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When Scientists Disagree

The possibility that advances in science may have important social consequences is not new. Nor is it novel to find scientists in dispute about the meaning of a particular finding. But the recent striking increase in the first possibility has made the general public forcibly aware of the second. The result, in part, is a distrust of science arising from honest perplexity, for one may well ask who shall decide when scientists disagree. What the scientific enterprise needs is something better in the way of public relations, and the first point to make clear is that disagreement in science differs from the more familiar kinds of disagreement in an important respect.

In analyzing kinds of disagreement, it may be helpful to borrow the distinction between disagreements in *attitude* and disagreements in *belief* that was introduced by the contemporary American philosopher C. L. Stevenson. Suppose that a group of boys are considering playing a game. If one wants to play football and another baseball, this is a difference in attitude. But once football, say, is decided upon, and its rules accepted, then, if one boy claims that his opponent was offside and the latter says he was not, this is a difference in belief. A corollary of this distinction is that there is no logical connection between disagreements in attitude and disagreements in belief, although the two may be related as a matter of psychological fact. For example, if one of the boys wants to play baseball under the impression that it is spring, when in fact it is fall, his choice of game might change once his beliefs were corrected.

This is not to deny that the disputes usually encountered in the world are complex affairs. The point is that they are complex in a special way, for they involve differences both in attitude and in belief. For example, in a dispute between management and labor, the opposing parties may disagree about how much profit management is making—that is, in the facts of the case—as well as in their respective judgments about what constitutes a fair profit. Other examples of disputes that are complex in this special way include the differences between the Republicans and the Democrats, between the supporters of integration and of segregation, and between the faculty and the administration of a college.

In broadest outline, a scientific dispute differs from other disputes in that it involves only one kind of disagreement, a disagreement in belief. The attitude accepted by both parties is the scientific attitude, which finds that the way to answer a question, if it can be answered at all, is by an appeal to experiment—not by an appeal to force, to a vote, to authority, or to personal revelation. Further, the appeal to experiment must be conducted according to those principles that sometimes are collectively referred to as scientific method (see editorial in *Science* of 6 Sept. 1957).

To be sure, this account of the difference between scientific disagreement and the more familiar kinds of disagreement is oversimplified. Actually, in science there may be differences in attitude within the area of fundamental agreement. For example, in seeking an explanation for a particular behavioral disorder, one group may stress the subject's early training, another may emphasize organic disturbances. Nevertheless, when there is disagreement in belief, but agreement in scientific attitude, there is at least some assurance that the dispute is only temporary, because further application of the same method, a method accepted by both sides, may decide the question.—J. T.