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## Improving Scientific Communication

THE keyword in science these days seems to be *communication*. With an increasing number of scientists and an exponentially increasing volume of research reports, it is important to assure speedy publication, wide dissemination, and—above all—reading of what has been written.

Augmenting the number of journals and expanding the present ones are inevitable steps. Digesting and summarizing, microfilming and microcarding are all helpful adjuncts. But at the present time the processes of manuscript preparation, editorial consideration, and editing are considerably hampered by the diversity of journal styles and differences in what is considered proper manuscript form.

Scientific journals, even those printed on the same presses, differ unaccountably, unpredictably, and actually unreasonably in their editorial requirements. Most demand one, some two, and some even three copies, double- or triple-spaced, of any manuscript intended for publication. Some journals specify original and unmounted drawings, others insist on unmounted photocopies, while still others request photographic negatives. Footnotes, marginal notes, appended material, textual references, and quotations must be prepared differently for each journal or family of journals.

References are a particular problem. There seems to be no end of ways to cite Adams and Zinn who published a note in 1939. They may appear as a subscript <sub>1</sub>, superscript <sup>1</sup>, or parenthetical number (1), chronologically, alphabetically, or in order of appearance, or grouped with half a dozen other references. It may be proper form to mention them by name, or only by number. In the "Bibliography," "References," or "Literature Cited" Adams and Zinn may be listed with complete names or by initials (reversed or not). The title of the article may be included or omitted as in *Science*, and the journal spelled out in

full along with the place of publication, or abbreviated in half a dozen ways.

Such variability hampers manuscript preparation. Conforming to an unfamiliar journal style may require several days of rewriting and checking. If carried out imperfectly it hinders consideration of the manuscript and may require a lengthy trip back and forth for revision, while drawing on the editors' time and patience. And, at the end of the line, an unfamiliar publication style slows up reading until superscript numbers, asterisks, daggers and time-table symbols are decoded, and until the authors' institution is located in the hedgerows of acknowledgements and listings of contract numbers.

These differences in editorial requirements and styles of publication, though expressing journal individuality, are not the result of differing printers' requirements. On the contrary, it is often a burden for the printer to keep up with diverse journal styles, and it is a problem to cope with mounted glossies for journal A and unmounted originals for journal B. This, too, helps to delay "communication."

As a practical suggestion there should be some common agreement on the preparation of manuscripts, the number of copies required, the use (or nonuse) of photocopies and mounts, text references, and the extent to which citations are listed in full. Such agreements, of course, would have to be reached by journal editors themselves, after reviewing their common problems, and after weighing the advantages of completeness against the minor economies gained by eliminating titles and complete pagination. But such agreements would benefit authors, editors, printers, abstracters, and readers—all links in the chain of scientific communication.

STANLEY MARION GARN

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