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EDITORIAL

In Favor of Scientific Debate

Two Commentaries are published this month that represent one side of a continuing debate among chemists working on metal-catalyzed oxidation reactions. Each takes issue with the conclusions of an Article published previously in this Journal. In recent years, published debate has become a rarity—so infrequent, in fact, that we sometimes forget that debate in science publishing was once the rule rather than the exception.

The problems studied by chemists in the early days of modern chemical research were complex, and the experimental tools were primitive. Knowledge and understanding were advanced by disclosure of experimental results and by debate about their interpretation. In the era before refereed journals, such debates occurred regularly at meetings of scientific societies. Papers were read and discussed by members during these public encounters; debate was invited and enthusiastically pursued. The published proceedings of those meetings became the permanent records of those debates.

The practice of prepublication peer review appeared with the advent of modern scientific journals, and the tradition of vigorous public debate in scientific circles began to diminish in importance. Dissenting opinions were rarely expressed openly after a paper was published because it was assumed that papers had already undergone an extensive examination process—admittedly a clandestine protocol by comparison with face-to-face debate—to purge papers of all but the “purest” of scientific content. Today almost all scientific journals depend on

this prepublication process of peer review, and while fascinating scientific debates continue behind the scenes, particularly between authors and reviewers of submitted manuscripts, the journal editors are often the only witnesses.

The development of more sophisticated research tools also contributed to this quieting of public discussion. Technological advances enabled chemists and biochemists to obtain such convincing results, particularly in the area of structure determination, that debate for a time seemed less critical to the process of scientific inquiry. But as laboratories worldwide increasingly address multidisciplinary problems, the time may have come for scientists to rediscover the value of vigorous public discussion. Even with the tools of modern research now widely available, the interpretation of ever more sophisticated findings on increasingly complex chemical and biochemical systems may once again best be tested by debate.

Logical discourse has always been at the heart of scientific process, and given the great advances in modern communications, inquiry begun by an individual can now be continued by the global community of scientists. It is in this spirit that we publish these two Commentaries.

Joan Selverstone Valentine

Editor-in-Chief

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