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## The Doctors Disagree

One source of happy expectation behind the American-British-Soviet negotiations on the cessation of nuclear tests was that it would be easier for technical experts to agree on scientific truth than for diplomats to agree on political measures. The hope was that once the experts established what was technically feasible in the way of discouraging any country from conducting secret tests, the diplomats could set about the task of turning a scientific possibility into a political reality. In the summer of 1958 a conference of experts did succeed in agreeing on an inspection system, which, on the basis of evidence then available, was thought to provide adequate safeguards. Unfortunately, a conference of experts in 1959 proved less successful. Running from 25 November through 18 December, the conference produced agreement on possible improvements in instrumentation, but left other important questions unresolved.

The American and Soviet delegations each have their own ideas about who is wrong in these disputes, and any expert in one of the appropriate fields who will take the trouble to read the verbatim records of the conference, or the separate briefs filed at the end of the conference, can make his own attempt at scientific objectivity. A test of objectivity, however, is also open to the non-expert reader. He can consider which of the two sides displayed the greater tendency to stray from the scientific issues at hand. For scientists not only may find it difficult to reach agreement, but they are just as prone as other men to bring in irrelevant arguments to discredit their opponents.

A typical example of straying from the issues at hand occurred in what was probably the most important area of dispute, the interpretation to be put upon the new seismic data from the American Hardtack experiments. The Americans claimed that the Hardtack experiments show that the 1958 conference of experts was too optimistic about the effectiveness of the control system it recommended. Specifically, the Americans claimed that the direction of first motion of a seismic needle is less effective in identifying seismic disturbances as earthquakes than had previously been thought. Since the instrumental set-up used in the Hardtack experiments was not precisely the same as that recommended by the 1958 conference, the Americans also offered a demonstration that the set-up was fully adequate for the purposes of testing the method of first motion. The Soviets were free to question this demonstration, and they did, but somehow time and time again they came back to the point that the Hardtack instrumental set-up after all *was* different. This matter of difference is irrelevant—the question is whether the American demonstration of the full adequacy of the set-up is valid—but the fact that there is a difference could be made to leave the impression that the Americans were trying to palm off unreliable data.

Following the failure of the 1959 conference to reach agreement, President Eisenhower declared on 29 December that the United States would not extend its 14-month moratorium on testing beyond the expiration date of 31 December, but that any future tests would be announced in advance. No immediate American tests are expected. On 3 January the Moscow radio broadcast a pledge by Premier Khrushchev that the Soviet Union would not explode nuclear weapons unless the West did. Britain's policy is not to resume testing so long as "useful" negotiations continue. Political talks were resumed again on 12 January, and it may be that the conference of experts did serve a useful purpose. Prior to the conference it seems that the Soviet scientists not only disagreed with the American scientists, but did not really understand the new material that troubled them. Now the Soviets understand, and if what bothers American scientists is valid, it may come to bother Soviet scientists too.—J.T.