INTERNATIONAL SOCIETY FOR BEHAVIORAL ECOLOGY

ISBE NEWSLETTER

Newsletter Editor: Bart Kempenaers, KLIVV,
Konrad Lorenz-Institute for Comparative Ethology
Savoyenstrasse 1A, A-1 160 Vienna, AUSTRIA
Tel. +43-1-486 2121-31, Fax. +43-1-486 2121-28
Email: b.kempenaers@klivv.oeaw.ac.at

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Forum

Relevance and Responsibility in Behavioral Ecology

(from the Presidential Address to the Seventh International Congress of Behavioral Ecology, Asilomar, CA., August 1, 1998)

There is a tradition in the International Society for Behavioral Ecology (ISBE) for the incoming president to give an address at the time that he/she assumes office. I have decided to use this forum as a bully pulpit to make a simple argument: that we, as behavioral ecologists, have a responsibility both to our own science and to basic science in general, to communicate the excitement of our research, the importance of our research, and the relevance of our research, to as broad an audience as possible.

There is a tendency for many working scientists to isolate themselves from the public, to hide behind the doors of academia and to use the walls of theii universities as ivory towers to protect themselves from the probing questions and demands of the outside world. I don't argue that this isn't an efficient way to get science done. But such isolation has a cost in that it contributes to an increasing gulf in understanding between those of us who do science and the rest of society who not only use the results of science in their daily lives, but who also determine the position of science in society.

We are gathered here together at the last ISBE meeting before the new millennium. Twenty-five years ago, the Nobel Prize was awarded to three pioneering behavioral ecologists, Konrad Lorenz, Nilco Tinbergen, and Karl von Frisch. Since that early beginning, our field has grown and matured tremendously. Today, the state of our discipline is stronger than ever. These meetings reflect that strength. Many of you have commented positively on both the diversity of the topics of the paper and poster sessions and on the high quality of the individual contributions.

But this is also a time when governments around the globe are re-assessing their science policies and m-evaluating whether science should continue to be supported through public funds. If the answer if affirmative, what types of science are *to be* funded, and at what monetary levels? We find, more than ever, that the value of basic science is being challenged and that scientific priorities are becoming defined in terms of short-term economic gains.

My argument today is that it is essential for practicing scientists to become more actively involved in the public dialog about science. If we isolate ourselves in our laboratories, in our classrooms, or at our field sites, then scientific policy decisions will be made by persons who are illiterate about science; they will be made in the absence of adequate and appropriate input and expertise.

As one indication of just how wide the gulf has become between the policy-makers and the actual practitioners of science in the United States, it was recently reported that only 20 of the 435 members of the House of Representatives have a science or engineering background of the 100 members of the U.S. Senate, there are only two

individuals with such scientific training; and there are none in the President's Cabinet (Augustine, N. 1998 Science 279: 1640-1641). The same issue of ***Science magazine*** that provided this information recounted a story of an administrator from the U. S. National Aeronautics and Space Administration being questioned on the need for continued funding for meteorological satellites since we already have a national weather channel on television that provides such information! (Augustine, 1998, ibid.)

If we are going to reverse this pattern of ignorance about what science is and how science is done - and if we truly believe that basic science provides the critical ideas upon which much of applied science and technology are based, then we, ourselves, must become more actively involved in the process of communicating that message. We need not abandon our primary mission of doing science, but we must also seek out opportunities to communicate what we do and why we do it whenever possible.

As behavioral ecologists, we are in particularly good positions to enter the public dialog on science. There are two reasons why this is true. First, the questions we ask and the ***organisms we*** study are of inherent interest to the public. The popularity of the "Discovery" channel and other nature-oriented programming on television attests to the public's interest in our subject matter. In North America alone, 63 million people claim an interest in watching wildlife (1996 National Survey of Fishing, Hunting, and Wildlife-associated Recreation, U. S. Fish and Wildlife Service publication). People have a craving to learn more about *what* animals do, and ***why*** they do it - in essence, they are interested in the decision rules that govern animal behavior. And who is better qualified to explain such topics, and to generate enthusiasm and excitement while doing so, than the persons actually performing such research - namely, ourselves?

The second reason why we behavioral ecologists are particularly well-suited to bridge the information gulf that exists between scientists and the public is that the answers that we discover to our research questions are frequently of considerable importance for understanding what I refer to as the human condition. To the degree that decision rules that unconsciously influence our own behavior have ***been*** shaped by natural selection operating during our ancestral past, then many of the predictive models that we develop for understanding non-human species will be relevant and applicable to certain questions regarding our own species. In essence, the study of behavioral ecology provides us with an evolutionary "window" through which we can better view and understand ourselves.

My message today, then, is one of ***involvement:*** to encourage us not only to vigorously pursue our science, but also to share our excitement with non-scientists, to explain our discoveries to the public, and to pursue the practical implications of our discoveries with policy-makers.

I personally have been involved in three areas of basic research that turned out to have practical applications. These involved studies of (1) the orientational cues used by migrating birds, which led to the development of meteorological algorithms for predicting the volume of migrants aloft and thereby for minimizing the occurrence of, and damage resulting from, bird-aircraft collisions (Richardson 1974); (2) the importance of resource

distributions in shaping the social organization of animal societies, which contributed to the development of required "social soundness analyses" of the impacts of proposed development schemes on the social organization of the recipient peoples by organizations such as the Agency for International Development (Emlen 1976, 1980); and (3) the effects of genetic kinship and social dominance upon cooperation and conflict in animals that live in family-based societies, which is suggesting new, biologically-based solutions for reducing human family violence and dysfunction (Emlen 1997).

In none of these studies did I start out with the intention of finding solutions to applied problems. But the line between basic and applied science is often blurred, and results often have unexpected implications. To paraphrase the well-known movie character, Forrest Gump: "Relevance happens".

I suggest that the relevance of our work is often greater than we are willing to recognize. The reason, as discussed previously, is that we study why animals behave the way we do (ii an adaptive sense), and *how* their evolved decision rules cause them to do so (in a mechanistic sense). This, in turn, allows us to predict how animals will behave under a variety of conditions. If our findings are sufficiently robust to be generalizable across different taxa, then it is inevitable that many will be found to be applicable to humans as well. Being relevant is not a bad thing. It means that we can contribute to the public dialog on science at many different levels.

Theoretical and empirical advances in behavioral ecology have in the past, and will continue in the future, to advance our understanding of the human condition. We should recognize and embrace the relevance of what we do, and make its importance known to others. If we each accept an increased responsibility to communicate our findings beyond our immediate audience of peers, to the public, we can narrow the information gulf that currently separates scientist from non-scientist. We owe it to ourdiscipline, as well as to basic science in general, to do no less.

Stephen T. Emlen

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