

CHAPTER 19

RESEARCH, LECTURES, PERFORMANCES, AND OTHER ACADEMIC COMMUNICATIONS

Over my 57-year career, I have given many seminars, presentations at scholarly meetings, plenary session addresses at major meetings, keynote addresses, and banquet addresses. Once, at the University of North Texas, I gave the J. K. G. Silvey Annual Barbeque Lecture. I had known and respected Silvey from the late 1950s or early 1960s and was honored to give the lecture. The atmosphere was more relaxed than on most similar occasions, but was very professional. From the outset of my professional career, I practically never read from a prepared manuscript when making a presentation even if directly afterward I handed copies of the manuscript to be included in the proceedings of the symposium or conference. Almost invariably I used a few cards to prompt me on major issues and to ensure that the sequencing was appropriate. I felt, after observing speakers as an undergraduate, a graduate student, and finally a professional, that audiences did not respond as well to people who were reading from a prepared text as they did to people who were prepared to speak from a few prompting notes. On rare occasions, I have seen a conference speaker read an entire paper in a monotone without once looking at the audience. This situation is substantially different from classroom teaching where the material being taught in the beginning courses is almost always a compendium of research done by others. Even when the teacher is the author of the basic text being used, he has, at some time, spent enormous amounts of time going over the literature, selecting the most appropriate publications, reducing the professional jargon to a level suited to the literacy of the students, and integrating it in such a way that the disparate parts are connected in as smooth a flow as possible.

Although I produced one small high school text decades ago, I much prefer editing books where a knowledgeable person in that field covers each topic. The most effective teachers are those whose joy and zest for the subject are clearly apparent to the audience. A splendid example is Leonard Bernstein explaining classical music to schoolchildren, most of whom probably never heard this type of music or, until then, probably did not want to hear it. I am not denigrating the obviously successful efforts of the great educators by calling them performers. A good performer, above all, is attentive to audience response and, in the scientific world, one can judge this response best while viewing the audience, not the manuscript, when the point is being delivered.

The most exciting professional talks to me have always been when an innovator, who is also a performer, describes personal research. I had the privilege of hearing the late Robert MacArthur give a seminar at the Academy of National Sciences that focused on the development of the MacArthur/Wilson equilibrium model. In developing the model, MacArthur and his collaborator E. O. Wilson of Harvard University amassed persuasive evidence, which subsequently appeared in a monograph and numerous publications. In his seminar, however, the level of detail was kept to that minimum essential to follow MacArthur's train of thought and not so much that it would overwhelm the audience, however intelligent, which MacArthur could easily have done. Furthermore, he started with a brief synopsis of how he had begun asking the questions that led to the development of the model and the progressive steps that led to the final product. Well before the seminar had concluded, I realized that I had all the evidence before me to reach the same conclusions, even though I had not previously viewed the situation that way. This presentation was (for me) the ultimate combination of creativity and performance—namely, the ability to inspire members of the audience to view their own research in a different light. Subsequently, my students, colleagues, and I published a number of papers on the MacArthur/Wilson equilibrium model, and a long period of research on the colonization dynamics of aquatic microbial species on artificial substrates had begun for me. I owe all this professional inquiry to one outstanding seminar by an enthusiastic individual.

However, to be a successful performer (and again this is not a pejorative word), one must invest considerable amounts of time and energy in studying the audience and in connecting the talk to the audience's interests. Benefits of making connections between your research and that of a particular audience are innumerable. Also valuable are face-to-face meetings with colleagues from

other parts of one's own country and other parts of the world. I still regularly receive invitations to submit manuscripts, give keynote and plenary addresses to professional meetings, and the like from people whom I met 10, 20, or even more years ago. I fulfilled some requests by means of electronic transmission of the talks either by tape or disk. These technologies, combined with e-mail exchanges (despite my laborious, two-fingered typing), enable me to continue in the performer role despite the fact that health problems and markedly lower energy levels have virtually eliminated travel for me. Arguably, the most important benefits to professional communication are: (1) reconstructing one's reasoning process for intelligent professionals in some other area of specialization and (2) reacting to colleagues who might not respond to a journal article but will respond via e-mail, letter, phone calls, and so on.

Zest for one's professional activities is dramatically increased when one's colleagues, especially those in other disciplines, commend and literally applaud them! Even strong disagreement is energizing because one has engaged the minds of others, even if they are not yet persuaded to one's personal views. Apathy is another matter entirely! Fortunately, I have encountered it only rarely, always in isolated pockets and isolated incidents surrounded by notable successes.

Unquestionably, in the early part of my career, when biological journals were rather indifferent to manuscripts on toxicology, pollution, and what is now known as ecological restoration, the response of other disciplines, particularly engineers and chemists, to talks on these subjects was extremely reassuring, arguably essential, when colleagues in what I regarded as my own field of environmental biology were extremely doubtful that I was a real biologist. Engineers and chemists also put me in touch with sources of extramural funding, which enabled me to continue my research. Talks given abroad enabled me to establish personal relationships with colleagues who were beneficial in a variety of ways, both professionally and personally. The investment of time and energy, which I believe to be mandatory for anyone with transdisciplinary interests, was amply repaid. On the other hand, I gave huge numbers of both out-of-town and out-of-the-country seminars at times, many of which were not memorable in any way, although I am certain they were personally enjoyable for me at the time. Fortunately, I have always turned in an annual report to the academic institution employing me and have kept a file of these reports for the last 30 years. When I look at a 23+-year-old annual report, I am aghast, from my present viewpoint, at the large number of off-campus seminars, professional meetings, and the like that are listed. I hasten to add that I have colleagues at other institutions whose travel would make mine look trivial, even when I was traveling more. Even in retrospect, I cannot decide what the right balance between being a researcher and a communicator might be.

Immediate, gratifying satisfaction occurs after all successful performances. Each venture into new areas requires a certain amount of emotional support for such performances. However, long-term impacts of this type come from truly magnificent performers, whereas even modest levels of research are likely to be remembered to a certain degree. One can be a performer, even in science, without being a researcher, and a researcher without being a performer. Being a performer requires vast amounts of energy and endurance at particular points in time. Research, on the other hand, requires time for contemplation, reflection, and so on and large blocks of time, unbroken by travel, airport delays, and the like. I realize that the electronic miracles of recent years have extended my career as a performer. Research is more amenable to old age than performance. Being an innovator in one's old age is easier than being a performer, at least for me.

I still publish in professional journals, but many of the manuscripts synthesize, integrate, and interpret concepts and are not based on hard data that I have generated personally. Over half of the recent publications involve ethics, value judgments, and humankind's relationship with natural systems. I also review many more books than I did in the past. The Internet enables me to communicate with colleagues worldwide. I am grateful that these opportunities are still available to me!