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Twisted facts

Manipulation of statistics turns living into enduring

By Morris E. Chafetz

We count on scientific research to protect us against our prejudices, validate our guesswork and be objective. Most of us don't want to face the fact that research can be contorted to accommodate social values. I contend that it's done all the time in studies of human behaviour.

In the physical sciences almost all factors can be measured, predicted and controlled. NASA was able to predict the arrival time, within a few minutes, of the astronauts on the moon. But in the science of social behaviour, objectivity is at best tenuous. Findings require interpretation, and science interpreters are as affected by the social mores swirling about as the rest of us.

The study of alcohol problems, with which I am familiar, is an example. During the early years of the 20th century, when the temperance movement was reaching a Prohibitionist crescendo, scientific studies on alcohol focused on its deficits. After repeal, the country cautiously began to accept alcohol as an accompaniment to social intercourse. Predictably, researchers responded with an abundance of scientific studies showing the benefits of alcohol. The story is a stunning example of the mercurial nature of science when society attempts to legislate behaviour.

In the past 15 years, we have come full circle. Alcohol is again in the proverbial doghouse and fear is the reason: fear of kids taking drugs, fear of drunken drivers, fear of illness and death.

First, castigating young people about their drug experimentation in the late '60s and early '70s caused them to point their collective finger at their elders' drug of choice: alcohol. Subsequent research showed that young drug experimenters had also tried alcohol, so alcohol was labelled a "gateway drug." But using statistical correlations to blame alcohol for illegal drug use is like saying daily use of alcohol leads to financial well-being: A survey showed graduates of the Harvard class of 1940 who drank every day had higher incomes than those who drank occasionally or not at all.

The second major impetus against alcohol was the fear of drunken driving, which became one of the most emotionally charged issues of the past decade. The image of thousands of innocent victims being struck down by drunken drivers forced people to become concerned about taking alcohol and driving.

The "truth" about the make-up of drunk-driving deaths, however, is vastly different from the slaughter of innocents drawn by advocacy groups and blitzed by the media. A sober look at U.S. Department of Transportation figures contradicts popular belief: 52 per cent of the people killed in drunk-driving deaths are the drunken drivers themselves; these drivers are not innocent victims. Another 20 percent of the deaths are passengers who have chosen to ride with a drunken driver; these passengers are not innocent victims. And 11 per cent are drunken pedestrians who walk in front of a car; these pedestrians are not innocent victims.

Finally, fear of alcohol comes from our frenetic pursuit of health. Statistical studies on health and well-being are studied like catechisms, which will, if followed piously and painfully, reduce the risk of illness, accident and delay death. Pleasure is to be avoided as a celibate man avoids a seductress. Health faddists give up alcohol for purified water.

Statistics and fashion do not lead us astray in alcohol studies alone. When the National Academy of Sciences estimated that pas- sive smoking causes 3,800 lung-cancer deaths annually among non-smokers in the United States, who would question the estimate? It certainly never occurred to me to do so, until I noticed another story on lung cancer.

An environmental group was lamenting the 20,000 lung-cancer deaths annually linked to radon, a deadly, naturally formed environmental carcinogen. I asked the researchers at the Academy of Sciences if the study on passive smoking had been "controlled" for radon. I was told it had not. As far as I am concerned, the failure to control for radon makes worthless the Academy's estimates for lung cancer among passive smokers.

Another fear is that the food we eat is carcinogenic. Robert Scheuplein, of the Food and Drug Administration, states that the risk of dying from cancer by dietary exposure to both natural and man-made carcinogens is 7.7 per cent. The risk of dying from natural carcinogens alone is 7.6 per cent. Obviously, natural is not better.

We need to ask ourselves why we are letting science and statistics seduce us into a life of enduring rather than living? Novelist Walker Percy said science is robbing us of the human spirit and leaching the sovereignty out of us as individuals. Perhaps a look at the bewildering proliferation of advocacy groups will provide a clue to the cause of our increasing helplessness.

In 1970, there were 828 American advocacy groups operating in the health and science area. In 1980, there were 1,337 groups; and by 1990, the number had jumped to 2,162. In public affairs the number of groups rose from 532 in 1970 to 2,292 in 1990. Advocacy groups function to guide the perplexed through life by catering to their fears and providing simple answers.

I head an organization dedicated to teaching people to count on themselves and not on the experts if they want to stay healthy. I can only conclude that I haven't succeeded very well; the manipulation of science and statistics by advocacy groups and experts is turning health into sickness for a lot of people.

Morris Chafetz, head of the Health Education Foundation, chaired a committee of U.S. President Bush's Commission on Drunk Driving.

The article EM9035 reprinted above is used, together with EM9102, in Figure 1.8 of the STAT 220 Course Materials.