The major pulmonary and critical care journals publish more than 5,000 articles every year. To read these would require more than 25 hours each week. Despite the surfeit of information, the average physician is starving for wisdom. The aim of scholarship is to increase understanding, not just accumulate discrete facts. A stack of papers no more conveys wisdom than a pile of bricks makes a house.

If new research is to improve patient care, reports need to be fitted into the mosaic of existing knowledge. General medical journals, such as the New England Annals, publish a much higher proportion of review articles than do subspecialty journals. But the audience for a subspecialty journal is different from a general medical journal. The first rule of writing is to identify your audience. Review articles that appeal to general physicians are unlikely to satisfy subspecialists, who are expected to have a more detailed and nuanced understanding of subjects in their field.

The first step in writing a review article is selecting a suitable subject. Authors of a review article in AJRCCM may pick a broad field suited to a comprehensive overview in a State-of-the-Art (1–14), encapsulate a surge of rapid progress in a Pulmonary Perspective (15–30), turn a searchlight on an overlooked subject in a Critical Care Perspective (31–40), capture advances in related fields in an Update in Nonpulmonary Critical Care (41–53), convey practice pearls in a Clinical Commentary (54–63), share the secrets of scientific discovery in a How it Really Happened (64–78), or comment on a social conundrum in an Occasional Essay (79–83). By definition, a review article does not include the secrets of scientific discovery in a How it Really Happened (64–78), or comment on a social conundrum in an Occasional Essay (79–83). By definition, a review article does not include original data. Yet, the perspective should be fresh and the synthesis unique. Authors must avoid a rehash of views expressed in existing reviews.

When writing a state-of-the-art review, the author needs to amass and synthesize a huge number of original reports. The skill is akin to that of a landscape artist. When ranging over a great sweep of scenery, the naked eye takes in millions of shapes, shades, and textures. The painter reduces this complexity to a few hundred brush strokes through ruthless selection, intensifying some contours, ignoring others, and reordering and harmonizing the relationships between elements. Great compositional skill is needed to place the elements in a coherent space, avoiding discontinuities and depth-of-field distortions, and construct a unified and expansive canvas that achieves realistic verisimilitude.

Likewise, the author of a comprehensive review article stands back to form a panoramic view of a broad field. He or she sifts through a mass of miscellaneous detail, selecting the most relevant, and omitting trifling reports and ephemeral fads. The value of the article depends as much on the dross and minutiae omitted as on the pearls included. The author does not cover every report in a field, because all are not of equal quality. In contrast to the deluge of references generated by a PubMed search, the good review article serves as a quality filter, directing the reader to the most influential journal and book literature. An author’s selection of primary and secondary literature also conveys the legitimacy of his or her framework.

One of the most difficult tasks in writing a review article is finding the best structure because manuscripts do not follow the fixed formula (introduction, methods, results, discussion) of research reports. The structure should facilitate sequential unfolding of ideas in a logical order. To avoid getting lost mid-journey, readers need to know where an author is coming from and where he or she is going. The best structure may not become obvious until several drafts have been written; indeed, the failure to change the structure during the course of writing is a warning that it is likely wrong.

Taking the mass of raw reports, the author classifies, interprets and integrates the material, shaping it into a compact product that is more manageable for the reader. The author moves back and forth between the universal and the particular, alternating between use of a telescope and a microscope. He or she selects studies that are especially insightful, and locates them in the overall pattern. A major challenge is compression: how to take a tangled mass of facts, eliminate those that do not enhance understanding, and weave the remaining threads into a seamless fabric. The good review article is not a compendium of sequential studies in the manner of “Smith found this and Jones found that.” Instead, the author integrates broad conceptual ideas into a narrative, and the primary investigators disappear into the prose.

Another challenge is how to write sentences that form a linear sequence, one connected to the next by a logical extension of thought. Sustaining reader interest over the course of a long review requires the skill of a storyteller. A good narrative pulls readers along without them noticing the tug.

Some journals classify narrative review articles as less reliable and of lower intellectual caliber than “systematic reviews” (84). The compulsive tracking down of every trial on a topic is imperative when writing a review article on the basis of a metaanalysis of randomized clinical trials; it is also important to tabulate numbers, inclusion and exclusion criteria, and other such detail of the trials. A scrupulous search system might be expected to limit bias, although vigilant peer review will afford greater reassurance against this flaw (85–88). The uniformity of the approach to writing such review articles enables a formulaic presentation. But the compulsive retrieval of every original paper is only one essential when writing a review article (and the least challenging). A punctilious listing of every detail produces prose that is prolix. It may also detract rather than enhance understanding, which is based on being able to see a forest among the trees. A catalog approach is ill suited to communicating a deeper understanding of biological principles garnered from the comingleing of molecular research in animals with bedside studies of pathophysiologic mechanisms in patients. A catalog approach is inappropriate for subjects reviewed in Nature Medicine, PNAS, JCI—and most subjects reviewed in AJRCCM. That a review article does not carry the epithet “systematic” is not to say it was written in a desultory manner and the presentation chaotic. The skills in writing a narrative review are more intellectual than mechanical. Teams of “systematic reviewers” of questionable provenance are no substitute for wisdom derived from years of marinating in a subject and reflecting on its complexities. The worth of the final product depends on the author’s conceptual sophistication, power of apprehension, cogency of analysis, sense of proportion, skill in condensation, explanatory force, and felicity of exposition—qualities not emphasized in “quantitative systematic reviews” (89–91).

A reader’s best guide that a review article will be worth reading is a foreknowledge of the journal’s peer-review standards (92). At AJRCCM, peer review starts when the author submits a letter of intent and an outline of a planned article. (Details of information to include in a proposal are provided...
in our Instructions for Contributors.) Proposals are reviewed anonymously by six or more experts. Many proposals are declined, and authors getting a green light are also given concrete recommendations for improving the planned manuscript. Completed manuscripts undergo rigorous peer review and only the fraction satisfying the highest standards is published. The criteria differ from those used for original research reports. Referees of research reports focus on novelty of a hypothesis, rigor of experimental design, soundness of the methodology, approach to data analysis, and plausibility of the findings. With a review article, referees evaluate the importance and relevance of the subject, comprehensiveness of the author’s coverage, emphasis given to individual studies, legitimacy of the analyses, new insights and ideas being offered, ability to synthesize and integrate disparate observations, and the cogency and lucidity of the prose.

Scientific journals rightly set great store on original research. But much research consists of mopping up operations (93), and the amount of truly new information is less than we think. George Stigler (94), the 1982 Nobel Laureate in Economics, pointed out that “originality is a more complicated virtue than most discussion seems to recognize, and that its role in progress is not easy to state or assess.” He continues that, “originality may also impair progress. Originality means difference, not improvement, and one may invent new errors as well as new truths.” Moreover, new truths do not emerge fully formed. Accordingly, review articles help advance science. Progress in science depends on a certain aging process, whereby earlier findings are reanalyzed, previously undetected ambiguities are identified, residues of truth are extracted before a disproved theory is discarded, concepts are refined, and the range of applicability of new ideas is identified. AJRCCM contributes to a bountiful harvest of research reports. We hope that our review series also speed up scientific fermentation.

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Martin J. Tobin
Editor

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