Between the mid-sixties and the mid-seventies, the so-called "consumer decade,"\(^1\) Congress enacted a large number of consumer protection laws, many in the area of health and safety.\(^2\) In recent years, some of these laws and the regulations promulgated under them have inspired harsh criticism. Some critics,\(^3\) including many Reagan Administration appointees,\(^4\) have argued that rather than regulate, government should inform and...
educate the public about the risks associated with various hazards and let individuals choose whether or not to take the risks.

Such a view is hardly novel. In fact, for several reasons the use of information and education as alternatives to direct regulation has always appealed to government agencies. First, many regulators believe that large numbers of injuries and illnesses cannot be prevented through direct regulation. Second, information and education programs seem to preserve individual choice while avoiding direct government involvement in industry's production and pricing activities. Third, because information and education programs usually bypass the complex procedural schemes most agencies must follow in order to promulgate rules, information and education

5. Although we use the terms "information" and "education" somewhat interchangeably, some researchers draw a distinction between them. Information programs are notification schemes that convey factual information, and nothing else, to the public. Implicit in the notification approach is the belief that the public, once apprised of the facts, will make more informed judgments. Education programs, on the other hand, are persuasion schemes that convey messages, which may or may not contain factual information, which overtly seek to motivate members of the public to modify their behavior.

Most government officials, including Reagan Administration appointees, have undertaken both types of programs without regard to any distinctions between them. As stated by former NHTSA Administrator Peck, it seems appropriate to employ the "behavior modification" techniques "that we use every day in selling cereal, in selling soap, [and] in selling political candidates" to save lives. Joint Hearings on Small Car Safety Research Before the Subcommittee on Transportation, Aviation, and Materials and the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology, 97th Cong., 2d Sess. 309 (1982) (remarks of Raymond Peck) [hereinafter cited as Small Car Safety Hearings].

6. See Regulatory Reform Hearings Before the Subcommittee on Oversight and Investigations of the House Committee on Interstate and Foreign Commerce, 94th Cong., 2nd Sess. 4 (1976) (statement of Richard O. Simpson, Chairman, Consumer Product Safety Commission) ("Most experts place the product-caused, or standards-preventable portion at somewhere between 15 percent and 25 percent of the total product-associated injury figure."); See also Miller & Parausraman, Advising Consumers on Safer Product Use: The Information Role of the New Consumer Product Safety Commission, 36 AM. MKTG. ASS'N PROc. 372, 373 (1974) ("The fact that at least 80 percent of the consumer product-related injuries may not be caused by defective or unsafe products suggests that consumer education has a very large untapped potential for reducing such injuries").

We suggest two qualifications to the view that only a small fraction of total injuries can be addressed by regulation while the remainder can be addressed by information and education. First, technology may transform hazards that seem susceptible to reduction only by information and education into risks that can be reasonably addressed by regulatory standards. For example, prior to the passage of the Refrigerator Safety Act of 1956, at 15 U.S.C. § 1211 (1982) (standard promulgated at 16 C.F.R. § 1750 (1983)), most observers may have assumed that consumer education directed at parents was the only way to prevent infant suffocation in abandoned refrigerators. The Act forced manufacturers to develop doors that were easy enough to open from within should infants become trapped, but also tightly enough closed that infants could not easily open them from outside. Manufacturers not only developed the necessary technology, but have reduced their costs in doing so. To our knowledge, no infant has died in a refrigerator equipped with the new technology. Interview with Robert Poth, Director, Division of Regulatory Management, Bureau of Compliance, Consumer Product Safety Commission, in Washington, D.C. (Sept. 29, 1983).

Second, hazards which can not be averted by regulation are not necessarily susceptible to reduction through the use of information and education. See infra section III.


8. The Administrative Procedure Act (APA), 5 U.S.C. §§ 551-559 (1982), provides the basic framework for agency rulemaking. The APA's informal rulemaking procedures, which most agencies
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programs permit—superficially, at least—easier and faster action than rulemaking. Finally, information and education programs can be used to enhance the image of agencies and their staffs—a point that is rarely lost on government administrators.

The popularity of persuasion campaigns, of course, says little about their effectiveness. While we do not challenge the value of all information and education programs, we suggest their popularity rests more on philosophical and ideological grounds than on solid empirical evidence supporting their ability to alter consumer behavior. We question the efficacy of many education campaigns currently under way, especially those undertaken by health and safety agencies.

In this Article, we explore some of the myths surrounding information and education programs. We suggest that if they are to produce even modest changes in consumer behavior, many of these programs require more careful planning, larger expenditures and longer implementation periods than they usually receive. To illustrate our point, we examine in some detail three recent health and safety education campaigns—one promoting safety belt use, one advancing burn prevention measures and one urging lifestyle changes to combat heart disease—which we believe underline the difficulties facing even the most skilled attempts to promote behavioral change through the use of information and education techniques.

In choosing these campaigns, we sought “exceptional” programs. The programs described herein purported to incorporate “state of the art” persuasion techniques and contained sophisticated, detailed evaluation schemes, characteristics by no means common to all information and education programs. In two campaigns, the program results have been extensively evaluated. In the third, preliminary but, we believe, significant results have been obtained. Our analysis of these campaigns highlights some of the social, psychological, financial, and occasionally political, factors that affect and often impede the success of educational campaigns generally. We hope our analysis will convince government officials and other


9. See infra section II.A.
10. See infra section II.B.
11. See infra section II.C.

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policymakers to undertake education campaigns with the same care and restraint currently accorded regulatory proceedings.

I. Changing Behavior Through Education

Any attempt to change consumer behavior must take into account the manifold complexities of the process of human persuasion. Health and safety education programs, moreover, differ in important respects from typical private sector "education," or advertising campaigns, and must overcome additional obstacles.

A. Selling Safety vs. Selling Products

The twentieth century, among its other distinctions, surely will be known as the age of mass communications. With the growth of print and electronic media has come the growth of a vast communications industry, including corps of mass "persuaders": propagandists, public relations specialists and the like. Television, in particular, seems capable of deeply influencing the public. Given the array of tools available, one might well suppose that little is beyond the capabilities of these persuaders, especially those seeking to promote public health and safety.

Unfortunately, a considerable body of research has cast doubt on the notion that mass persuasion techniques work very well in campaigns designed to alter public attitudes and behavior regarding health and safety concerns. Indeed, one respected observer seems to doubt that these techniques work at all when employed to change deeply held attitudes and behavior patterns.

12. See generally L. BOGART, STRATEGY IN ADVERTISING 2-11 (1967) (discussing the 20th century information explosion and the increasing complexity of modern society which requires increasing amounts of information). The 100 top national advertisers spent $17.1 billion for advertising in 1982, an increase of 15.2 percent from the preceding year. Elmquist, 100 Leaders parry recession with heavy spending, ADVERTISING AGE, Sept. 8, 1983, at 1. Television and radio garnered $7.5 billion of these advertising dollars. Id. at 168.

13. Television is a fixture in virtually every American household. Almost 78 million homes, or roughly 98 percent, have at least one television set. By the time a child graduates from high school, he or she will have spent more time in front of a television set (17,000 hours) than in a classroom (11,000 hours). From early childhood through the high school years, television viewing occupies more time than any activity other than sleeping. See L. Wallack, Television Programming, Advertising and the Prevention of Alcohol-Related Problems (1983) (paper presented at the conference to review the report, Alcohol and Public Policy: Beyond the Shadow of Prohibition, at National Academy of Sciences, Washington, D.C. (May 20-21, 1983)) and studies cited therein.


15. See Etzioni, supra note 14, at 47 (expressing doubt that information campaigns work and noting that social scientists are reevaluating old assumptions that behavior patterns can be easily
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It may sound paradoxical to suggest that techniques which seem to work so well in promoting products would operate so poorly in promoting safe behavior. The underlying premise of this proposition, however, proves to be misleading. It is true that mass persuasion techniques sell products, but they do so less easily than one might imagine. Merchandising and marketing remain more art than science, more intuition than reason. Advertising annals continue to be filled with instances in which companies devoted millions of dollars for market research, only to produce marketing duds. For every dramatically successful ad campaign, there is at least one Edsel campaign.

Moreover, the “social” marketing of health and safety requires a different approach than ordinary product merchandising. Safety tends not to have an inherent sales appeal. While consumers will often avoid products they believe to be unsafe, they will rarely go out of their way to seek goods reputed to be particularly safe.

Advertising for competitive products generally is aimed at persuading consumers to choose particular brands of the kinds of items they plan to buy anyway. It is less successful in convincing consumers to adopt new buying patterns. Persuading consumers to purchase new types of products, or to change their behavior patterns in similarly significant ways, tends to be a costly and unpredictable process. Thus, spending millions of dollars to switch smokers from Camels to Kools may be profitable for the makers of Kools, because the underlying smoking habit already exists. In contrast, spending the same amount of money to convince smokers to abandon cigarettes is likely to produce only meager results. Unfortunately, public education campaigns often attempt to break deeply fixed

changed through education).

17. J. Deutsch, Selling the People’s Cadillac: The Edsel and Corporate Responsibility 33-79 (1976); R. Hartley, supra note 16, at 59-70 (both sources discussing background of Edsel marketing effort).
19. Two surveys — one of the advertising industry (1975), and the other of consumer outdoor garden equipment manufacturers (1977) — conducted by R. David Pittle while a Commissioner on the Consumer Product Safety Commission, revealed a long-established practice of not advertising the safety aspects of consumer products. This practice grew out of the view, strongly held both by manufacturers and by advertising agencies, that in general consumers do not make purchase decisions based on safety (notes on file with the Yale Journal on Regulation). In addition, research conducted by R. David Pittle, while on the faculty of Carnegie-Mellon University in 1972 (sponsored by National Science Foundation Grant GI-3277X), revealed that, when approximately 2000 consumers were questioned about factors they considered important in the product selection process, safety was found not to be a significant consideration.
21. See Etzioni, supra note 14, at 47.
consumer habits.

Ordinary product advertising is addressed to those consumers likely to be favorably disposed to the product. Unlike product advertising, government health and safety persuasion campaigns often seek to influence those least disposed to listen to their message. Thus, many government campaigns are unsuccessful because they are targeted at individuals who are not receptive to the campaigns' messages. For example, simply convincing teenagers to avoid alcohol or drug abuse has turned out to be far more difficult than many researchers originally thought possible.

Product marketers may find considerable profit in small market share increases which promoters of public information campaigns might consider not cost-effective. For example, a favorable shift of two or three percent in a product's market share might justify an expenditure of millions of dollars by a cosmetics manufacturer — indeed, many spend that much simply to maintain their market share. On the other hand, most government agencies would think long and hard before trying to justify an expenditure of millions of dollars upon the expectation of so small a shift in consumer behavior.

It is also important to note that government persuasion campaigns, particularly in the health and safety area, usually promote abstract "products" with rather intangible benefits, whereas product marketers sell concrete products with immediate, tangible benefits. Consumer reactions tend to be substantially weaker toward the former type of marketing.

Of course, some of the differences between product merchandising and public information campaigns may seem to work to the advantage of the latter. Crest toothpaste, for example, has to compete with Colgate, Aim and Aquafresh for a consumer's attention. Anti-drug and pro-seatbelt campaigns would seem not to face comparable competing messages. Unfortunately, this is not the case. Public information messages, often in the form of television and radio public service announcements, do compete.

22. Bloom & Novelli, Problems and Challenges in Social Marketing, 45 J. MKTG. 79, 81-82 (1981) (Social marketers often segment on the basis of risk to the consumer. They will target their efforts at drivers who tend to avoid using seatbelts, sexually active teenagers who tend to avoid using contraceptives, heavy smokers, etc.).


25. We do not wish to imply that government agencies necessarily obtain large shifts in consumer behavior when they spend money on persuasion campaigns. Our point is that, when agencies justify large expenditures, they anticipate large shifts in behavior even if only small shifts are ultimately achieved.

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with one another both for air time and for the consumer's attention. They also compete with product advertising that is generally more appealing and exciting.\textsuperscript{27} Favorable portrayals of drug use and risk-taking in movies and on television represent still more competition for health and safety messages. The extent to which these other messages undermine health and safety campaigns is not clear. But they do have an effect.\textsuperscript{28}

B. Creating Successful Information and Education Campaigns: Practice and Pitfalls

Advertisers and market researchers have come to realize that the process of persuasion is extremely complex. For a persuasion campaign to succeed, consumers must: (i) receive and understand the message, (ii) agree with the message, and (iii) act in accordance with the message.\textsuperscript{29}

1. Transmitting Information Effectively

Researchers have found that simply conveying a message so that it is widely received and understood can be exceedingly difficult. While this finding no doubt distresses advocates of information disclosure, considerable data suggest disclosure techniques, such as instructions and warning labels, do not work very well.\textsuperscript{30} Advocates who rely on surveys indicating a strong consumer desire for safety warnings and nutrition labels\textsuperscript{31} may be misled about the usefulness of these techniques. Studies have shown a significant discrepancy between the information consumers say they want and the degree to which consumers make use of such information. Consumers invariably indicate, when polled, a desire for information about product characteristics such as nutrition, quality and safety to guide their purchases.\textsuperscript{32} Yet, studies show that consumers rarely seek this information from available sources.\textsuperscript{33} In fact, there is evidence indicating that most consumers do not read such information when it is provided.\textsuperscript{34}

\textsuperscript{27} Beals, Mazis, Salop & Staelin, Consumer Search and Public Policy, 8 J. CONSUMER RESEARCH 11, 21 (1981) ("Government agencies interested in altering consumer behavior through the provision of information must acknowledge that they are in competition with sellers for the attention of the consumer.").

\textsuperscript{28} Schmeling & Wotring, supra note 23, at 36-37.

\textsuperscript{29} We have divided the process of persuasion into three steps for analytical purposes only. These steps do not represent three distinct and separate phases in the persuasion process. See Schramm, supra note 14, at 36-41.


\textsuperscript{31} Jacoby, Chestnut & Silberman, supra note 30, at 121.

\textsuperscript{32} Id.

\textsuperscript{33} Id.

\textsuperscript{34} For example, in a newsletter of the U.S. Chamber of Commerce, a recent article criticizing
Some of the reasons for the difficulty in transmitting "public service" information—including health and safety information—successfully seem easy to pinpoint. Anyone who has sorted through his or her daily "junk" mail, or dashed through a supermarket with barely a glance at price labels, let alone nutrition labels, knows that modern American society is flooded with "information," not all of which can easily be absorbed.

Furthermore, skillful and creative packaging of public service messages, which might make them more successful, is all too rare. As any viewer of late-night television knows, public service appeals often are inept, almost laughable. The "ineptness" factor is only one of a host of practical problems that plague most public service campaigns. In addition, information campaigns often suffer from poor media visibility due to message placement during low viewing times, overly vague and unspecific messages, unduly short campaign periods and a general failure to target audiences.35

In addition to these practical problems, researchers suggest an additional, more subtle reason why audiences do not receive information from information and education campaigns. Consumers often "filter" the information to which they are exposed. When a message conflicts with a person's prevailing cognitive structure, the message will be rejected or distorted to make it palatable.36 In songwriter Paul Simon's words, "A man hears what he wants to hear and disregards the rest."37

2. Changing Consumer Attitudes

Once an information or education campaign message has successfully reached a consumer's consciousness, there remains the problem of convincing the individual of the merits of the message. The process of changing the attitudes of consumers who understand a message is itself enormously complex.

A central difficulty social marketers encounter is the tenuous relationship between increased knowledge and changes in attitude. A consumer's ability to recall the specifics of an information campaign does not neces-

35. See Schmeling & Wotring, supra note 23, at 34, and studies cited therein.
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sarily mean that the consumer agrees with the object of the campaign. Studies have shown, for example, that many smokers exposed to information about cigarette-related health problems fail to change their attitudes toward smoking.38 Indeed, audience attitudes may actually harden against the information conveyed in public interest messages.39

These results are possible because messages do not simply flow in a linear fashion from the media to a passive, receptive audience. Instead, messages are transformed and redefined in various ways as they move into the public consciousness. For example, the widely recognized "opinion leader" phenomenon40 affects the impact of information in significant, and often unpredictable, ways. Influential friends or family who amplify a message may cause other individuals to change their attitudes, while opinion leaders who criticize or ignore a message may completely undermine its impact.

The social class of audience members also seems to influence the extent to which messages affect consumer attitudes. Consumers in lower socioeconomic groups appear to be less influenced by information and education messages than are those in other groups. One study of childhood accidents, for example, has concluded that low-income parents demonstrate a "fatalistic" attitude toward their children's exposure to hazards.41 This attitude often leads to the abdication of responsibility for reducing the children's exposure to risks; it also immunizes the parents against most forms of safety education.42

This difference in the relative receptivity of consumers in different social classes is particularly significant because many health and safety education campaigns are aimed at reducing hazards more commonly found among lower socioeconomic groups.43 Campaigns designed to encourage

40. This term was first used in 1948 by a group of researchers analyzing voter decisionmaking processes during the course of an election campaign. The researchers found that substantial numbers of voters relied not on the mass media but on the advice of friends and family — the "opinion leaders" — in deciding whom to vote for. See P. LAZARSFELD, B. BERELSON & H. GAUDET, THE PEOPLE'S CHOICE 49-51 (1948). Since then, social scientists have found the opinion leader phenomenon in virtually every aspect of consumer decision making. See Meyer, Maccoby & Farquhar, The Role of Opinion Leadership in a Cardiovascular Health Education Campaign, 1 COM. Y.B. 584-85 (1977) and references cited therein.
41. Klein, Societal Influences on Childhood Accidents, 12 ACCIDENT ANALYSIS & PREVENTION 275, 276 (1980).
42. Id.
43. Id.
vaccinations, preventive dental care, safe behavior with guns, and seatbelt usage have all foundered as they have reached out to these groups.

The recognition of the importance of social class, selective perception, opinion leaders and a host of other factors has led social scientists to reevaluate the process of communication. During the last forty years, most researchers have gradually abandoned the notion that communications reach a passive, homogeneous audience and have developed instead a model in which messages are received by highly active, highly selective audiences which manifest widely varying reactions. The complex nature of audiences thus requires that educators who seek to change attitudes employ extremely sophisticated communication methods.

3. Translating Changed Attitudes Into Modified Behavior

Although it seems logical that changed consumer attitudes should translate easily into changed behavior, the relationship between changed attitudes and behavior is, in fact, not well understood. At least in the health and safety area, the difficulties that educators face in persuading consumers to change their attitudes appear with equal, if not greater, force in attempts to motivate consumers who agree with messages to do something about them.

In the health and safety area, a number of studies evaluating the link between attitude changes and subsequent behavior provide little encouragement to the advocates of information and education programs. For

44. Hingson, Obtaining Optimal Attendance At Mass Immunization Programs, 89 HEALTH SERVICES REP. 53, 54 (1974) ("receiving of immunizations is related to various measures of socioeconomic status").
48. The difficulties education campaigns have in reaching the poor pose a dilemma for those who set public policies. Many opponents of product regulation believe that by raising product prices such regulation harms the poor. To the extent that information and education campaigns fail to adequately reach the poor, however, those who oppose product regulation and seek to aid the poor cannot advocate information and education as a meaningful alternative.
49. See J. KLAPPER, THE EFFECTS OF MASS COMMUNICATIONS 3-4 (1960) (listing many factors that affect the flow of a message from the sender to the consumer).
50. Id.
51. See Schramm, supra note 14, at 6-12.
52. It should be noted that evaluation studies remain the exception rather than the rule in health and safety education efforts. One marketing expert cites several possible reasons for the lack of evaluation research: (i) many education programs are designed and initiated by "action-oriented" individuals who approach these with the a priori view that education works and who thus see no need to document this belief, (ii) evaluation research requires complex, time consuming, and often expensive ex-
example, in one recent study, an experimental group of mothers received intensive training on home safety practices while a control group received no training. The experimental group indicated that the training had convinced them to improve the safety of their homes and had led them to do so. Surprisingly, however, members of the experimental group demonstrated no safer behavior than did the control group when researchers made unannounced visits to their homes.

At times, the results of attitude changes can seem counterintuitive or even perverse. In another study, an experimental group of mothers exposed to messages advocating the postponement of toilet training claimed to have been persuaded by the messages. Subsequent interviews with the mothers indicated that their new views had persisted over time. Upon investigation, however, researchers found that the experimental group actually began toilet training their children at an earlier age than did the control group. Similarly, industry foremen given an intensive two week training course which stressed the need to show considerate behavior toward factory workers scored significantly higher than a control group on questionnaires designed to elicit attitudes towards "consideration." Paradoxically, researchers found that foremen who had taken the course actually showed less considerate behavior than foremen who had never taken the course.

Some researchers, reflecting on these results, have concluded that education campaigns simply cannot adequately address most public health and safety concerns. Others, while remaining more optimistic, readily concede that the link between attitudes and behavior is complex, and admit that changed attitudes provide no guarantee that behavior will be similarly changed.

Experimental designs to control for a host of confounding and intervening variables and (iii) consumer behavior changed by education campaigns often takes a long time to manifest itself. Measuring the delayed effect of a campaign often requires extending the evaluation past the termination of most education campaigns. See Staelin, supra note 38, at 31. See also Festinger, Behavioral Support for Opinion Change, 28 PUB. OPINION Q. 404 (1964) (noting the paucity of evaluation studies).


54. Id.


57. See Dershewitz & Williamson, supra note 53, at 1148.

58. See Staelin, supra note 38, at 31.

59. Id.

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4. Maintaining Changed Behavior Over Time

Some education campaigns, once effective, need not be repeated. A campaign to convince consumers to buy smoke detectors, for example, would seem successful if most consumers installed smoke detectors — a one-time act. Many health and safety hazards addressed by current education campaigns, however, do not lend themselves so readily to resolution by one-time actions. Convincing consumers to wear seatbelts once or to avoid fatty foods for one day obviously would not reduce risks significantly.

Accordingly, in many instances, consumer educators not only must lead their audiences to change their behavior but must also motivate them to maintain the changed behavior over time. Regrettably, few consumer educators, especially those in government agencies, have looked at the long-term impacts of their programs. Short budget cycles, sudden personnel shifts, and the inclination of agencies always to introduce new and different approaches to problems, doom many programs to short lives.

Even programs committed to the long run face difficulties. One problem well known to product advertisers is “wearout.” That is, advertisements and advertising campaigns lose the ability to generate new or repeat sales over time as the public grows weary of the message. Product advertisers often are able to revive the appeal of their products by changing their messages. Presumably, consumer educators could do the same, although the time and expense involved tend to discourage them from doing so. Unfortunately, as a consequence of the various forces which inhibit program longevity, most education campaigns generate few changes that survive them.

60. Of course, battery operated detectors would require replacement cells from time to time. The replacement task, however, seems minor.
61. Bloom & Novelli, supra note 22, at 82-83.
62. Id.
63. Axelrod, Advertising Wearout, 20 J. ADVERTISING RESEARCH 13 (1980) (noting that while repetition in advertising is beneficial, wearout phenomenon limits ability of commercials to generate new or repeat sales).
64. The Swedish government adopted an interesting approach to avoiding “wearout” in its cigarette health warning program by requiring manufacturers to rotate required disclosure messages. See Maxis & Staelin, Using Information Principles in Public Policymaking, 1 J. MKTG. & PUB. POL'Y 3, 6 (1982).
65. See Cousins, The Effects of Public Education on Subjective Probability of Arrest for Impaired Driving: A Field Study, 12 ACCIDENT ANALYSIS & PREVENTION 131, 137 (1980) (listing studies demonstrating the short-lived effects of campaigns — including those associated with passage of stiff legislation — directed against drunk driving). See also McNeill & Wilkie, Public Policy and Consumer Information: Impact of the New Energy Labels, 6 J. CONSUMER RESEARCH 1 (1979) (noting that, in response to the energy crises of the 1970s, “consumers have been asked to slow down, turn down, commute together, and generally adjust their energy consumption on a daily basis. However, in most cases, consumer behavior has gradually returned to pre-crisis norms.”) One of the few campaigns to use “booster” techniques in years subsequent to the primary campaign is the British seatbelt campaign. From at least 1972 to 1979, the Ministry of Transport ran its ad campaign every year for about six weeks. According to a report by NHTSA, the British approach seems to have been quite
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II. Three Case Studies

Each of the education campaigns described in this section incorporated many of the elements which must characterize successful information and education programs. Even so, each campaign has revealed the significant limitations of this approach. The NHTSA case study, examined partly in its political context, suggests some of the political considerations that often motivate policymakers to undertake ineffective education campaigns. Project Burn Prevention shows that even carefully crafted programs may be unable to overcome the inherent difficulties education campaigns confront. Finally, the Stanford Three Community heart disease program demonstrates that even where local campaigns are successful it may be extremely difficult to operate such campaigns on a nationwide basis.

A. Promoting Safety Belt Use

The National Highway Traffic Safety Administration (NHTSA) recently began a three-year education campaign designed to increase safety belt use in the United States. This ongoing effort provides a useful context in which to examine the possibilities and limitations of education campaigns. Unlike previous U.S. safety belt campaigns, the current NHTSA program is national in scope and contains a reliable and precise evaluation component. Moreover, the agency claims to be committed to long-term implementation.

Despite its apparent advantages over earlier campaigns, NHTSA's effort to date has produced only minimal gains in safety belt use. These preliminary results are not surprising given the ineffectiveness of past safety belt campaigns and the level of resources committed to the current effort.

66. See infra section II.A.
67. See infra section II.B.
68. See infra section II.C.
69. We will use the terms "safety belt" and "seatbelt" interchangeably throughout this section.
70. See NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra note 65, at 88.
71. The narrow geographic scope of most education programs conducted each year severely limits their effectiveness.
72. See infra text accompanying notes 110 and 111.
1. The Problem: Highway Carnage and Low Seatbelt Usage

Motor vehicles, for all their usefulness, claim more lives and produce more injuries than any other consumer product in the United States. Each year, 34,000 people are killed and more than half a million receive moderate to severe injuries as a result of highway accidents. Yet, only a fraction of American drivers and passengers—about 11.3 percent both in 1981 and 1982—regularly wear seatbelts.

Low seatbelt use is by no means a new problem in this country. Since 1967, when the Department of Transportation (DOT) first required automakers to install seatbelts in all passenger cars, NHTSA has tried to persuade, cajole, and sometimes compel consumers to wear seatbelts. For example, when it had become obvious that only a small fraction of consumers was wearing seatbelts, DOT, in 1972, issued a rule requiring auto manufacturers to install lap and shoulder belts in all 1974 models, along with an ignition interlock system that prevented engine ignition if the belts were not connected. Public outcry against the interlock system led Congress to order DOT to rescind the interlock requirement.

74. NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra note 65, at 1.
75. NHTSA bases these conclusions on its estimate that 180 lives would be saved and 3,400 serious injuries avoided for every one percent increase in seatbelt use. Id. at xi. Cf. Appropriations Hearings, supra note 73, at 382 (Administrator Peck stated that 172 lives could be saved for every one percent increase in safety belt use but did not say whether NHTSA had dropped its earlier estimate of 180). The General Accounting Office (GAO), however, has questioned NHTSA's calculation of the marginal effectiveness of changes in seatbelt use rates: Several experts outside the Federal Government whom we contacted . . . agreed with DOT that if all people not now wearing their safety belts (about 90 percent of the population) were convinced to do so—on the average—each one percent point increase would save 180 lives and prevent 3400 serious injuries. However, these experts said that the individuals comprising the first percentage point increase would probably be the most concerned with their personal safety and therefore less likely to be involved in accidents causing fatalities and serious injuries.

78. 37 Fed. Reg. 3911 (1972) (current version at 49 C.F.R. § 571.208 (1982)).
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Although the fact is often overlooked, NHTSA issued the 1972 rule as a first step toward its broader goal of "complete passive protection." To realize this goal, NHTSA issued a new standard ordering manufacturers to install either automatic seatbelts or air bags on all cars sold in the United States. This "passive restraint rule" was intended to be phased in by 1984.

Less than a year after Ronald Reagan became President, NHTSA dramatically shifted gears and revoked its passive restraint rule. In rescinding the standard, NHTSA indicated its intention to undertake a major educational effort to increase voluntary seatbelt use. The agency claimed that the education campaign would be more successful and less expensive than the passive restraint rule. NHTSA predicted that its education campaign would increase use by a mere four to five percentage points while saving only 688 to 860 lives per year.

Insurance and consumer groups successfully challenged the rescission of the passive restraint standard, leading the Supreme Court to order NHTSA to reassess its decision. Despite the Court's ruling and severe

83. Id. at 53,425.
84. See Appropriations Hearings, supra note 73, at 382.
85. See Letter from Raymond Peck, Administrator, NHTSA, to the Honorable William Lehman, Chairman, Subcommittee on Appropriations, U.S. House of Representatives (March 2, 1983) [hereinafter cited as Peck Letter]. Administrator Peck estimated that "the aggregate effect of the programs now planned should result in statistically valid measurement of national usage rates in the range of 25 percent in the next three years." But cf. Small Car Safety Hearings, supra note 5, at 330-331, where Administrator Peck predicted that NHTSA's education campaign would achieve at least 35 percent use rates.
86. NHTSA's prediction is based on its estimate that 180 lives would be saved for every one percent increase in safety belt use. See NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra note 65, at xi.
87. See Appropriations Hearings, supra note 73, at 329, 392. NHTSA estimated that, under the passive restraints rule, manufacturers would have chosen to install detachable automatic safety belts rather than airbags 99 percent of the time. The agency assumed that most people would then detach their passive belts. This analysis represents a complete reversal of NHTSA's view under the Carter Administration, when it estimated that passive restraints would save 9,000 lives and avoid 65,000 serious injuries each year, at a cost to consumers of about $25 per car (plus operating costs) for automatic safety belts and $112 per car (plus operating costs) for air bags. See UNITED STATES REGULATORY COUNCIL, THE AUTOMOBILE CALENDAR: RECENT AND PENDING FEDERAL ACTIVITIES AFFECTING MOTOR VEHICLES 242-47 (1981) [hereinafter cited as AUTOMOBILE CALENDAR].
congressional criticism, NHTSA continues to give its seatbelt education campaign high priority.89

2. The Safety Belt Campaign

The current NHTSA safety belt campaign was designed against a background of other campaigns that failed to achieve significant gains in seatbelt use. NHTSA claims that its program will not repeat these failures.

a. Previous Campaigns

Before initiating the current seatbelt campaign, NHTSA reviewed over 160 studies of past efforts to promote safety belt use. With few exceptions, these studies showed that seatbelt promotion campaigns produced negligible results.90 Nevertheless, NHTSA concluded that Americans still might be persuaded to use seatbelts.91 From past studies, the agency noted that consumers are reluctant to wear seatbelts because of their perceived inconvenience, fear of entrapment during an accident, and plain forgetfulness. The studies also demonstrated that consumers would probably wear seatbelts more often if they knew the true probability and consequences of being in an accident, understood the safety value of seatbelts, and developed the habit of wearing seatbelts at an early age.92

In the course of its review of previous educational efforts, NHTSA studied both American and foreign campaigns.93 Only one American campaign was linked to a substantial increase in safety belt use, and this effort relied on self-reporting by consumers—a generally unreliable measurement technique.94 However, foreign campaigns, most notably those conducted in Great Britain and Sweden, showed more encouraging results—often raising rates into the twenty to thirty-five percent range.95 Based, in part, on the reported success of foreign campaigns, NHTSA

89. See generally Appropriations Hearings, supra note 73; Small Car Safety Hearings, supra note 5.
90. See NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra note 65, at 28-39, for a discussion of the limited impact of past seatbelt promotion campaigns.
91. Id. at 27; See also Appropriations Hearings, supra note 73, at 382.
92. NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra note 65, at 23.
93. Id. at 28-39.
94. See id. at 35-36. Self-reported usage in this program rose from 29 to 41 percent. However, a follow-up campaign, in which usage rates were actually observed, demonstrated a starting rate of only 12.4 percent and a final rate of only 16.8 percent.
95. Id. at 29-34. Note, however, that much of the reported success of foreign campaigns was only temporary. Id. at 28. Virtually every nation studied, including Great Britain, went on to enact mandatory safety belt legislation. In other words, in most countries the primary effect of safety belt campaigns seems to have been to create public support for compulsory seatbelt laws. Id. at 33. See also infra notes 118-20.
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initially predicted that a “sufficiently powerful” education effort could lead to seatbelt use rates of at least thirty-five percent. Only after receiving intense congressional questioning did the agency lower its estimate to twenty-five percent.

b. NHTSA’s “New” Approach

The failure of past American safety belt campaigns, which used only mass media techniques, led NHTSA to conclude that mass media campaigns alone are not powerful enough to induce significant changes in consumer behavior. As a result, NHTSA designed a campaign which combines mass media tactics with education and incentive programs, and private mandatory use requirements.

Education: NHTSA has strongly criticized previous seatbelt campaigns for their failure to include educational components. According to the agency, simple mass media programs convey only brief messages to many potential targets, while education campaigns—through lectures, group sessions, movies, school projects, study lessons, brochures, and the like—can transmit longer, more informative, and more persuasive messages to small, carefully targeted audiences. Thus, NHTSA has promoted its message through a process it terms “networking,” which involves the use of national organizations to convey messages to their members. The agency has contacted or plans to contact educational, health, medical, civic, safety, business, government, military, insurance, law enforcement, and media groups.

Despite the agency’s enthusiasm for the education element of its program, none of the education studies cited by NHTSA demonstrated any greater success in promoting seatbelt use than the mass media campaigns

96. Id. at xi, 27. Interestingly, in reaching this conclusion NHTSA relied heavily on a number of studies done in the mid-1970s and virtually ignored a more recent 1978 study by Peter D. Hart Research Associates, which reached a far more pessimistic conclusion:

The majority [of consumers] rarely use seatbelts . . . . There are few signs here that this situation will change. Even though the vast majority of Americans express considerable concern about auto accidents . . . nonetheless they decide not to use seatbelts. Nor is there any sign of increasing seatbelt use among the young. . . .


97. See generally Appropriations Hearings, supra note 73.
98. See Peck Letter, supra note 85.
99. NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra note 65, at ix, 28.
100. See id. at 88.
101. See id. at 40.
102. Id. at 39.
103. Id. at 88-90.
reviewed by the agency. NHTSA argues that its program will succeed where others failed because the combination of mass media and education components will create a synergistic effect that was absent from past efforts.104

Incentives: In its Safety Belt Effectiveness Report, NHTSA noted that incentives and rewards are the primary means used by psychological researchers and practitioners to induce desired behavioral changes. Yet, according to the agency, these means have been "virtually absent" from efforts to promote seatbelt use.108 Consequently, NHTSA has sought to create an incentive structure that rewards individuals who wear seatbelts and organizations that promote seatbelt use. The agency, for example, has lobbied insurance companies to offer favorable insurance rates to their customers who wear seatbelts.106

Use Requirements: NHTSA’s plan to encourage private and public employers to adopt mandatory use requirements rounds out the agency’s new approach. According to NHTSA, safety belt use has risen to as much as 50-90 percent where employers have required their employees to wear safety belts on the job.107 Of course, the success of these policies depends on the employer’s ability and willingness to enforce them,108 both of which may be limited.109

3. Results

Over the past two years, NHTSA has monitored the program’s results in nineteen U.S. cities and at roughly fifty sites within each city.110 The most recent report from the agency’s nineteen-city survey shows that estimated national seatbelt use has increased from 11.3 to 13.9 percent—2.6 percentage points.111 Applying the agency’s formula of 180 lives saved for every percentage point increase in safety belt use, the current campaign

104. Id. at 88-93.
105. Id. at 51.
106. According to NHTSA, nearly 90 percent of those asked say that they would wear seatbelts if they would receive reduced insurance premiums. Id. at 52. However, insurance companies have been reluctant to endorse this type of incentive because of the difficulty of verifying that policyholders are actually wearing their seatbelts. Id.
107. Id. at 58-62.
108. For example, strict enforcement of belt policies has led to high use rates on military bases. Id. at 60.
110. See RESTRAINT SYSTEM USAGE REPORT, supra note 76, at 3. See also Appropriations Hear- ings, supra note 73, at 460.
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has saved roughly 936 lives during its first two years. Depending on one's assumptions, the cost-benefit ratio of these results could vary widely. Nonetheless, because of the exceptionally high costs of highway tragedies, the program may still have been cost-beneficial. Other approaches to auto safety, however, may also be cost-beneficial and arguably are more cost-effective.

4. Comments

Although the current NHTSA campaign employs more sophisticated techniques than previous campaigns, the agency's program seems unlikely to achieve anything near its goal of twenty-five percent safety belt use by the end of 1984. The modest results of NHTSA's education campaign to date indicate that it is destined to repeat earlier failures.

NHTSA believes its mass media, education, incentive, and private mandatory use programs provide a powerful combination that will make its new seatbelt campaign the most successful in American history. The agency grounds its optimism on the reported success of seatbelt education campaigns conducted in other countries. But more often than not, the

112. The GAO's analysis, supra note 75, at 86, indicates that these estimates may be exaggerated because safer drivers—i.e., those that have fewer accidents in any case—are the ones most likely to respond to a seatbelt campaign. NHTSA's predictions may also be overly optimistic in assuming that increases in seatbelt use will be permanent. Previous studies show that the increases in seatbelt use from education campaigns are usually quite temporary. See supra note 95.

113. At the risk of oversimplifying, if one assumes, as NHTSA does, that 180 lives are saved and 3400 injuries avoided with every percentage point increase in seatbelt use, see supra note 75, then the 2.6 percent increase over two years has saved at least 936 lives and avoided 17,680 serious injuries. Given annual program costs of $3.23 million, the cost per life saved has been $6,902 and the cost per injury avoided $365. If one uses the GAO's estimate of $27 million for the cost of the program, the cost per life saved increases to $19,231 and the cost per injury avoided jumps to $1,018. Even these figures yield positive net benefits given NHTSA's assumption that each life saved produces benefits of $265,000 and each injury avoided produces $9,400 in benefits.

We should note that these computations address only NHTSA's costs for the campaign, not total social costs. For example, NHTSA claims that many private sector groups have contributed advertisements and other resources to the campaign. In a strict cost-benefit analysis, these costs would also have to be included, as would such items as consumer inconvenience (buckle-up costs). We have not attempted to calculate these indirect costs.

114. We do not propose to review the extensive literature on the costs and benefits of passive restraint requirements. Suffice it to say that we believe a passive restraint rule that excludes the detachable belts option would likely be cost-beneficial. The key point is that merely because the education campaign may produce positive net benefits to society does not mean that it will be more effective than other regulatory approaches. See, e.g., AUTOMOBILE CALENDAR, supra note 87, at 242-247. This report, compiled near the end of the Carter Administration, demonstrates that until 1981 NHTSA strongly favored its passive restraint requirements. The Automobile Calendar also surveyed other NHTSA proposals for improving auto safety, including promotion of state safety belt laws, crashworthiness ratings, and general design requirements.

115. See Appropriations Hearings, supra note 73, at 456-57.

116. See supra note 90.

117. Appropriations Hearings, supra note 73, at 456-57.

118. NHTSA cited seatbelt campaigns in Great Britain and Sweden as evidence of the potential for the success of a true education program. NHTSA SAFETY BELT EFFECTIVENESS REPORT, supra
apparent success of such campaigns was only temporary and was achieved at a very high cost.\textsuperscript{119} Foreign campaigns have been more successful in creating public attitudes in favor of mandatory use laws than in achieving permanent gains in seatbelt use.\textsuperscript{120}

In addition, the campaign is insufficiently comprehensive to overcome ingrained behavior patterns regarding safety belt use. Notwithstanding NHTSA's optimism about its ability to change negative attitudes toward seatbelt use, it has not realized that the establishment of favorable attitudes toward a product like safety belts is often not enough to overcome firmly entrenched behavior patterns—in this case the longstanding refusal to wear seatbelts.\textsuperscript{121}

Solid and regular reinforcement is needed to increase seatbelt use and maintain such gains. Yet, little in NHTSA's education campaign suggests that the agency will be able to invest the resources and time necessary to achieve permanent increases in seatbelt use. First of all, although NHTSA's campaign is a high-cost one by American standards, the agency's commitment is quite modest when compared on a per capita basis with a program like that of Great Britain.\textsuperscript{122} Second, if the agency expects to achieve long-term gains, it must adopt, or be allowed to adopt, a truly long-term perspective. Changing the patterns of seatbelt use in the absence of compulsory laws is, at best, likely to be a decade-long project, not a three-year program. Yet, a comparison of the modest results to date with the agency's initial projections suggests that NHTSA will find it difficult to muster the political support necessary to continue the program long enough to achieve permanent gains in safety belt use. Finally, we suspect that the cost of an adequately comprehensive seatbelt campaign could prove to be so high that the program would be much less cost-effective than other regulatory options for reducing highway fatalities.\textsuperscript{123}

\textsuperscript{65}, at 29-32. Britain spent $2.5 million per year for 10 years on a mass media campaign promoting seatbelt use. During this time, usage rates increased from 12 to 33 percent. Sweden conducted a series of combined mass media and education programs from 1971-1974, which increased usage rates from 15 to 36 percent. \textit{Id.}

\textsuperscript{119}. \textit{Id.} at 28-29. On a per capita basis, a campaign as extensive as the British effort could cost as much as $10 million per year to reproduce in the United States—more than three times the $3.23 million per year that NHTSA claims to be spending on its current campaign.

\textsuperscript{120}. Notwithstanding the alleged success of its mass media campaign, Great Britain enacted a compulsory seatbelt law in August 1981. Sweden enacted its compulsory seatbelt law in 1975, only a year after its seemingly successful seatbelt program was completed. See Hakkert, Zaidel & Sarelle, \textit{Patterns of Safety Belt Usage Following Introduction of a Safety Belt Law}, 13 \textit{ACCIDENT ANALYSIS & PREVENTION} 65 (1981), for a list of other countries that have passed compulsory seatbelt laws.

\textsuperscript{121}. \textit{See supra} text accompanying notes 48-54.

\textsuperscript{122}. \textit{See supra} note 119.

\textsuperscript{123}. \textit{See supra} note 114.
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B. Reducing Burn Injuries

Project Burn Prevention, like the NHTSA safety belt campaign, provides several insights into the way government agencies employ education campaigns. The program was more generously funded and more carefully developed than most education campaigns. Its creators included in it a detailed, comprehensive evaluation component and monitored the project closely. At the same time, Project Burn Prevention, like many campaigns, included only a brief implementation period. Despite its many positive attributes, the program ultimately failed to generate measurable changes in consumer behavior.

1. The Problem: Excessive Fire Deaths and Injuries

The United States shares with Canada the dubious distinction of having the highest fire death rate in the world. Fire is the fourth leading cause of accidental death, and the second leading cause of accidental death in the home. Fire causes almost 5,000 residential fatalities and over 21,000 injuries annually. Most victims of fire in the home are the very young and the elderly.

In response to national concern about fire safety, the newly-created Consumer Product Safety Commission (CPSC) in 1974 commissioned a consortium of Massachusetts institutions to develop a consumer education program to promote burn injury prevention. The one million dollar project eventually stretched over four years. The CPSC decided upon an education program in this area, in part, because some expert opinion held that education could address aspects of the burn problem not suscep-
tible to other means of remedy. Project Burn Prevention tested this opinion, because it sought not only to measure changes in consumer attitudes and knowledge, but also to measure changes in behavior—as reflected in reductions in the burn injury rate—resulting from the program.

2. The Campaign

Project Burn Prevention consisted of four phases: needs assessment, program development and establishment of burn incidence baseline data, program implementation, and evaluation and revision of program materials.

In Phase I, the Project Burn Prevention researchers collected epidemiological data to determine the distribution, according to age and sex, of burn injury victims, relative frequency of different types of burn injuries, relative severity of different types of burn injuries and the distribution by age of victims of different types of burn injuries. The researchers used this data to relate burn injury patterns among different population groups to their knowledge about burn injury and its prevention. Researchers concluded that the campaign should focus on scald burns, because of their high frequency, and on flame burns, because of their extreme severity.

130. See Final Report, supra note 128, at 4-5.
131. In this respect, Project Burn Prevention went beyond the other programs discussed in this Article. In its seatbelt campaign, for example, NHTSA is studying use rates, not reductions in death and injury. NHTSA claims an intention to measure reductions in death and injury at some future point. See Office of Occupant Protection, National Highway Traffic Safety Administration, Department of Transportation, Evaluation Plan 1 (1983).
133. The burn injury data came from burn reports received under a mandatory reporting system run by the Massachusetts Department of Public Health. See C. Healer, E. McLoughlin & V. Guilloy, Burn Injuries: Causes, Consequences, Knowledge, Behaviors, pt. 1, 3-4 (1976) (report prepared for U.S. Consumer Product Safety Commission) [hereinafter cited as Burn Injury Report].
134. Id. at pt. 1, 6 (finding that the very young have the greatest risk of burn injury).
135. See id. at pt. 1, 9. Scald burns represented the most common type of burn reported (44 percent). Next were flame burns (27 percent), contact burns (13 percent), radiation burns (sunburn, sunlamps, etc.) (3 percent) and electrical burns (2 percent).
136. See id. at pt. 1, 10 (noting flame burns inflict the most severe harm).
137. Id. at pt. 1, 11.
138. The researchers administered questionnaires to obtain data concerning the participants' levels of knowledge regarding burn hazards. To the researchers' distress, most people answered correctly only 35-50 percent of questions designed to elicit basic information. One item of special concern arose from the study: while parents of young children seemed to know a great deal about scalds, young children have the highest scald burn injury rate. This fact would seem to suggest that knowledge per se is not a complete solution to the problem. Id. at pt. 1, 13-17.
139. Id. at pt. 1, 22. Some of the other more interesting conclusions: (i) while certain predominant themes should be emphasized in burn prevention education, care must be taken to address specific situations and age-related risks, rather than to broadcast vague generalizations and fear-provoking
In Phase II, the Project Burn Prevention group developed informational and educational materials designed to address five occasionally overlapping audiences: (i) a general audience of all persons exposed to public information through the mass media, (ii) children in grades K-1, (iii) children in grades 2-3, (iv) high school students, and (v) members of certain civic, fraternal and educational groups—generally young adults and the parents and caretakers of young children—who could be reached through community education channels.\footnote{140}

The researchers developed a wide variety of materials targeted to the characteristics of different groups. The materials were designed to address specific, age-related risks and to avoid vague generalizations and fear-provoking messages. Materials ranged from thirty-second television public service announcements and an information booklet to reach the general public, to filmstrips and games for students, to lecture materials for civic and fraternal groups.\footnote{141}

Phase III of the four-year project consisted of an eight-month message implementation period, from October 1977 to May 1978.\footnote{142} Implementation varied across geographic communities as well as across population groups. For example, in the greater Boston standard metropolitan statistical area (SMSA) the group used only a mass media approach, which they supplemented in one community with a school education program. In another community, outside the Boston SMSA, the researchers used a community outreach program. These variations allowed the researchers to compare the effectiveness of different approaches. In the evaluation phase, Phase IV, the researchers performed three types of analysis. They analyzed comments by participants regarding the usefulness of the program; compared levels of knowledge among program participants with their baseline levels and with levels of knowledge among control population

messages; (ii) burn safety messages should be age-appropriate and action-oriented. Measurable behavior change should be a primary goal; (iii) the educational campaign should aim to reach the broadest possible range of socioeconomic groups; (iv) burn injury risk groups should not be approached in isolation, but as interacting members of families. Messages addressed to each age group can be transmitted among family members; and (v) consumers tend to respond to messages that address ways they can protect other people, rather than themselves. People will often ignore precautions to keep themselves safe, yet will take great care to protect others. \textit{Id.} at pt. 1, 24-27.

\footnote{140. See FINAL REPORT, \textit{supra} note 128, at 11-13.}

\footnote{141. For the public information campaign, the researchers developed four thirty-second television public service announcements, three printed posters and an information booklet. For the school program, the group developed cartoon books and films for grades K-1. The researchers used dramatic presentations, a story card series and filmstrips with suggested follow-up activities for grades 2-3. To reach high school students, the group developed films, audiocassettes, a student book, a simulation game, small group exercises, and structured discussion groups to focus on specific hazards—high tension wires, flammable liquids and risks to children in their care—relevant to teenagers. Finally, to promote fire safety through community outreach channels, the researchers developed lecture materials for civic, fraternal and educational organizations. \textit{Id.}}

\footnote{142. \textit{See id.} at 7.}
groups; and compared burn injury rates before, during and after the implementation period with burn injury rates in control communities. The evaluation did not include any quantitative analysis of attitude changes.

3. **Results**

The detailed evaluation scheme adopted by the research group was intended to permit precise assessment of the effectiveness of the program components. Different persuasion techniques did indeed produce dissimilar effects. All participants, and especially those in the school programs, praised Project Burn Prevention and expressed a desire to use its educational materials in the future. Increases in knowledge about burn hazards varied according to the setting and the materials used. The school education program proved successful, albeit by varying degrees, in increasing student knowledge about burn hazards. To a lesser extent, the community outreach program also succeeded in increasing knowledge. The public information campaign, however, with the possible exception of an information booklet, had no measurable effect on adults' knowledge of burn hazards. Most significantly, statistical measurements of burn injuries among the participants—the key variable measured—did not show significant decreases in frequency or in severity.

143. The Project Burn Prevention group strongly criticized previous fire prevention campaigns because they had "lacked a careful study design that would permit quantitative evaluation of the effectiveness of the program, both to change knowledge and to have an impact on injury rates." Id. at 4. Accordingly, the group made evaluation a "major undertaking" of their campaign. Id. at 54.

144. Id.

145. The education program proved more successful with elementary school students than with high school students, although the latter did achieve statistically significant increases in knowledge. At the conclusion of the program, for grades K-1, 54 percent more classrooms in the experimental site (Lynn) passed a written test on burn hazards than in the control site (Holyoke). Id. at 64. In grades 2-3, 68 percent more Lynn classrooms passed the test. Id. at 83. At the high school level (grades 10-12), only about 10 percent more classrooms in Lynn passed the test than did those in the control site. Id. The researchers attributed the superior performance among the lower grades to better cooperation from elementary school teachers than from their high school counterparts. See id. at 100-101.

146. Although the community outreach program did not contain materials designed specifically for use in the schools, this program component produced its most significant results in the schools. Apparently, several teachers discovered the school materials in the public library in Quincy, the outreach community, and subsequently used them in their classrooms. Several youth organizations used them as well. Nineteen percent more grade K-1 classrooms in Quincy passed the written burn hazard test than did their counterparts in Holyoke, the control site. Id. at 64. For grade 2-3 classrooms, the comparable difference was 31 percent. Id. at 83. High school students in Quincy, however, demonstrated no significantly greater burn injury knowledge than their control site counterparts. Id. at 111. Adults questioned by telephone in the community outreach site, with the possible exception of those who had received the informational booklet, demonstrated no significantly greater knowledge than those questioned in the control site. Id. at 186-87.

147. Id.

148. Id. at ix.
4. Comments

Project Burn Prevention encountered problems that often plague education campaigns: message attenuation and limited duration. The messages conveyed by the project materials reached only a fraction of the total audience. Of that fraction, only a small portion were exposed to burn injury situations; yet a smaller portion remembered the program messages; fewer still—virtually none, according to the project results—were able to use their increased knowledge to avoid a burn injury.\textsuperscript{149} Evidently, the implementation period (eight months) was insufficiently long to overcome the message attenuation. A longer implementation period would have increased the cost of the project, but might have been more effective in inducing behavioral change.

Two additional, methodological problems resulted from the relative infrequency of burn injuries. During its brief implementation period, Project Burn Prevention in effect had to compete with random fluctuations in the burn rate if it was to demonstrate significant results.\textsuperscript{150} The Project Burn Prevention messages would have had to be extremely powerful and persuasive to overcome the effect of random chance on the burn rate over such a short period. It is hardly surprising that the program was unable to generate statistically significant results under these conditions. Moreover, the project researchers, in a laudable attempt at precise measurement, probably developed and separately analyzed too many program components. The impact of each component was thereby diffused, and no single component could be shown to have produced a measurable impact.\textsuperscript{151}

Notwithstanding the failure of Project Burn Prevention to generate measurable reductions in burn injury rates, the researchers argued that their results did not demonstrate the inadequacy of education programs. They concluded "[t]he study shows that participants learned important information about the prevention and emergency treatment of burn injuries. Recognizing the problem is the first step in an often long and arduous process of raising public consciousness about a problem to the point where public pressure builds to solve it."\textsuperscript{152} This analysis, of course, does not speak to the effectiveness of education in reducing injuries. Rather, it reveals that, over time, education can promote attitudes that allow for the

\textsuperscript{149} The significance of message attenuation can be illustrated by a concrete example. If, at each of these four stages, the Project Burn Prevention program succeeded in reaching only one half of every 100 potential members of its audience, the number of people ultimately protected from injury because of the program would be approximately six. (100 x \(\frac{1}{2}\) x \(\frac{1}{2}\) x \(\frac{1}{2}\) x \(\frac{1}{2}\) = 6.25) See id. at 40.

\textsuperscript{150} See id. at 41.

\textsuperscript{151} Id. at ix.

\textsuperscript{152} Id. at 56.
creation of effective regulatory solutions which do not require individual behavior modification.

The Project Burn Prevention researchers themselves eventually reached this conclusion. In an article published two years after completion of the campaign, members of the research group acknowledged the limited effectiveness of education to promote safe behavior and thereby reduce the burn rate. Education, in their view, could be used most effectively as part of a set of strategies to reduce burn injuries. Future education programs, they argued, should focus on "[c]reating a public attitude of willingness to accept those measures of passive protection that will reduce injuries and prolong life and good health."184

C. Attacking Heart Disease

The Stanford Three Community heart disease program described below is unusual insofar as it produced persuasive evidence that an education campaign using only mass media can modify consumer behavior. The substantial resources devoted to this small-scale study, however, suggest that successful national education programs may be far more costly than most policymakers believe.

1. The Problem: Heart Disease and Life Style

Heart disease is the leading cause of death in the United States.188 Research has shown that cigarette smoking, elevated plasma cholesterol and hypertension increase the risk of heart disease.188 Unfortunately, cigarette smoking, diets high in saturated fat and cholesterol, sedentary living habits and excess weight have proven severely resistant to change. Researchers have concluded that the habits influencing these cardiovascular risk factors often are reinforced by culture and custom.187

153. McLoughlin, Vince, Lee & Crawford, Project Burn Prevention: Outcome and Implication, 72 AM. J. PUB. HEALTH 241, 246 (1982) (In general, passive measures that automatically protect the community from injuries are more effective in the prevention of injuries than active measures that depend on persistent behavior change.)
154. Id.
155. See PUBLIC HEALTH SERVICE, U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, HEALTHY PEOPLE: THE SURGEON GENERAL'S REPORT ON HEALTH PROMOTION AND DISEASE PREVENTION 53-59 (1979) (in 1977, heart disease was responsible for over 700,000 deaths. Heart disease is also the greatest cause of permanent disability claims among workers under 65.) See also Maccoby, Farquhar, Wood & Alexander, Reducing the Risk of Cardiovascular Disease: Effects of a Community-Based Campaign on Knowledge and Behavior, 3 J. COMMUNITY HEALTH 100 (1977) (United States morbidity and mortality due to cardiovascular disease rank second highest, after Finland, among developed countries) [hereinafter cited as COMMUNITY HEALTH article].
156. See Farquhar, Wood, Breirrose, Haskell, Meyer, Maccoby, Alexander, Brown, McAllister, Nash & Siren, Community Education for Cardiovascular Health, 1 LANCET 1192, 1192 (1977) [hereinafter cited as LANCET article].
157. Id.
2. The Campaign: The Stanford Three Community Study

In 1972, two Stanford professors—one in the medical school and one in the school of communications—undertook to develop a heart disease education campaign. Mindful of past failed attempts in this area, the professors sought to employ new and more sophisticated techniques.158 Federal grants of almost $4 million financed the five year project.159

The professors chose three California communities—Tracy, Gilroy and Watsonville—for the program. They selected Tracy as the control city because it is distant from and does not share broadcast channels with Gilroy and Watsonville. Gilroy and Watsonville share some television and radio channels, but each town has its own newspaper.160

Notwithstanding their view that other education campaigns using mass media had demonstrated little success,161 the researchers adopted this approach as one of the major components of the program. They used the media to saturate residents of Gilroy and Watsonville with information about how and why to adopt lifestyle changes to reduce the risk of heart disease. The researchers acquired a substantial amount of free media

158. Id.
160. The three towns chosen were distinct communities, each with a population of about 15,000. None was a bedroom community for any other major city, nor did any of the communities chosen receive major television broadcasting from San Francisco, San Jose or any other major city. Beyers, supra note 159, at 13.

After selecting the communities, the professors gathered a research team which selected from each town a random sample of subjects between the ages of 35 and 59. The age distribution of the subjects was chosen to allow the campaign to operate on those individuals whose lifestyles could be altered before they reached the 60-70 year age bracket, where incidence of coronary disease is at its highest. Id.

The team administered to each subject a 400-item behavioral questionnaire designed to determine the level of knowledge of each subject and to identify the points at which each showed resistance to persuasion. One item in the questionnaire asked the participants to respond to the statement "Breakfast doesn't seem right without eggs." Thirty-five percent agreed. Thirty percent concurred with the statement, "It's practically impossible to cut down on smoking." Another item, "I have a hard time making myself get out and exercise," elicited agreement from 59 percent of those questioned. And 51 percent of the respondents believed that, "Sometimes, no matter what a person does, he gains weight." Id. at 15-17.

The researchers found a certain amount of ignorance in addition to resistance. For example, most respondents believed that pork contains more cholesterol than liver, when, in fact, pork is very low in cholesterol. Id. at 17.

The researchers also performed physical examinations which included measurements of each subject's plasma cholesterol, triglyceride concentrations, blood pressure and weight. These data were then used to develop a multiple logistic function of risk, based on the function developed in an earlier study, see Truett, Cornfield & Kannel, A Multivariate Analysis of the Risk of Coronary Heart Disease in Framingham, 20 J. CHRONIC DISEASE 511 (1967) (noted in Beyers, supra note 159, at 103), which yields a prediction of the probability that a subject will develop cardiovascular disease within a period of roughly 12 years. Individuals in the top risk quartile were chosen for special study. In Watsonville, a random subset of two-thirds of this high risk group (and their spouses) received face-to-face intensive instruction. The other high risk individuals served as controls.

161. See LANCET article, supra note 156, at 1192.
space, and spent an additional $500,000 for advertisements.\textsuperscript{162} This combination of free and paid media space permitted the researchers to produce substantial amounts of programming.\textsuperscript{163} The researchers used a variety of printed matter, including posters placed in buses, stores and work-sites, to supplement television advertising.\textsuperscript{164} The program also incorporated a significant amount of material in Spanish to reach Spanish-speaking participants.

Each participant received a basic booklet, \textit{The Heart Of The Matter}, filled with facts about atherosclerosis and ways to prevent it, along with a 78-page family guide, \textit{The Cook's Book}, containing recipes designed to reduce heart disease risk factors. Several researchers credited the program's success to the printed materials because they provided participants with specific guidance at critical points in their activities, such as meal times. Other forms of communication might not have reached participants when they were engaged in risk-enhancing activities.\textsuperscript{166}

A distinctive and successful—but obviously expensive—feature of the Stanford program was its use of individualized behavior modification techniques on certain participants, called “intensive-instructees,” chosen from among a high-risk group in Watsonville.\textsuperscript{166} The techniques included an analysis of the behavior patterns of the participants and specially tailored programs to address the risk factors present in each participant's lifestyle. For example, smokers who were lean and had normal plasma cholesterol levels were given supplemental instruction about how to stop smoking, but not about dietary changes. Similarly, those who had elevated blood pressure levels were given special instruction in salt restriction and weight loss, while individuals with elevated levels of plasma lipids were given

162. See Tudge, Preventive Medicine, California Style, WORLD MED., July 27, 1977, at 17, 19.
163. The researchers produced about three hours of television programming, 50 television spots, 100 radio spots, several hours of radio programming, weekly newspaper columns, and a number of newspaper advertisements. \textit{Id.} at 19.
164. A typical 60-second TV spot showed a man sitting down before a plate of eggs, bacon and toast. He heavily salted the food. Then the plate suddenly disappeared. A narrator's voice intoned:

The great American breakfast really sets you up for heart disease. Egg yolks are high in cholesterol. So are fatty meats, whole milk and butter. Too much sugar adds more risk of heart trouble, so try a few replacements: substitute fresh fruits, low-fat milk and soft margarine.

You'll live longer — that's the heart of the matter.

165. See \textit{Beyers}, supra note 159, at 53.
166. The behavior modification principles applied in the intensive-instruction program followed five general steps: (i) analysis of the participants' behavior, (ii) modeling of the new behaviors, (iii) guided practice in the new behaviors, (iv) artificial reinforcement from instructions in the new behaviors, and (v) maintenance of the new habits without artificial reinforcement. See \textit{Community Health} article, supra note 155, at 104.
supplemental instruction in qualitative dietary changes.\textsuperscript{167} Intensive-instructees and their spouses attended nine counseling sessions, each of which varied in length from one and one-half to three and one-half hours.\textsuperscript{168}

3. \textit{Results}

According to the Stanford researchers, participants' knowledge about dietary factors affecting heart disease improved as the level of the education effort increased. In Tracy, the control town, increases in knowledge were minimal;\textsuperscript{169} in Gilroy and Watsonville, knowledge increases were significant.\textsuperscript{170} The greatest increases occurred among the Watsonville "intensive-instructees," but groups in Watsonville and Gilroy that received only mass media exposure also showed significant knowledge increases.\textsuperscript{171} Interestingly, and contrary to the results of most other studies on the same point,\textsuperscript{172} the Stanford researchers claimed "impressive" knowledge gains among the less-advantaged Spanish-speaking groups.\textsuperscript{173}

The researchers tested for behavioral changes in two ways: (i) by monitoring changes reported by the participants in their diets, exercise and smoking habits, and (ii) by measuring physical changes such as weight and plasma cholesterol levels.\textsuperscript{174}

Reported changes in diet generally tracked participants' levels of increased knowledge. For example, the intensive-instructees in Watsonville reported the greatest change—a sixty percent drop in daily egg consumption, whereas the Tracy control group showed only a nineteen percent drop.\textsuperscript{175} These results were consistent with the reported decreases in overall cholesterol and saturated fat intake.\textsuperscript{176}
More significant were the physiological changes measured by the researchers. Based on the lifestyle modifications reported by the participants, the researchers expected larger shifts in observed plasma cholesterol levels than they actually found. To explain the discrepancy, the researchers suggested a propensity of participants to exaggerate the extent of dietary and smoking changes they actually made. The Stanford group also conceded that preferable measures of the program's success would have been reductions in morbidity and mortality rates—data which could not be generated because of the small scale and limited duration of the program. Nevertheless, according to the measurements actually taken, plasma cholesterol levels shifted significantly during the course of the campaign. The researchers concluded that "the correlations between the observed and predicted cholesterol changes imply that the reported dietary changes are at least in part real, and ought not be dismissed as entirely artifactual."

Having succeeded where numerous others had failed—by demonstrating measurable changes in behavior through an educational program—the Stanford researchers have begun a new project in a much wider geographic area to determine whether the results from the three communities can be reproduced successfully. They have not yet conducted any additional studies, however, to determine the staying power of the original campaign.

4. Comments

The Stanford campaign avoided many of the pitfalls encountered by other programs. The researchers were able to raise more money for the campaign and to spend more time actually disseminating the message than, for example, the Project Burn Prevention group was able to do. Moreover, the Stanford team concentrated its efforts in small communities. The largest community in the Stanford program contained only about 15,000 people whereas Project Burn Prevention attempted, unsuccessfully,
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to spread its message throughout the Boston SMSA.

As one observer noted, the Stanford program was "perhaps the most sophisticated preventive campaign yet seen in the western world."\textsuperscript{188} The very characteristics that contributed to the success of the program, however, illustrate the limitations of education campaigns generally. The Stanford campaign demonstrates that education campaigns can be exceedingly difficult to implement, and require large amounts of money, talent and energy to produce meaningful results.\textsuperscript{184} While the program's mass media approach did produce measurable change, the greater success of the intensive-instructee component demonstrates that health and safety persuasion programs may best succeed when undertaken by expensive, highly labor-intensive methods. It remains to be seen whether campaigns can succeed when they are supported with less money, staffed by modestly trained employees rather than highly educated university professors and graduate students, and directed at a wider geographic area.

III. Concluding Observations and Recommendations

Government spends millions of dollars on information and education activities annually. Although the exact amount remains a matter of some mystery,\textsuperscript{185} it is indisputable that government involvement in these activities is considerable. Yet few campaigns undertaken in this country are as carefully developed and implemented as the three analyzed in this article. Few campaigns include any pre-testing to determine message appropriateness or effectiveness. Few devote as many resources to implementing their messages. Virtually none provides for evaluations of any behavioral changes induced by the campaign.\textsuperscript{186}

\textsuperscript{183} See Tudge, supra note 162, at 17.

\textsuperscript{184} Id.

\textsuperscript{185} Determining exactly how much money the federal government spends on information and education activities is difficult. See Yarwood & Enis, supra note 26, at 39 ("[t]he various components of such a figure are scattered throughout the budget, sometimes under ambiguous and/or unlikely headings"). In 1982, the government spent $205.5 million for advertising, ranking 29th out of the 100 top national advertisers in total dollars spent. ADVERTISING AGE, Sept. 8, 1983, at 1. Nearly all of this advertising, however, was done by the armed forces, the U.S. Postal Service and Amtrak. See Squeeze on Federal Ad Budgets, 17 MKTG. & MEDIA DECISIONS 62, 63 (1982). This figure does not include donated advertising space, which makes up a substantial portion of government advertising. See Clotfelter, The Scope of Public Advertising, in THE POLITICAL ECONOMY OF ADVERTISING 11-13 (D. Tuerck ed. 1978) (paper presented at American Enterprise Institute Conference, July 9, 1976).

\textsuperscript{186} See Staelin, supra note 38. See also Bloom, Evaluating Social Marketing Programs: Problems and Prospects, in MARKETING IN THE 1980S: CHANGES AND CHALLENGES 460, 460 (1980) (suggesting that many social marketers tend to be reluctant to undertake evaluations because of their feelings that evaluations "tend to be expensive, bothersome, risky (i.e., budgets can be cut if results are poor), and capable of detecting only weak program effects."); Rossi & Wright, Evaluation Research: An Assessment of Theory, Practice and Politics, 1 EVALUATION Q. 5-52 (1977).
A. Reflections On Three Education Campaigns

Although the three campaigns reviewed in this Article are exceptional in many ways, none stands as such an unqualified success that one can conclude the key to public persuasion has been discovered. All provide some insight into the process of persuasion but leave major questions unanswered.

Project Burn Prevention\textsuperscript{187} was the campaign least successful in producing measured changes in behavior. With the aid of hindsight, some of the reasons for its apparent lack of success seem clear. The program was well conceived and well executed. As the project’s developers discovered, however, the program suffered in part because it relied too heavily on mass media alone, attempted to impart too many messages through too many approaches, devoted too little time to actual message implementation, and relied on an evaluation scheme that required very large shifts in injury patterns to demonstrate significant campaign-related effects on behavior.

In contrast, the Stanford Three Community heart disease campaign\textsuperscript{188} avoided many of the shortcomings of Project Burn Prevention. The mass media saturation approach used in the Stanford study did produce statistically significant changes in behavior, but the effects of the campaign were greatest upon those individuals who also received intensive, face-to-face counseling. It may be impractical to reproduce on a national level the intensive media saturation and counseling techniques used in the heart disease campaign.

The ongoing NHTSA campaign may answer some questions about how expensive and intensive a nationwide campaign must be in order to change the behavior of large numbers of citizens. A comparison of the present NHTSA effort with previous safety belt campaigns suggests, however, that the agency is not devoting sufficient resources to produce meaningful results. Unfortunately, in view of current congressional misgivings about NHTSA’s campaign,\textsuperscript{189} greater appropriations seem unlikely.

Although we have stressed that much remains to be learned about the effectiveness of health and safety education campaigns, several points do seem clear. One important lesson to be drawn from the case studies is that health and safety hazards which apparently cannot be addressed by agency standards or other types of regulation are not therefore necessarily suitable candidates for information and education programs. These pro-

\textsuperscript{187} See supra Section II.B.
\textsuperscript{188} See supra Section II.C.
\textsuperscript{189} See Appropriations Hearings, supra note 73; Small Car Safety Hearings, supra note 5.
grams may have limitations as great as, or greater than, regulation.\textsuperscript{190} Given human frailties, some accidents simply cannot be prevented.

Because human behavior patterns are often deeply ingrained, it also seems clear that, where possible, policymakers seeking to address health and safety concerns ought to favor campaigns that require only “one time” actions by consumers. Campaigns to promote the purchase of smoke detectors and the installation of safety latches on medicine cabinet drawers are good examples. Education campaigns that attempt to alter patterns of behavior ought to be undertaken reluctantly-only after policymakers have concluded there is no other feasible way to address a problem and that education can solve the problem.\textsuperscript{191}

Health and safety education campaigns should be predicated on the assumption that changes in behavior come slowly, modestly, and often expensively. Accordingly, government policymakers should shun “campaign of the month” approaches. Once undertaken, campaigns that require long implementation periods, as many do, should be supported for the time and with the funding necessary to produce a successful result. Major campaigns, like those discussed in this Article, should include detailed evaluation components that will allow agencies to draw the appropriate lessons from their own and other campaigns.

Finally, to avoid often wasteful expenditures, government policymakers should insist that proposed education campaigns be subject to the same rigorous, skeptical scrutiny that most proposed regulatory measures currently undergo. The failure to adopt such an approach will lead policymakers to opt unthinkingly for politically popular education campaigns over more cost-effective alternatives such as regulations or, as may be appropriate in many circumstances, no action.

B. A Proposal for Reform

Having analyzed the potential pitfalls of education campaigns, we would like to suggest some possible reforms. We do not advocate an abrupt halt to all ongoing information and education campaigns. Nor do we recommend that agencies cease issuing press releases, fact sheets and brochures. For present purposes, we suggest several specific changes in campaigns we would classify as “major”: that is, those campaigns which either (i) require annual expenditures of more than $250,000, or (ii) ex-

\textsuperscript{190} See supra note 6.

\textsuperscript{191} By this, we mean that government should not attempt to do the impossible. Some groups, such as hard-core drug addicts, simply may not be susceptible to persuasion by education campaigns. Government should accept this limitation.
tend beyond one year. Campaigns of this magnitude should not be commenced without appropriate care to ensure efficacy and cost-effectiveness.

Accordingly, policymakers should consider undertaking major campaigns only after making a number of findings and publishing them in the Federal Register. Publication of the findings would permit input from a variety of interested parties who might be in a position to contribute valuable suggestions. To preserve simplicity, we would not permit judicial review of the findings.

The list of required findings might include the following:

1. The agency has identified the specific segments of the public particularly at risk from the hazards to be addressed by the campaign.

2. The segments of the public to be targeted are reasonably susceptible to persuasion through an education campaign.

3. For campaigns designed to alter a pattern of behavior, the agency has concluded that no reasonable alternative campaign promoting a "one time" preventive action by members of the target audience could adequately reduce the hazards to be addressed by the campaign.

4. For campaigns designed to alter a pattern of behavior, the agency has estimated the time necessary for the campaign to eliminate or adequately reduce the hazards to be addressed by the campaign.

5. The educational materials and modes of distribution have been sufficiently pre-tested on a small scale to permit the agency to draw a reasonable inference that the materials will be successful on a wide scale.

6. The agency has developed a reasonable evaluation plan designed to measure behavioral changes induced by the education campaign. Where appropriate and practicable, the plan should measure actual reductions in the risks to be addressed by the campaign.

These criteria represent our judgment regarding an appropriate threshold test against which to examine education campaigns. Some agencies may routinely conduct campaigns that require $250,000 annually, while the $250,000 would cover at most two or three CPSC campaigns in ten years. The one-year criterion, however, would cover a number of campaigns at the CPSC and other small health and safety agencies. These limits would not, we think, be over-inclusive.


See supra note 191.

Obviously, the best measure of success would be reductions in deaths and injuries. In many campaigns, it will be too difficult to gather meaningful mortality and morbidity statistics. In most cases, therefore, educators should measure changes in behavior, such as increased seatbelt use, that seem likely to reduce injuries and deaths.
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7. The agency has compared the proposed education campaign to alternative approaches, such as standards, to determine its relative effectiveness in reducing the hazards to be addressed by the campaign.

8. The costs of the campaign bear a reasonable relationship to the benefits to be derived from the campaign.\(^{106}\)

Conclusion

Mark Twain once said, "Soap and education are not as sudden as a massacre, but they are more deadly in the long run."\(^{107}\) We agree with Twain that education can be effective in many contexts.\(^{108}\) We disagree, however, that education does much good when it takes the form of a multitude of short-term, poorly conceived campaigns. We believe millions of taxpayer dollars are spent annually on education campaigns that produce no tangible benefits. In many cases, these dollars could be spent reducing deaths and injuries through more effective means. Until more careful thought and planning are brought to bear to prevent this waste, we suspect true regulatory reform will not have arrived.

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196. This finding does not require a formal cost-benefit analysis. It seeks a comparison of the known costs and benefits. We generally find the requirement for cost-benefit analysis to be over-stressed in the case of regulations. To the extent that government engages in this type of analysis in developing regulations, it should do so for education campaigns to avoid unfairly biasing officials in favor of education campaigns.


198. Education programs designed to change attitudes, for instance, may complement attempts to control health and safety hazards by other means. See supra text accompanying notes 118-20 and 152-54.