

In defence of METI

To the Editor — Mark Buchanan's recent Thesis column¹ — 'Searching for trouble?' — accurately summarizes key objections to Messaging Extra-terrestrial Intelligence (METI), in which powerful, intentional signals are transmitted to specific astronomical targets, in the hope of a reply. Most notably, Buchanan characterizes METI as seeming "inherently risky".

The risk we most often hear about — alien invasion — is simply not plausible, however. Any civilization slightly more advanced than we are could already detect our presence through our accidental electromagnetic radiation². Only a virtual twin of modern terrestrial technology would pick up information-rich beacons but be blind to the BBC at interstellar distances. If we are in danger of an alien invasion, it's too late.

Then why bother with METI? The role of scientists is to test hypotheses. Through METI we can empirically test the hypothesis that transmitting an intentional signal will elicit a reply³. The Search for Extra-terrestrial Intelligence (SETI) posits that aliens are altruistically beaming messages Earthward for our benefit. Perhaps for some civilizations, however, we need to take the initiative to make first contact.

Several human cognitive mechanisms naturally pull for opposition to METI⁴. Omission bias leads us to think it's more dangerous to do something (transmit, in this case) than to do nothing (not transmit). In loss aversion people weighing risks and

benefits are more fearful of potential losses (threats of alien invasion) than desirous of potential gains (benefits of contact). The availability heuristic helps explain the tremendous impact of vividly accessible images of dramatic risk — such as Stephen Hawking's warning of aliens being akin to Europeans who conquered indigenous Americans — even if the actual risk is low.

So how can we evaluate whether METI is too risky? Some argue we should apply the precautionary principle⁵, avoiding clear risks. But which risks are clear, when we're uncertain about the motivations of extra-terrestrials? Attempting to avoid one risk — letting ET know we're here — may increase other more hazardous risks, for example, missing guidance that could enhance our own civilization's sustainability⁶, or averting attacks from aliens who would otherwise annihilate us for not reaching out⁷. Avoiding METI may also result in less dramatic lost opportunities, such as educational outreach⁸.

How then do we decide? We might wish that existing international protocols on interstellar communication included guidelines for *de novo* METI, but they don't despite urgent calls from some who drafted these protocols⁹. Indeed, consensus about METI may not be possible¹⁰.

There's another alternative. Scientists already have a process for judging the merit of METI projects: peer review. Decisions about allocating time for METI at publicly

funded observatories should rely on the same procedure used for competing experiments. If proponents can make a convincing case, when compared with other proposals, for effectively using a transmitter for a specific METI experiment, then time should be granted.

Whether or not we initiate an ambitious METI project has profound implications for future generations. We can avoid METI, curtailing research with no demonstrable risks and establishing a precedent to restrict science out of fear, rather than solid evidence. Or we can pursue an intriguing experiment that could transform our understanding of our place in the universe, whether or not we ever receive a reply.

As scientists, it's time we began transmitting in earnest. □

References

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Douglas A. Vakoch

METI International, 100 Pine Street, Suite 1250,
San Francisco, California 94111-5235, USA.
e-mail: dvakoch@meti.org