

LETTER TO THE EDITOR

On Dr. Dunnigan's Commentary Linking Chrysotile Asbestos With Mesothelioma

Debate raised by Dr. Dunnigan's commentary (1988) illustrates graphically the problem of translating scientific evidence in all its fragility and uncertainty into legal decisions in which none of this is reflected. Even those of us working in the field need to be reminded that science proceeds, not by proof, but by refutation and suggestion, refutation of hypotheses that are not consistent with observation or experiment, and suggestion of new or expanded hypotheses that might be. Medical diagnosis, in particular that component which deals with considerations of causality, follows the same steps, invariably using as its basis observations of communities (epidemiologic studies) from which to formulate probabilities concerning the individual case.

A pronouncement on an individual case is thus always in the nature of a hypothesis, the best to explain the facts about the case, no more, no less. Yet the court records seldom reflect this uncertainty and the expert witness who tries to reflect it is ill received. Even when he/she tries to transmit the complexity of the scientific evidence, the court will frequently counter with a question, the answer to which must be formulated on the basis of often unrealistic speculation, and the tentative nature of the answer is lost in the record.

Failure to reflect this uncertainty in court proceedings does a serious disservice to the scientific approach by degrading it in the public mind. More than ever today, when environmental issues are debated in public forums, including courts, long before the scientific evidence for causality is complete or clear (particularly for diseases such as cancer which have a long incubation period), it is essential that the public and their courts understand the scientific information base if it is to be used in their decision making. In my view, the public is perfectly capable of seeing beyond the painstaking process of observation, induction, and deduction required by the practitioners of science, of understanding the lack of precision in the words they use to describe their findings, and of appreciating the potential of the scientific approach, which is, after all, the only one we have to improve our knowledge of natural events and our lot. The limits of the scientific approach are those of the basic forces which drive it: human senses, human intelligence, and human creativity. Rather than mocking at the fragility of scientific evidence in its institutions including its courts, could not the public be invited to encourage, enhance, and share its potential?

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REFERENCE

Dunnigan J. (1988): Linking chrysotile asbestos with mesothelioma. *Am J Ind Med* 14:205-209.