



## OUR RESPONSIBILITY



Does science<sup>a</sup> have the right to unleash any more forms of destruction? Are scientists, individually and collectively, responsible for the ultimate uses to which their professional endeavors are put?

These questions, uppermost in the minds of many scientists 25 years ago, again are being asked as the Vietnam war drags on interminably. As a result, scientists have appeared on TV to deplore the possibility of using nuclear weapons,<sup>1</sup> have boycotted a scientific symposium sponsored by a laboratory engaged in developing biological warfare agents,<sup>2</sup> and in various other ways are becoming more vocal on several important matters of conscience. They are also debating the propriety of debating their views on social issues.

Although each must live with his own conscience and ultimately be judged by his response to that conscience, we would like to try to shed some new light on these questions.

We contend that the atomic bomb and LSD have more in common than meets the eye. Both were developed as a result of man's curiosity. There would be no bomb (and no nuclear power industry) if someone hadn't been curious about what would happen if uranium were bombarded with neutrons, and LSD wouldn't be the problem that it has been in recent years if someone hadn't been curious about the possibility of using drugs to alleviate mental disorders. Without World War II, the bomb would still have been developed eventually; without the rebellion of the Jet Set against the Status Quotients, LSD would still have created a problem eventually.

"A little learning is a dangerous thing." Yet how can we acquire more knowledge without someone using it for destructive purposes? How can we know in advance that bombarding a target with neutrons will change the course of world history or that seeking a cure for schizophrenia will threaten a segment of society with hideous consequences? Hindsight is wonderful, and one might say in retrospect that, fission and the bomb being predictable, the first uranium sample should never have been exposed to neutrons. If any think that way, they must also advocate stopping space exploration because of the potentiality of using orbiting satellites for military purposes, and they must advocate ceasing cancer research because of the possibility that the knowledge required for a cure will also permit the deliberate causing of the disease on a large scale and at will.

No scientist worth his salt believes that the search for knowledge should be suppressed, and those who can remember the Fuchs case would surely agree that even the best kept secret will escape, and sooner than we expect. Moreover, if we unilaterally avoid certain areas of research or development because of the awful consequences they might initiate, how do we know that some other nation wouldn't be busy cornering all the trump cards in the game of international one-upmanship?

The dilemma is: Man's curiosity leads to his discovering new knowledge. Knowledge can be used for evil purposes. Yet suppressing one's curiosity will not prevent others from discovering the key to further destruction.

Nevertheless, we contend that the problem today is not that we have nuclear weapons or lysergic acid diethylamide or the means for biological warfare. The problem is that, as a social animal, man is still extremely immature and will remain immature until he produces and honors truly effective treaties controlling arms and banning war, until he has reversed what seems to be a steady deterioration of moral standards and a progressive disappearance of ethics, and until he begins a noticeable increase in individual responsibility.

We suggest that the most fruitful solution available to scientists is for each to regard himself primarily as a responsible moral human being and secondarily as a professional person, rather than vice versa. Being a good scientist because one is first a good human being is not the same thing as being a good human being because one is first a good scientist. Equally good science can result from either approach, but the net good to humanity is greater in the first case because the emphasis is properly placed. This self-analysis may lead to a slight slackening of the pace of research, but, we contend, it will lead to a more-than-compensating development of man's social conscience and of the means of alleviating the world's many pressing humanitarian problems.

To be specific, we suggest that each of us look, listen, read, and think, and then write (to friends, editors, congressmen), talk (to colleagues, civic clubs, Scout meetings), and act (like the responsible human being that the good Lord intended each to be).

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<sup>a</sup>By "science" we embrace engineering, and under "scientists" we include engineers.

<sup>1</sup>ANON., "Don't use nuclear weapons, Chicago scientists plea," *Chem. & Eng. News*, 46, 14, 23 (March 25, 1968).

<sup>2</sup>PHILIP M. BOFFEY, "Detrick Birthday: Dispute Flares Over Biological Warfare Center," *Science*, 160, 3825, 285 (April 19, 1968).