

correlation between helmet laws and motorcycle fatalities, one might more profitably ask about the effect of wearing a helmet, *given involvement in an accident*. An even more basic question is, "What variables are most significant in the cause of motorcycle accidents?" Prevention through rider and driver education may be considerably more cost effective and save many more lives than mandatory helmet laws. A recent Department of Transportation report states that in 92 per cent of the accidents studied involving motorcycles, the riders had received no training. It also states that the median experience of the rider with the motorcycle he was riding at the time of the accident was only five months, that in only 15.5 per cent of the accident cases investigated was appropriate evasive action taken by the rider, and that even the wrong choices of evasive action were executed poorly.<sup>5</sup>

National Highway Traffic Safety Administration's (NHTSA) Joan Claybrook boasts of spending one and a quarter million dollars on motorcycle safety programs in 1978. This is less than one per cent of the total highway safety funds available, but motorcycles comprise about 4 per cent of the vehicular population; proportionately, there is a much greater need for funds to improve motorcycle safety than to improve automobile safety. From another point of view: since according to a University of Michigan study in 1978, one-half of the fatalities of seatbelted persons involved in automobile accidents die of head injuries, motorists (including passengers) would receive far more benefit from wearing helmets than would motorcycle riders. Indeed, the study concludes that voluntary wearing of some sort of protective head gear would be in order for car occupants.<sup>6</sup>

Finally, I offer a comment on the doctrine of "public burden." In the case of *Jacobson vs Massachusetts* which Ms. Baker quotes in support of this doctrine, the Supreme Court held that compulsory vaccination is constitutional when deemed necessary for the public health or safety. Helmet laws too may be constitutional, but hardly for the reason that not wearing a helmet will spread unhealthy or unsafe conditions to the general public. Extension of this criterion to protection of the public from the costs of high insurance

premiums, manslaughter convictions, and the "indelible memory of impact," is tenuous. It seems rather more tenuous to require a motorcyclist to protect the pocketbook of a person who runs into him, in addition to protecting his own through high insurance rates. This is particularly inappropriate since more than one-half of accidents involving motorcycles are the fault of the automobile driver.<sup>5</sup> The assertion that by not wearing a helmet the cyclist is reducing the freedom of other people is so ridiculous as to be ammunition for the anti-helmet law forces.

It should be no surprise that 27 legislatures have rejected the arguments of the NHTSA. That seems to me to be a warning that further infringement on the liberties of individuals must be thoroughly justified. It is a message to all state and federal regulatory agencies.

**Author's Note:** Since the acceptance date of this paper, the National Highway Traffic Safety Administration is reported by *Status Report* (Vol. 15, No. 13; August 14, 1980), a publication of the Insurance Institute for Highway Safety, to have urged states to adopt mandatory motorcycle rider education, even though "there is no proof it won't expose more young people to death and injury."

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## Freedom and Protection: A Balancing of Interests

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"Perspective on the Public Good"<sup>1</sup> deserves careful attention because it brings together, in one article, several often-heard arguments that are just as dangerous as the helmetless motorcycling they would promote.

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**Editor's Note:** See also related articles this issue, pp. 294 and 297.

The argument that rock climbers and rodeo contestants are not required by law to wear crash helmets implies that if a policy is not applied at the outer limits of a continuum of circumstances, it would be unreasonable to apply that policy at any point along the continuum. But consider the spectrum of regulations pertinent to motorcyclists. At one end would be such measures as banning the use of motorcycles; at the opposite extreme would be the complete absence of restrictions on motorcycle operation and the exemption of motorcycles from traffic laws. If both ends of this continuum are

unacceptable, does that mean that a reasonable course of action cannot be found somewhere between? Hardly.

Second, the article equates public opinion with the actions of the 27 legislatures that repealed helmet laws. These legislative actions, however, reflect the effectiveness of the anti-helmet-law lobbies rather than the views of the voters. Various surveys of the general public have shown that the proportion favoring helmet laws ranges from about two-thirds to 90 per cent.<sup>2, 3</sup>

A third faulty argument is that "more than half of accidents involving motorcycles are the fault of the automobile driver." While the study cited by Perkins does indeed assign culpability to the driver in 50.8 per cent of the cases, it is important that most of these automobiles moved into the motorcyclists' paths because they did not see the motorcycle.<sup>4</sup> Ironically, it is not within the power of the driver to remedy the inconspicuousness of the motorcyclist, and lobbying for lights-on regulations, or other measures to make motorcyclists and their vehicles easier to see, has been conspicuously absent from the efforts of anti-helmet groups.

Another often-heard argument put forth by Dr. Perkins and erroneously applied to many injury problems is that the primary question is "what are the most significant causes of accidents?" rather than "how can we most effectively prevent injuries?" Two distinctions are crucial here. One is between "accident" and "injury"; the bottom line, after all, is reducing injury and death, regardless of whether we are able to prevent the crash ("accident"). The other important distinction is between cause and prevention: knowing the "most significant cause" does not necessarily tell us anything about the best way to prevent either a crash or a death. Alcohol, for example, is an important causal factor in motorcycle crashes and is found in high concentrations in one-half of all fatally injured motorcyclists.<sup>5</sup> But this does not mean that we can prevent a significant portion of motorcyclist deaths through approaches designed to prevent either drinking by motorcyclists or motorcycle use by intoxicated riders. Such approaches are appealing, but intensive efforts in the United States to reduce drunk driving have yet to bear fruit in terms of significant reductions in fatal automobile crashes.<sup>6</sup> Nor is there evidence that "prevention through education" would be more cost effective, as Dr. Perkins suggests. Unlike helmet laws, education is costly and there are no data to show that it reduces deaths among motorcyclists.

Dr. Perkins is disturbed by what he refers to as Baker's "unqualified call for public health officials to put a stop to injury and disease losses resulting from the practice of individual freedoms." In point of fact, the editorial called for putting a stop to the "losses of other people's freedoms" (emphasis added) resulting from special-interest lobbying in the name of "individual freedom."<sup>7</sup>

The degree to which a society will curtail personal freedom in order to afford some degree of protection will necessarily vary with the issue at hand, as well as between societies and over time. We would argue for discussions that acknowledge the trade-offs, because rational policy making can occur only if the costs and benefits of competing approaches are weighed. This is true not only for helmet laws, for which benefits have been thoroughly documented, but

also for legal approaches for which evidence of benefit is substantially lacking; for example, we need to know more about societal benefits in relation to the length of sentences given violent offenders. Park Elliott Dietz, a forensic psychiatrist specializing in assaultive injuries, has pointed out that we accept prolonged imprisonment for violent offenders but not individual treatment or firearm controls that might be far more effective in protecting society.<sup>8, 9</sup>

If we considered only the balance between the individual's freedom of choice and that same individual's health status, we would most often find in favor of freedom; it would be paternalistic to do otherwise. But we are faced with the more difficult task of incorporating societal concerns—i.e., the concerns of all individuals combined—into the equation, and a significant population burden can outweigh an individual's freedom. Courts have concurred with this approach.

Dr. Perkins' understanding of the application of *Jacobson v Massachusetts* is limited and in conflict with legal history. Although the *Jacobson* case did indeed deal with smallpox vaccination, the Supreme Court's recognition of the "manifold restraints to which every person is necessarily subjected for the common good" was not limited to matters of contagious disease.<sup>10</sup> Laws requiring the fluoridation of water supplies, for example, have been judicially upheld, even though no contagious disease was involved, on the basis of public health perspectives as set forth in *Jacobson*.

More directly, the United States Supreme Court affirmed a lower court ruling which upheld the constitutionality of Massachusetts' helmet law. The lower court found that public resources were substantially involved in the issue of helmet usage, and the state's power was therefore properly applied in requiring motorcyclists to be helmeted.<sup>11</sup>

Societal or population costs of every sort are clearly germane to the helmet-law question, because they affect the well-being of all individuals. When Dr. Perkins labels as "ridiculous" the assertion that "by not wearing a helmet, the cyclist is reducing the freedom of other people," he ignores not only facts but the most fundamental perspectives of public health.

Moreover, he ignores the principle of social justice, which deals with the distribution of "good" among all members of society and leads to placing reasonable limits on individual freedom in order to minimize important harms.<sup>12</sup> To be sure, "reasonable" and "important" are hard to define precisely. But we submit that the thousands of deaths and serious injuries to motorcyclists constitute an important harm, as do the psychological and economic burdens to their families, the involved motorists, and others; and that the wearing of helmets—which has repeatedly been shown to reduce deaths and severe head injuries, and is voluntarily undertaken by one-half of the motorcyclists in states where use is not required by law—is not an unreasonable requirement.

Legislators have the responsibility for regulating safety on public roads. If they allow the use of motorcycles—for which the death rate per million person-miles of travel is more than 10 times the rate for cars<sup>13</sup>—then it makes sense that they should reduce the high risk of injury or death by requiring additional protection for motorcyclists.

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## Helmet Use, Helmet Use Laws, and Motorcyclist Fatalities

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In 1979, 4,907 motorcyclists died in crashes.\* The fatality rate per mile of travel for motorcyclists exceeds the fatality rate for automobile occupants by more than seven-fold.<sup>1</sup> Fatalities per 10,000 motorcycles increased about 50 per cent between 1975 and 1979.<sup>2</sup> In spite of these facts, Perkins has only the following to say in "Perspective on the Public Good" about how the carnage should be reduced: "Prevention through rider and driver education may be considerably more cost-effective and save many more lives than mandatory helmet laws."<sup>3</sup> Perkins cites no evidence, however, that driver education in fact reduces fatalities.

In contrast to the unproven effects of education, the effectiveness of helmets in preventing fatal head injuries, and of helmet use laws in producing near universal compliance among motorcyclists, is supported by a vast quantity of painstakingly documented research.

According to Perkins, "vast amounts of information have been generated and reviewed" both in favor of and against helmet use laws. However, in making his case against these laws, Perkins dismisses all evidence supporting mandatory helmet use with a single statement: "The American Motorcycle Association<sup>4</sup> and the Motorcycle Safety Foundation<sup>5</sup> claim much of this evidence to be of questionable validity." Perkins presents no *scientific* evidence to show that helmet use laws are ineffective and the cited documents contain no evidence of this kind.

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Editor's Note: See also related articles this issue, pp. 294 and 295.

\*Determined from the Fatal Accident Reporting System (FARS), National Highway Traffic Safety Administration.

To reduce the impact of the case in favor of helmet use law effectiveness, Perkins also questions the methodology and by implication the findings by Watson, *et al*,<sup>1</sup> who showed that the repeal of these laws typically has been followed by a 38 per cent increase in motorcyclist fatalities. Perkins specifically queries: 1) the use of Michigan and Illinois seven times; 2) the fact that South Carolina and Tennessee were not used; 3) the choice of Arkansas, Florida and Georgia as a comparison group for New Mexico; 4) the use of absolute numbers of fatalities as opposed to fatality rates.\*\* To investigate Perkins' remarks, a number of additional calculations were made.

As Watson, *et al*, stated, "there is some arbitrariness" in the choice of comparison states and the paper contained a method for checking the analysis. However, the conclusions of the original analysis are unchanged by any of the changes suggested by Perkins. Thus, the inclusion of South Carolina and Tennessee and a number of other reasonable changes in the matching of repeal and comparison states did not change the basic conclusions, although the per cent changes for individual repeal states changed—some up, some down. But the summary for all states never fell below 38 per cent. Thus, Perkins' specific criticisms are easily refuted, and Perkins' question as to whether or not the findings can be cited can clearly be answered yes.

Of course, we absolutely agree with Perkins that the efficacy of laws and regulations should be assessed. Indeed over 100 years ago Florence Nightingale tried very hard to establish a University Department of Statistics for this very reason.<sup>6</sup>

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\*\*The meaning of Perkins' point (4) escapes us—numbers and percentages were used.