FORUM

Whose Foot in the Door?

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Many professional societies in the geosciences, including AGU, have made it their practice to accept for presentation almost every abstract submitted for professional meetings, including meetings of national and international stature. Unfortunately, it is becoming clear that this generous policy can have serious and unintended consequences.

As some readers will know, a tiny minority of AGU members are concerned with furthering a religiously motivated creationist agenda and (in all good faith, presumably) completely misrepresent science to that end. For most scientists this is a trivial matter. We know that an AGU abstract, for example, is just an abstract. It does not have the status of a peer-reviewed scientific contribution, although the research reported will often provide the basis for one. We know that radioactive decay rates depend on basic physical constants and the laws of quantum mechanics. We also know, from the fact that we can understand the structure of the oldest rocks or the spectra of the most distant galaxies, that these things have not changed for billions of years. If an abstract makes claims to the contrary, we might attribute this to human error, or to instrumental limitations, or even to some real and interesting confounding phenomenon, such as the presence of bacterial contamination in an unexpected location. In any case, we are unlikely to be misled, and we might even learn something. So, seemingly, no great harm is done.

However, as part of the ongoing attempt by creationists to attain scientific respectability, some contributors use abstracts for AGU or similar meetings to present completely nonscientific viewpoints on specific phenomena, so that they can subsequently claim that these viewpoints have withstood scrutiny by prominent geoscience societies. As things stand, abstracts based on material that is devoid of scientific merit can nonetheless become part of the documented record of the meeting. This opens the way to unacceptable abuse by such fringe groups, who would claim to be part of the scientific community, despite a very different view of natural processes.

Thus, unsound or misconstrued evidence [e.g., *Austin and Wise,* 1999; *Austin et al.,* 1999; *Baumgardner et al.,* 2003; *Wise,* 2003] arrives with a false pedigree of respectability at numerous locations, such as Answers in Genesis (http://www.answersingenesis.org) and the Web sites and "journals" of the Institute for Creation Research. In the United Kingdom the stealth creationist Web site The World Around Us (http://www.worldaroundus.org.uk/), which disingenuously describes itself as a supplementary teaching aid for high schools, cites *Baumgardner et al.* [2003] to pretend that the antiquity of the Earth is now questioned by scientists and embroiders its description of the abstract with additional unsound claims. There is even a minor cottage industry, at sites such as the admirable Panda's Thumb (http://pandasthumb.org/), devoted to rebutting such claims, and we can only regret the need to spend valuable time in this way.

It is impossible and undesirable to scrutinize each and every abstract with the level of rigor of a typical peer-reviewed contribution to a science journal, especially as, for example, the number of abstracts for the AGU Fall Meeting will soon reach 20,000. (Over the period 1986–1988, approximately 8600 abstracts total were submitted for the three Fall Meetings.) Nor would any of us welcome the additional demand that this would make on our time. However, no matter how daunting a task, we argue that we can no longer avoid some form of more careful assessment of conference abstracts. Perhaps the specific role of session chairs could be expanded to serve this purpose.

A second type of abuse is the misrepresentation of genuine science, supported by quote mining. Again, The World Around Us provides a clear example. In a closely reasoned article on the use of potassium-argon dating as a case study in scientific deduction [*Howard,* 2005], the author states, "One may argue that, because most of the products from the potassium-argon reaction are unknown, the geochronologist cannot actually know how the ^{40}Ar atoms came to be inside the mineral and, hence, cannot fully know the mineral's age." The article goes on to explain why this argument is unsound and should not affect our confidence in the validity of the method. Nonetheless, The World Around Us quotes this single sentence on its own to create exactly the opposite impression.

There is nothing new about this kind of dishonest argument. For many years, creationists have quoted Charles Darwin himself, on the subject of the complexity of the eye, as if it were an insuperable objection to Darwin's own conclusions rather than part of his initial statement of the problem. The only defense here is to avoid statements that can be easily misconstrued when wrenched out of context. This will cramp our rhetorical style, but the price may be worth paying.

AGU and other professional societies should establish, where they do not exist, and enforce objective acceptance guidelines for meeting abstracts that are based on high scientific merit. The enemies of science are well organized, well funded, and vigilant, and we ignore them at our and our children's peril.

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