

Homicide (2). In my opinion, they do not support, and largely refute, the argument for stronger legislation. Discussion of the nature, enforceability, and probable effects of such legislation are perhaps out of place in *Science*, but I submit that the opposition case is much stronger than was presented. In view of FBI statistics showing that 82 percent of offenders were repeaters with an average of 6 arrests, 3 convictions, and 2 imprisonments, and of Wolfgang's finding that two-thirds of the killers in his study had previous arrest records, it appears that the problem of criminal violence can best be met by appropriate treatment of the relatively small number of known offenders. Such proposals would meet little objection, and would be far more efficient than attempts to regulate the entire population, most of whom are not and never will be killers.

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References

1. *Uniform Crime Reports* (U.S. Government Printing Office, Washington, D.C.).
2. M. E. Wolfgang, *Patterns in Criminal Homicide* (Univ. of Pennsylvania Press, Philadelphia, 1958).

Objectivity in the Courts

Walsh's comments (25 Apr., p. 411) concerning university faculty ties with industry and conflict of interest problems were most interesting. Maintaining a neutral status and a posture of objectivity is a most difficult task for today's university applied scientist or engineer. His talents are useful to both industry and government.

Universities normally accept faculty involvement in consulting, so long as it does not lead to erosion of academic performance, because they feel it contributes to rather than detracts from the individual's performance. The faculty member keeps up to date as a result of his contact with the "real" world and the students gain through their exposure to a teacher whose skills have been kept keen through use. The university in turn benefits through such contacts and the quality of the education it can offer.

When the faculty member is called upon to apply his expertise to an issue involving a government-industry confrontation, he can still make an "objective" contribution as a member of a state or federal commission or study

group. But he may lose his objectivity and acquire the identification of an "industry" or "government" man if he has to testify in court or in regulatory proceedings. Whether real or imaginary, this identification remains with him. In the Santa Barbara case the state officials are requesting faculty members to appear at advocacy proceedings. Those faculty members who testify for the state may enter the courtroom as objective witnesses, but they will leave as advocates of a position. In fact, even if they do perform objectively, there is some question as to whether or not they have provided the service for which they have been paid.

The "public service" obligation of engineers or scientists working in universities supported by public funds raises a question. I note that California did not wish to use petroleum engineers from their own state agencies because "these men suffer from a reverse conflict of interest, since, as state employees, their objectivity would not seem as irreproachable in a courtroom as that of their university colleagues." Is it not likely that faculty members appearing on behalf of the state as part of their obligations as state university employees would soon be considered to be lacking objectivity as are all other employees of state agencies?

To my mind, under current circumstances, if industry or government wishes objective university faculty members, it cannot also expect them to appear on their behalf in the courts or at any hearings which involve personal advocacy.

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Slippery Water in Fire Hoses

All of us with Rand in New York City appreciated Etzioni's calling attention to our work as an example of what can be done for the cities ("Agency for technological development for domestic programs," 4 Apr., p. 43). Unfortunately, the specific work by Rand which he cited is mythical. We have *not* "found that in responding to a fire alarm it is more efficient to send, first, a jeep with a few firemen." In the New York Times (29 Apr. 1968), it is true, Peter Szanton was quoted as mentioning this unusual procedure—

one that in related forms has been used in small western towns and in some European cities. But as the *Times* story made clear, he described its application to New York City not as a finding, but as "only an idea that is still germinating and far from ready for application."

In contrast, we can point to one recent example of successful technological innovation in fire protection. On 13 May, New York City's fire department demonstrated "slippery water"—water containing minute quantities of a special chemical that enables it to flow through fire hoses with far less resistance. In conventional hoses it will permit the delivery of large volumes of water over greater distances. Or, where needed, it will permit the use of a smaller, less bulky hose, allowing fire fighters to climb stairs and reach remote locations more rapidly. Edward Blum, leader of Rand's New York fire project, initiated this idea. It is now being developed and adapted by the fire department, helped by Rand and the corporation producing this chemical, Union Carbide. In this regard, one of Etzioni's arguments is most pertinent. Although New York is paying for this R & D, cities everywhere will be able to benefit from it. Until some means is created whereby all users of such research can share the costs, New York and other pioneering cities will be bearing a disproportionate burden.

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What To Expect

Seabury's review of Michael's book, *The Unprepared Society* (4 Apr., p. 58), indicates that future Americans may expect "fatal air invasions over New York City." Our country already spends a disproportionate amount on military defense, while the fight against environmental deterioration is meagerly financed. Most Americans I think realize that "fatal air invasions" are much more likely than "fatal air invasions," but for those who do not comprehend the tragedy of resources allocated for arms rather than air, the confusion ought not to be multiplied by typographical errors.

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