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## [\*\*America's Unwillingness to Accept Evolution En Masse is...Complicated, Part 1\*\*](#) [5]

A couple of weeks ago, I was strolling through an airport on my way to visit friends in D.C. when I spotted a tweet by Amanda Glaze (@EvoPhD) regarding a post on the HuffPost Education blog about evolution education. Amanda wrote: "I would have loved to have been consulted on this piece, or perhaps [@Paleophile](#) [6] or [@icbinns](#) [7]. Problem is complex." The post, by Huffington Post contributor Joseph T. Spadafino, is now unavailable (more on that below), but a cached version can be found if you do some digging. After seeing Amanda's tweet, I took a quick look at the piece, and from the headline alone, I knew there was a problem: "Americans' Unwillingness to Accept Evolution En Masse Is a Failure of Science Education." "HUH?" I replied to Amanda's original tweet, throwing @NCSE into her mix of potential future consultants. From there, my Twitter notifications started going bonkers.

I would have loved to have been consulted on this piece, or perhaps [@Paleophile](#) [6] or [@icbinns](#) [7]. Problem is complex. <https://t.co/IT10ISs7o8> [8]

I obviously wanted to write a blog post about what was written and on the Twitter conversation that followed, but you hear a lot from me and I thought it'd be nice if you could hear from some of the other experts in the evolution education arena—the ones that Spadafino should have consulted. Here, then, is a conversation among myself, Ian Binns (elementary science educator and researcher), Amanda Glaze (scientist/science educator and [NCSE guest blogger](#) [10]), Chris Lynn (associate professor of anthropology and director of the evolutionary studies minor at the University of Alabama), Caitlin Schrein (evolutionary anthropologist, [science writer](#), [11] and former teacher), and Adam Shapiro ([author](#) [12] and historian of science). Buckle up folks, this is a long one, to be spread over five parts. I know, I know, but trust me. It's worth the read.

**Stephanie Keep:** Okay, let's dive in. There is a lot not to love in this piece, but for me, the most head-scratching line is this one: "The reluctance of the American public to accept the theory of evolution en masse has become evidence of continued failure on the part of science education in this country." I grant that this initial red flag was calling out *education* and not *educators*, but Spadafino makes the leap to teachers in the very next paragraph, so it's fair to say that he wasn't calling out, say, lack of education funding or something more benign than how we all seem to have interpreted it.

**Ian Binns:** I gotta admit, this sentence really made me mad. Especially since I'm a science educator and he's an epidemiologist. Definitely made me want to question his experience in the world of education. Sorry, me on my soap box.



Wikimedia Commons **SK:** Hey, soap boxes are allowed! Clearly, Spadafino is not aware of Rule #1 of anything related to education or societal attitudes, or... well, almost anything: It's never that simple. Not to mention, really? He's blaming teachers for this? How naive. Finger pointing and simple answers get you nowhere, my friend. Teachers need support, not blame. I'm sure that most teachers would be delighted to spend twice as much time on evolution if: 1) they get to cut something out of their crammed curriculum, and 2) they are guaranteed no pushback from parents, administrators, legislators, community members...

**Caitlin Schrein:** I would add to Stephanie's list that teachers need to feel confident teaching the subject, as well. This confidence can come from education and training, but also from access to experts and high quality teaching resources. In my opinion, teachers who are really at the top of their game can teach just about anything as long as they have the resources to do so. Spadafino does say, "...the discussion...that will follow is not aimed at the large majority of enthusiastic and knowledgeable science teachers who know their subjects through and through." But what he's missing here is that there are many enthusiastic and knowledgeable science teachers who *don't* know specific areas of science, like evolutionary theory, through and through, but who are perfectly capable of teaching those subjects effectively when properly

supported.



There are resources available to help teachers discuss evolution confidently, but getting teachers the access is an ongoing issue. (Lee Roger Berger research team - <http://elifesciences.org/content/4/e09560>. Licensed under CC BY 4.0 via Wikimedia Commons) To return to Stephanie's original point, what I have learned from my research is that "acceptance" of evolution is not a straightforward concept and simply cannot be correlated with the quality of evolution education alone, an observation that Spadafino should have considered when writing his blog post. In fact, I feel strongly that researchers need to move away from measuring acceptance as an outcome of evolution education. There needs to be a paradigm shift in evolution education toward assessing how evolution education is connected to global citizenship; in other words, how it influences students' behaviors and decision-making about issues that affect their own lives and the lives of others.

**Amanda Glaze:** Stephanie, I have to agree with you here on all points. On reading the piece my initial thoughts were "wow, this is a full-out onslaught on science education as a whole." I find Spadafino's approach to this very interesting because this approach is precisely what we all (Caitlin, Ian, Chris, Adam, you) specifically recommend *against* in teaching evolution to others. If you attack someone in an effort to "help" him or her all you are doing is shutting down the conversation from the word "go." I will acknowledge that Spadafino states that he is not saying that all science teachers are bad per se, but from the title and throughout the post that message is lost and what is being said is, "science education is to blame."

**IB:** I agree here with your point about not "attacking" people. I've always argued that the moment we are perceived as attacking someone, or something central to his or her identity like a belief system, we've lost. The conversation is over at that point.

**Chris Lynn:** Definitely. This type of hubris and finger wagging shuts down any hope of conciliation. And the problem is such a subtle one that a heavy-handed approach is not only not helpful, but arguably harmful. I'm glad the Huffington Post took the post down.

**AG:** Not to mention that in most states teachers already have a laundry list of people from legislators on down telling them how their jobs should be done and that what they are doing is not good enough. There

are always strong and weak links in any system, but you should at least understand the system before making wide-impact commentary.

Coming up in [part 2](#) [13]: a word of praise for Spadafino's intentions, followed by worries about whether he understands what really goes on in a K-12 science classroom.

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