



Letters

MARINE MAMMAL SCIENCE, 21(4):779–781 (October 2005)
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SIGNAL-TO-NOISE: FUNDING STRUCTURE *VERSUS* ETHICS AS A SOLUTION TO
CONFLICT-OF-INTEREST

RESPONSE TO “RESONANCE AND DISSONANCE: SCIENCE, ETHICS, AND
THE SONAR DEBATE”, MARINE MAMMAL SCIENCE 20:898–899.

Gannon *et al.* (2004) take issue with comments made primarily by one of us (HW¹) at a special session on “The Science Behind Noise and Marine Mammals” at the biennial meeting of the Society for Marine Mammalogy in Greensboro, NC. The intent of the comments was misunderstood by Gannon *et al.* (2004) and others. The comments were that:

- (1) It is becoming clear that sounds produced by navies are dangerous to marine mammals (the U.S. Navy has admitted its own sonar was most likely responsible for the deaths of several whales in the Bahamas; National Marine Fisheries Service and United States Navy 2001);
- (2) The U.S. Navy funds a major part of marine mammal science (sponsoring 70% of all marine mammal research in the U.S., and 50% of marine mammal research worldwide);²
- (3) For instance, all the presenters of “The Science Behind Noise and Marine Mammals” at the special session were partially funded by the U.S. Navy, as was the conference itself;
- (4) This is a major problem, akin to a situation where most research on lung cancer, and a special information session on lung cancer at a professional meeting of oncologists, was funded by the tobacco industry.

Gannon *et al.* (2004) state that “. . . the objectivity of scientists investigating the effects of military sonar on marine mammals was called into question because of the source of their funding.” In fact, there was no such comment. Many marine mammal scientists, including some of us, have collaborated with military agencies in a variety of ways. HW’s point was aimed at the structural problem of naval funding of marine mammal science rather than at the objectivity and ethical behavior of any scientist. Conflicts-of-interest exist independently of the actions of those burdened by them, and one should, in a mature debate, be able to raise concern about the former without being assumed to have impugned the latter.

The problem faced by marine mammal science is severe. If all ONR (U.S. Office of Naval Research) funded scientists were completely objective, and even if there were no attempts to influence their public statements, there is a substantial problem of perception of conflict-of-interest. It is easy to understand why many scientists and members of the public see a potential conflict when the U.S. Navy, a major noise producer, directly funds the

¹ Personal communication from Damon P. Gannon, Center for Marine Mammal and Sea Turtle Research, Mote Marine Laboratory, 1600 Ken Thompson Parkway, Sarasota, FL, 29 March 2005.

² S. Tomaszewski, Oceanographer of the U.S. Navy; presentation at the First Plenary Meeting of the Advisory Committee on Acoustic Impacts on Marine Mammals, 3–5 February 2004, Bethesda, Maryland. Available at http://www.mmc.gov/sound/plenary1/pdf/plenary%201_tomaszewski2.pdf.

majority of research on the effects of noise on marine mammals and holds the dominant funding position in marine mammal research. Perceived conflict of interest "can erode public trust in science and scientists" (Anon. 2001). As scientists, that trust is among our most precious assets. The problem of perceived conflict-of-interest in marine mammal science has been previously raised by some of us (Whitehead and Weilgart 1995), and noted by the U.S. National Research Council's Report on Marine Mammals and Low-Frequency Sound (National Research Council 2000; p. 84): "... sponsors of research need to be aware that studies funded and led by one special interest are vulnerable to concerns about conflict of interest. For example, research on the effects of smoking funded by [the U.S. National Institute of Health] is likely to be perceived to be more objective than research conducted by the tobacco industry." The importance of funding by ONR has resulted in scientists being reluctant to speak out against the U.S. Navy for fear that it could affect their future research funding (Whitehead and Weilgart 1995). Even if the Navy actually took no action against researchers, such self-censorship would impede marine mammal science and conservation.

However, ONR does not function separately from the operational side of the Navy as Gannon *et al.* (2004) claim. There are clear demonstrations of this connection in public record e-mails disclosed by the U.S. Navy in recent litigation.³ Increasingly, in recent years, U.S. Navy funding for marine mammal research has also come from the office of the Chief of Naval Operations, further blurring any separation between the operational side of the Navy and marine mammal funding. The above-mentioned e-mail exchanges show that the operational U.S. Navy considered that ONR-funded scientists had obligations to the U.S. Navy in their public comments on controversial noise-related conservation issues. Thus, the behavior of funding agencies can subject scientists to unacceptable pressures that can make the conflict-of-interest real as well as perceived, and from which they should be protected. A statement such as that made by HW pointing out this potential conflict of interest would be uncontroversial in other fields, such as pharmacology, that have been faced with these issues for much longer than marine mammal science.

In the title, and final paragraph, of their letter, Gannon *et al.* (2004) lay the Naval funding debate out as an ethical issue. We disagree: while there are ethical sides, the primary problem is structural. More ethical guidelines will not solve the problem: scientists will always be human. We do not, for instance, expect parents to shed their bias when writing letters of reference for their children. Instead, we simply do not allow it, even though some parents could be capable of perfectly objective assessments. While peer-review, non-interference by the sponsor into the research and publishing, the absence of prepublication "vetting" of manuscripts, and other ethical guidelines undoubtedly help reduce some aspects of the problem of conflict-of-interest, it still remains a substantial issue. Because of the way marine mammal science is funded, it is vulnerable to a failure of public confidence. Why place scientists in difficult positions when one could restore trust by altering the funding structure?

We believe the funding system should be changed to safeguard the credibility of the field and to protect us all from conflicts-of-interest. The U.S. Navy is to be commended for its generosity in funding, but funds need to be administered independently, through a non-aligned body. An independent committee that has power and meaningfully represents all major stakeholders could establish priorities for the research, commission it, and recommend regulations. For instance, the U.S. National Research Council's Report on Marine Mammals and Low-Frequency Sound suggested: "Concern for peer review, efficiency, and independence argues for having an agency such as [the U.S. National Science Foundation] take the lead in managing an interagency research program on the effects of noise on marine mammals" (National Research Council 2000; p. 84).

Gannon *et al.* (2004) are correct that "... many members of our Society are funded by organizations having political agendas". While the U.S. Navy is a polluter, taxpayer supported, and overwhelmingly dominant compared with any other funder, it would also be desirable for environmental groups and others to channel their funds through independent bodies.

³ A transcript of these e-mails can be obtained from lweilgar@dal.ca.

We hope that the goal of “vigorous, constructive scientific debate” mentioned in Gannon *et al.* (2004) will allow a dispassionate review of the funding structure of marine mammal science. As *Nature Medicine* (Anon. 2001) notes for the medical community, marine mammalogy must “win back crucial public trust before the situation becomes irrevocable,” and we believe a crucial step is to remove the overwhelming position of the U.S. Navy in our field.

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