

the opposite: science illiteracy would diminish if vocal atheists like Richard Dawkins would just keep quiet about religion, a sanction that the authors don't impose on publicly religious scientists such as Francis Collins. Unfortunately, Mooney and Kirshenbaum provide no evidence that this prescription would work. Do they really think that if Dawkins had not written *The God Delusion* (2), Americans would wholeheartedly embrace evolution and vaccination and finally recognize the threat of global warming?

Mooney and Kirshenbaum's other proposed solution, training scientists in public outreach, does seem like a good idea, though hardly a novel one. After all, who among us wouldn't want Carl Sagan's ability to communicate the joy of science? But the authors fail to tell us how such training should be implemented and, more important, why (given the complex nexus of religious, political, and educational issues that affect the acceptance of science) more outreach is the best solution—or even an effective solution. What good is producing more “renaissance scientists” if nobody listens to them?

More than at any time in my life, I see Americans awash in popular science. Bookstores teem with volumes by Stephen Gould, Steven Pinker, Brian Greene, Steven Weinberg, Richard Dawkins, Michio Kaku, Edward O. Wilson, and Jared Diamond; natural history museums have become user friendly; and entire television channels are devoted to science and nature. Science education is readily available to anyone who is curious. And yes, we scientists need—and want—to share our love of science with the public. Still, we must compete with the infinite variety of claims on people's time and interests, including sports, movies, and reality shows. No matter how much atheists stifle themselves, no matter how many scientists reach out to the public via new media, we may not find the appetite for science infinitely elastic. This does not mean, of course, that we should refrain from feeding it. But figuring out where and how to intervene will take a lot more work than the shallow and unreflective analysis of *Unscientific America*.

References

1. <http://scienceblogs.com/pharyngula>.
2. R. Dawkins, *The God Delusion* (Bantam, London, 2006); reviewed in (3).
3. M. Shermer, *Science* 315, 463 (2007).

10.1126/science.1179131

THEATER: EVOLUTION

Bridging an Ocean

Claire Thomas

I am conscious that I am in an utterly hopeless muddle. I cannot think that the world, as we see it, is the result of chance; & yet I cannot look at each separate thing as the result of Design.

—Charles Darwin to Asa Gray, 26 Nov. 1860

The American botanist Asa Gray was one of the first people in whom Darwin confided his theory on the origin of species; Darwin even discussed his doubts with Gray. Now, archived letters between the two have been brought back to life in Craig Baxter's play *Re:Design*, which tracks the intersection of their lives and their science. The playwright constructed most of the piece with quotes taken verbatim from the prolific correspondence between the two scientists. He has stitched them into a compelling story that

traces the growth of Darwin's theories and his friendship with Gray. Baxter notes that “[Gray] made Darwin's ideas acceptable to the religious side in the States. He was very significant in the spread of [evolutionary] ideas to that continent.”

The play opens with the two men flanking the stage, pacing their respective rooms on opposite sides of the Atlantic as they muse on their letters. A modern-day character, Jemma, sits center stage, trying to make sense of the letters while researching a video project. The scientists strike up their correspondence in 1855, when Darwin asks Gray for information about the distribution of plants in North America. They bond over shared interests, and later Darwin tentatively tells Gray of his new theories on evolution.

Gray is at first uncertain about natural selection. However, after he receives a copy of *On the Origin of Species*, he is impressed and, despite his faith in Christianity, almost

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becomes convinced by Darwin's work. When the book sparked great controversy in American scientific and religious circles, Gray played a key role in getting Darwin's ideas accepted in the United States. A public statement of his greatly calmed the opposition: “[We] cannot be expected to let the old belief about species pass unquestioned.... A new theory, like a new pair of breeches, is sure to have hard-fitting places.” Darwin, who was not disposed to fight the intense debates surrounding his work, felt indebted to Gray and wrote thankfully: “I should have been fairly annihilated had it not been for four or five men, including yourself.... By myself I should be powerless.”

Darwin and Gray continued their correspondence through the U.S. Civil War and the following decades. Apart from science, they exchanged comments on politics, their families, and their health.

First written in 2007 on commission from the Darwin Correspondence Project (1), the play has been recast in several formats—from short, 40-minute renditions for scientific conferences to full-length theatrical versions. Baxter explains that the new addition of the contemporary character Jemma was intended to attract more nonscientific audiences. She occasionally steps into Darwin and Gray's time to help remove an overcoat or take a photograph. Although some of these exchanges jar slightly, her presence brings a domestic quality, making the 19th-century scenes seem more accessible.

Voicing Darwin. Terry Molloy as Darwin in *Re:Design*. He also delivered excerpts from Darwin's letters at the start of the Darwin Festival's morning sessions.



The friendship and obvious warmth between the protagonists is the play's most touching aspect. Despite their differences, Darwin and Gray always manage to find common ground. Baxter found their relationship inspirational, because they did not come to loggerheads over evolution versus religion—an all-too-often polarizing topic. He hopes that their example can teach us much about “how intellectual debate can be.”

References and Notes

1. www.darwinproject.ac.uk.
2. For additional coverage of the recent Darwin festival in Cambridge, see our evolution blog, <http://blogs.sciencemag.org/origins>.

10.1126/science.1179422