

American Association for the Advancement of Science

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Balance in Science

Science is a low-paying profession. The reason that scientists, who are a fairly intelligent group, put up with this situation is the psychic bonus, the belief that we are conquering difficult problems crucial to the future of mankind. Inevitably this beneficial self-hypnosis leads to some parochialism, which creates problems for an interdisciplinary journal like *Science*. Each group is convinced that the minimal space allocated to its subdiscipline must be the result of chicanery or benign neglect. Even biological scientists, who have a long history of predominance in *Science*, complain that their subspecialties are not adequately represented. Molecular biologists see too many reports on whole animal research, those not involved in AIDS research see too many articles on AIDS, and so on. It seems worthwhile at this time to explain some facts and policies in regard to the selection of research papers for *Science*.

First let me emphasize that manuscripts are always evaluated by individuals in the same discipline. Psychologists review psychology papers, anthropologists anthropology papers, physicists physics papers, et cetera, and in general the reviewers do an excellent job. They may lobby for more of their own discipline in the magazine, but they do not water down their standards in order to add to the number count of their specialty. The percentage of acceptances has remained relatively constant across the major disciplinary lines, and thus the types of papers appearing in *Science* are in general proportional to the manuscripts received. Within subdisciplines, however, there are changes as new discoveries create new frontiers, and some fields "mature." This proportionality, not surprisingly, corresponds roughly to funding levels in the different subdisciplines.

Is there an editorial bias? The answer is, "Yes," but for the general and the innovative, not for one discipline in preference to another. The heavy representation of biology has been true for *Science* since its inception. Nevertheless, there is a commitment on the part of the staff of *Science* and the AAAS to broaden the balance in the magazine. The AAAS has endorsed a policy of adding pages to increase the underrepresented areas without decreasing the strength in biology. Steps have been taken in regard to the social sciences, which are an increasing part of the journal today. Due to the fine work of our deputy editors and a specially recruited staff in the physical sciences, the groundwork for added emphasis on the physical sciences (knowledgeable editing and greater publication speed) is in place.

Occasionally there is a self-fulfilling prophecy situation, in which individuals seeing fewer papers in their area of specialization conclude that the journal is no longer interested in that specialty. But *Science* is interested in the entire range of science, and the transient ebb and flow in one area should not discourage any author who has an appropriate contribution. There is a comfort in numbers, but there is also honor for the lonely pioneer. Others will inevitably follow in his or her footsteps.

Because of the large circulation of *Science* (approximately 10 to 20 times that of most specialty journals), it must remain small in order to be economical. That means that we must continually distill the best from each area to accommodate the added productivity of modern research. The wide circulation of *Science* means that the number of personal subscribers, library copies, and pass-along readers in a subdiscipline is usually as large as the number of readers of specialty journals in that area. It might be argued that there is no need for an interdisciplinary journal, that an assortment of larger specialty journals, each with a limited circulation, is enough. To me the answer is that both are needed. The excellent specialty journals print thousands of pages that will never be feasible for *Science*. At the same time, this is an age of increasing interdisciplinary research and it is not always apparent which contributions in one field will have dramatic importance in another. Nuclear magnetic resonance, lasers, and positron emission are being used by biologists. Social science today considers both nature and nurture. The scientist who is too provincial is liable to miss interdisciplinary applications to his own research.

Science's Research News and This Week in *Science* are attempts to aid in interdisciplinary communication, but research articles at the cutting edge of many disciplines in a single journal are essential for that process. Balance does not mean that percentages are assigned to each subdiscipline, but it does mean that the journal is dedicated to a general balance in which articles from all disciplines are welcome.—DANIEL E. KOSHLAND, JR.