, demographers, and doctors published a critique of today's antiaging movement.<sup>12</sup> The position paper surveyed a plethora of interventions, genetic manipulations, and dietary supplements purported to slow aging. It concluded: "There are no lifestyle changes, surgical procedures, vitamins, antioxidants, hormones or techniques of genetic engineering available today that have been demonstrated to influence the processes of aging."<sup>13</sup>

Yet once again, this viewpoint hasn't necessarily been reflected accurately in the media. Just consider one prominent example. In August of 2003, Fox News's Bill O'Reilly devoted a segment of his program "The O'Reilly Factor" to the question, "Do you want to live to be 150 years old?", and gave a leading gerontologist and a promoter of anti-aging medicine "equal time" on the show. Moreover, when the two disagreed about the safety and efficacy of human growth hormone, O'Reilly said, "We'll let the audience decide whether they want to get it."<sup>14</sup> Now ask yourself: Is this responsible medical reporting?

As I think this example shows, climatologists and evolutionary biologists aren't alone when it comes to dealing with artificially "balanced" media coverage.

## **V. Get Ready to Burn Bridges**

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<sup>12</sup> "The Truth About Human Aging," *Scientific American*, May 13, 2002.

<sup>13</sup> For a more thorough coverage of this topic see Chris Mooney, "A Time for Debunking," *SAGE Crossroads*, September 22, 2003.

<sup>14</sup> The O'Reilly Factor, August 12, 2003.

In conclusion, then, reporters clearly need to better understand how science-abusers exploit the journalistic norm of "balance"--demanding equal treatment for widely discredited views--and adjust their writing accordingly.

First, journalists should treat questionable scientific claims with considerable skepticism and find out what major peer-reviewed papers or scientific assessment reports have to say about them. Moreover, they should adhere to the principle that the more outlandish or dramatic the claim, the more skepticism it warrants. The fact is, nonscientist journalists can all too easily fall for scientific-sounding claims that they can't adequately evaluate on their own.

That doesn't mean that scientific consensus is right in every instance, of course. There are famous examples of cases in which individual scientists succeeded in dramatically recasting what was once considered known: Galileo comes to mind, as does a lowly patent clerk named Einstein. In the vast majority of modern cases, however, scientific consensus can be expected to hold up under scrutiny precisely because it emerged from a lengthy and rigorous process of professional skepticism and criticism. At the very least, journalists covering science-based policy debates should familiarize themselves with this professional proving ground, learn what it says about the relative merits of competing claims, and "balance" their reports accordingly. In doing so, I believe they'll thwart and expose many of the most severe forms of science abuse.

This is not to say that I'm fully comfortable with the idea of journalists serving as scientific gatekeepers. To draw an analogy, some have sought to increase the role of federal judges in determining the validity of scientific information used to justify government regulatory action, an argument I view with extreme suspicion. But unlike the

cases of judges--whom I hope we can prevent from playing the role of scientific arbiters--today's journalists have no choice but to wade into scientific debates and try to figure out who's making sense and who's just spinning. Given this necessity, I sincerely hope that they'll take that responsibility very seriously, and try their best to avoid aiding and abetting scientific distortions and misuses and abuses of information and expertise.

That doesn't mean it's going to be easy. What we're increasingly seeing today, I would submit to you, is that special interests will lash back at reporters willing to call a spade a spade. So even though reporters for *The New York Times* and *Washington Post* can't (and shouldn't) broadcast their political opinions, they may actually incur hostile treatment from sources simply by demonstrating a willingness to state the facts in an uncompromising manner.

This leads to a potentially troubling conclusion. As I see it, the more major newspaper writers debunk phony science outright, the more the "other side" will treat these reporters just as they currently treat writers working for political opinion magazines like *The Nation* or *National Review*. They will refuse to return phone calls, and they will bring charges of "bias." Refreshingly courageous journalists may find themselves under attack, and in some cases may even have Internet web sites spring up exclusively dedicated to debunking their work.

Personally, I consider backlash the inevitable by-product of good journalism, whether "opinionated" or otherwise. I say bring on the attacks. But I think we also need to realize that in the currently polarized political climate, demanding that major newspaper reporters debunk bad, agenda-driven science is tantamount to demanding that they prepare themselves to come under severe fire. For some journalists, particularly in

positions of prestige, that may be a lot to ask.

I don't know how to solve this problem, except to say that if, as a journalist, you don't like burning bridges, it may be time to think about another profession.