



Background Paper

Risk Perception and Communication: Environmental Tobacco Smoke and Child Health



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Abstract



Tobacco use and ETS issues present a significant challenge to conventional notions of risk communication, which were originally formulated in the late 1980s in the context of involuntary public exposures to chemicals, nuclear power, hazardous waste facilities, and similar technologies. Conventional wisdom on this subject encourages us to concentrate on risk message design and delivery parameters, such as source credibility and empathy, in order to maximize persuasive effectiveness and the elicitation of trust and believability. However, none of the elements in this conventional wisdom is applicable to the case at hand.

“Rational-format” risk messages themselves, as well as the conventional forms of message delivery (based on marketing communications strategies), have been shown to fail utterly in the case of tobacco use. In fact, all of the notable decreases in use occurred before the onset of massive, government-financed campaigns against tobacco; and, of course, the rise in youth smoking has occurred in open defiance of the messages in those campaigns. An examination of the obstacles to successful risk communication for tobacco use shows why this has happened: In general, rational-information risk message campaigns are unable to break through the social, educational, attitudinal, psychological and other barriers that exist in the lives of the smoking sub-populations today. In addition, the “iconic” status of tobacco in modern society inhibits governments from taking the more drastic types of actions they would otherwise choose to carry out if there were any other risk factor of similar consequence within their purview.

This paper contends that, if the tobacco case teaches us one thing about communication, it is that we must broaden considerably our notion of what constitutes effective risk communication practice. Communication is not just about messages and their delivery; rather, society communicates its changing conceptions of acceptable behaviour in many different ways, of which rational-format messages are perhaps the least important. Recognizing the truth of this proposition is essential for directing social resources for risk reduction towards areas of wise investment and away from unprofitable ones.

Following Zimring, I argue that all the victories that have been won so far in North America on ETS have occurred because social élites have been mobilized to drive smoking out of public spaces, one after the other. These campaigns do not address smokers directly; rather, they are demands by the nonsmoking majority to the effect that conditions in the public sphere should mirror the decisions that the majority have made in their private lives. The experience to date confirms that this is a highly successful way to reduce exposure to ETS for everyone, including children. This leaves only the private domestic sphere as the major setting for ETS exposure, and the paper concludes with some suggestions as to how this too might be addressed.

far relentless upturn in adolescent tobacco use has occurred amidst an attitude of blissful indifference or defiance towards the contrary messages circulating in the social environment.⁵ A review article sketches this point – and the implications for conventional “rational-format” risk messages -- in stark relief: “Controlled trials, chiefly in the USA, have shown that the provision of information on smoking and health has no effect on teenage prevalence.”⁶

The fall in tobacco use among former smokers in the adult populations in some countries represents a triumph of *informal* risk communication, where individuals in collaboration with a newly-militant medical community absorbed the increasingly abundant new information about tobacco risk and made personal choices to discontinue use.⁷ During this entire period (1965-90) there were virtually no direct and high-profile government challenges to the tobacco industry. The difference between this situation and that of the 1990s could not be starker: The industry is under siege and yet it retains its tremendous profitability, is expanding its global markets rapidly, and is able to recruit new users by the hundreds of thousands annually even where its attackers are most active.⁸ For anyone concerned with good risk communication practices in general and their relevance to tobacco use in particular, the beginning of wisdom is to recognize and acknowledge just how daunting the obstacles are. For all in all tobacco use represents a standing refutation to any belief that we know how to carry out effective risk communication practice.⁹

Obstacles to risk communication about tobacco use

There are many such obstacles, and it is necessary to review them briefly in order to set the stage for any evaluation of strategic directions for particular sub-problems, such as ETS and child health.¹⁰ Some of the most important obstacles are: (1) the nature of the demographic and psychographic profiles of the “residual” user population; (2) the falling age of smoking initiation and the consequences of early onset; (3) the enduring “iconic” status of smoking in popular culture; (4) the inherent difference between tobacco and all other consumer products; (5) the “discounting” of tobacco use risk messages by smokers; (6) a failure to explicitly recognize in public health campaigns

⁵ It is possible to imagine an argument to the effect that adolescent use rates might be higher still in the absence of the intensive propaganda campaigns, and thus that those campaigns dampen the rate of increase; however, the burden of proof for such a contention would lie with its proponents.

⁶ D. Reid, “Tobacco control: overview,” *British Medical Bulletin*, 52 (1996), 108-20, citing W. H. Bruvold, “A meta-analysis of adolescent smoking prevention programs,” *Am. J. Public Health*, 83 (1993), 872-80.

⁷ An insightful study comparing long-term patterns in tobacco, alcohol, and “illicit” drug use confirms that shifts in consumption patterns are responses to social trends, in the first instance (especially behavioural changes among “high-status” groups), and that government actions occur later: Franklin E. Zimring, “Comparing cigarette policy and illicit drug and alcohol control,” in R. L. Rabin & S. D. Sugarman (eds.), *Smoking Policy: Law, Politics and Culture* (New York: Oxford University Press, 1993), pp. 95-109. I shall return to this important point later.

⁸ At current teenage prevalence rates in the U. S. “3,000 youths become *regular* smokers every day”: *Growing up Tobacco Free*, p. 8.

⁹ It should be obvious that these comments are relevant to population-average smoking rates, not to the decisions by particular individuals to start or stop smoking, especially the latter, for which there are a number of approaches: J. Foulds, “Strategies for smoking cessation,” *British Medical Bulletin*, 52 (1996), 157-73.

¹⁰ In terms of the caveat noted earlier, these are some of the most important obstacles to successful risk communication that are most pertinent in North America. But the underlying principle of this approach has universal application: a search for successful strategies must begin with an analysis of obstacles.

the underlying medical basis of the problem (i.e., drug dependency); and (7) a monumental level of official hypocrisy in society's "mixed messages" about drug use.

1. *The residual user population.* The one-third of the population who are still regular tobacco users, in comparison with the other two-thirds, have on average lower household incomes (and thus also have poorer diets); are less well educated in terms of formal schooling and have poorer school performance; have relatively higher levels of emotional and psychological disorders, including major depression; are more subject to chronic stress; and even may have a genetic predisposition to addiction.¹¹ Moreover, many of these factors are correlated more highly with heavy smoking (more than 20 cigarettes per day) and inversely correlated with quitting, with some significant differences between men and women in these respects. Finally, since there are also environmental factors – such as being in the presence of smokers – in the causes of smoking behaviour, there is a higher likelihood of perpetuating it among these sub-populations from one generation to the next.¹² But all of these factors also represent *prima facie* strong obstacles to the chances for success of the "rational information" rhetorical structure which is the dominant format used in public-health persuasive communications campaigns. With respect to this format, all of the easy victories have already been won, and we really have very little to rely on in terms of trying to "reach" the residual population of dedicated smokers directly with risk messages that are likely to have any attitudinal or behavioural impact at all.
2. *Falling age of onset.* The relationship between age of initiation and later smoking patterns is: "The earlier in life a child tries a cigarette the more likely he or she is to become a regular smoker.... Furthermore, the earlier a youth begins smoking, the more cigarettes he or she will smoke as an adult."¹³ In the Canadian survey data from 1994/5, "16% of 21- to 39-year-olds who had ever smoked daily reported that they had started to do so at age 13 or younger" and "55% reported ages 14 to 17."¹⁴ It is likely that the reality is worse than the reported data indicates, since there is abundant anecdotal evidence about the dropping age of onset for a range of behaviours, including sexual activity and use of alcohol and other drugs. (Yet the most detailed Canadian effort on smoking prevalence, Health Canada's "Survey on Smoking in Canada," still does not collect data from persons under the age of 14.) Whatever the current state of affairs, the falling age of initiation also serves to block the prospects for successful risk communication, since the combination of factors (age plus those listed in the previous section) results in an profound indifference to long-term health effects.
3. *The iconic status of smoking.* Having surmounted early attempts by the temperance forces to link cigarettes with alcohol in their prohibitionist campaign, the tobacco industry gradually achieved for its premier product a status in popular culture rivalled only by the automobile.¹⁵ Hollywood films played a major role in disseminating positive images of smoking, beginning in the 1930s and continuing down to the present.¹⁶ Some of the strongest images relate smoking to "outlaw"

¹¹ P. S. Clarke, "Tobacco smoking, genes and dopamine," *The Lancet*, vol. 352 (1998), pp. 1998-9.

¹² *Growing up Tobacco Free*, pp. 52-6; J. Chen & W. J. Millar, "Age of smoking initiation: Implications for quitting," Statistics Canada, "Health Reports," 9 (no. 4, Spring 1998), pp. 39-46. In Canada the highest smoking rates for both adults and youth are among aboriginal peoples, especially those living in the Far North.

¹³ *Growing up Tobacco Free*, p. 29; see pp. 43-56 for the full account.

¹⁴ Chen & Millar, p. 41.

¹⁵ Richard Klein, *Cigarettes are Sublime*; Jonathan Franzen, "Sifting the Ashes," *The New Yorker*, 13 May 1996, pp. 40-48.

¹⁶ A. R. Hazan, H. L. Lipton, & S. A. Glantz, "Popular films do not reflect current tobacco use," *American Journal of Public Health*, 84 (no. 6, June 1994), 998-1000.

and “tough-guy” behaviour. Therefore, as tobacco use increasingly becomes marginalized in two senses -- driven out of public spaces and confined to the less fortunate social groups --, its own outlaw status will prove to be attractive, especially to the younger initiates: Risk-taking through tobacco use will be part of the product glamour. The outlaw appeal of smoking for youth will be greatly enhanced if industry were ever forced by governments to put a skull-and-crossbones motif on its packages, as is sometimes mooted.¹⁷ In addition, the iconic status of smoking provides a conscious and subconscious rationale for resistance to messages about health effects.

4. *Tobacco as a unique consumer product.* In such areas as consumer product safety, recreation, and occupational health and safety, risk communication through hazard warnings is based on the paradigm of the rational-informed (“sovereign”) consumer or worker. This paradigm assumes the desirability of individual choice and responsibility in the face of well-documented risks, even where those risks are relatively high. The proviso is that those sovereign individuals can become well-informed as to the nature and relative severity of risk factors, can exercise good judgement in the light of adequate information, and can undertake the appropriate behavioural modifications. But there is another assumption built into this paradigm as well, namely, that the risks are incidental to the product use or the activities associated with the product. In other words, in most cases a reasonable level of care and attention is sufficient to control the risks attendant upon product use or activity within generally “acceptable” bounds.

Thus whether we are considering relatively hazardous recreations such as sky-diving, skiing, or spelunking, or occupations that require handling toxic chemicals, or the domestic use of hazardous machines such as chainsaws, society’s expectation is that a judicious combination of general education, effective hazard warnings, specialized training, use of safety devices, care and attention, plus common sense – and the availability of prompt medical attention for the accidents that inevitably will occur --, can control the attendant risks satisfactorily. But not for tobacco.¹⁸

Tobacco is the great anomaly: It has been marketed as an “ordinary” consumer product throughout this century, available in every corner store and gas station, but its use does not fit within the paradigm sketched above – perhaps the only case of its type in modern history.¹⁹ This is because the risks are not incidental to product use, but are an inherent function of “normal use” (i.e., the regular pack-a-day smoker) itself. In other words, the associated risks cannot be controlled within acceptable limits, given normal use patterns, no matter what ostensible risk control strategies are employed by the consumer (smoking “light” cigarettes or whatever).

Due to the anomalous nature of tobacco as a consumer product, none of the normal risk communication strategies is applicable. This includes the mandating of hazard warnings by governments on tobacco packages: Since their only real effect is to help to shield the manufacturers from liability for marketing inherently unsafe products, this practice should be

¹⁷ “Smoke labels getting deadly,” *The Ottawa Citizen*, 8 July 1998, p. A1, citing Health Canada officials who are ostensibly considering this option.

¹⁸ H. Leventhal *et al.*, “Is the smoking decision an ‘informed choice’?” *Journal of the American Medical Association*, 257 (no. 24, 26 June 1987), 3373-6.

¹⁹ Products are routinely removed from market circulation, usually voluntarily by manufacturers, when new risk assessments indicate unacceptable levels of consumer risk. Alcohol does not fit this description, since there does appear to be reliable evidence to the effect that moderate use confers a health benefit, and its use is otherwise controlled to limit (but not eliminate) the health damage that is attributable to abuse of the product. The rational basis for the controls on other addictive substances presumably is that individuals cannot exert sufficient personal control over their use to avoid unacceptable levels of health damage (but see further below, where I argue that this objective can never justify criminalization for adult users).

stopped forthwith.²⁰ The tobacco manufacturers should be forced to decide for themselves how the buyers of their products should be notified of the risks associated with them, based on the accumulation of credible scientific evidence.²¹ Society should discharge its own duties to its citizens by disseminating tobacco risk information through the medical community and the educational system.²²

5. *Discounting of tobacco risk messages.* One of the most interesting research results reported in recent years was a study that shows how smokers' risk awareness is effectively cancelled out by what is called "self-exempting beliefs."²³ These beliefs amount to artfully-constructed rationales as to why the acknowledged risk factors, which are of course based on population averages, are offset (in the individual smoker's mind) by the particular circumstances of that individual's behaviour with respect to tobacco use. This important study undermines one of the ostensibly strongest arguments made by the tobacco industry, namely that its customers are fully aware of the health risks of smoking (these arguments are made on alternate days, alternating with statements calling into question the scientific basis of the risk assessments for tobacco use). It also calls into question the usefulness of the survey research results, some of which were referred to earlier, in which smokers report their desire to quit and their gratitude for the health risk information they receive from government-mandated hazard warnings. These beliefs represent deeply-entrenched lines of resistance among tobacco users against the message content of risk communication campaigns.

6. *Tobacco use as a drug dependency issue.* Anyone who has suffered through the calm mendacity of presentations by tobacco industry representatives appearing before legislative committees is bound to find the 1963 statement (made in private, of course) by Brown and Williamson's legal counsel refreshing: "We are, then, in the business of selling nicotine, an addictive drug effective in the release of stress mechanisms."²⁴ Society's continued tolerance of the virtually unrestricted marketing in massive quantities of a substance with powerfully addictive properties is the ultimate proof of tobacco's iconic status. The Government of

²⁰ In Canada the legal basis for the hazard warnings is still under constitutional challenge. It would be entertaining if, for once, the federal government would surprise the expensive legal talent brought against it by the tobacco industry with a novel strategy.

²¹ Survey data in Canada demonstrates that about half of the population of smokers cite the package hazard warnings as raising their risk awareness; however, only one-fifth say that those messages were a factor in their attempts to quit or to smoke less: Tandemar Research Inc., "Cigarette packaging study: The evaluation of new health warning messages," a report prepared for Health Canada (March 1996). Smokers also say that they are mostly in favour of getting more risk information on packages, specifically, lists of toxic ingredients; however, honesty prevails here, because most of the same respondents also "said that they would not be influenced in their smoking behaviour by a list of toxic ingredients,..." Envirionics Research Group, "Public attitudes toward toxic constituent labelling on cigarette packages," a report for Health Canada (June, 1996).

²² This would have the added benefit of moderating somewhat the awkwardness inherent in the fact that all governments absorb huge tobacco tax collections into their general revenue streams.

²³ S. Chapman *et al.*, "Self-exempting beliefs about smoking and health: Differences between smokers and ex-smokers," *American Journal of Public Health*, 83 (no. 2, February 1993), 215-9.

²⁴ Cited as the epigraph to Chapter 3, "Addiction and Cigarettes as Nicotine Delivery Devices," in Stanton A. Glantz *et al.*, *The Cigarette Papers* (Berkeley, CA: University of California Press, 1996), p. 58; cf. Richard Kluger, *Ashes to Ashes* (New York: Alfred A. Knopf, 1996), ch. 20. There is new documentation on this point released as a part of the lawsuit filed against the industry by the State of Minnesota and available on the Internet, at www.mnbluecrosstobacco.com, under "trial news." For an overview of the Minnesota documents relating to addiction see R. D. Hurt and C. R. Robertson, "Prying open the door to the tobacco industry's secrets about nicotine: The Minnesota tobacco trial," *JAMA*, 280 (no. 13, October 7, 1998), 1173-81.

Canada, for instance, has been essentially paralyzed for the past decade because it insists on fighting the tobacco industry on the territory of that industry's own choosing – namely, the absurd presumption that tobacco is an ordinary, “legal” consumer product to which the normal rules of economic intercourse apply. Apparently to avoid the charge that it is *permitting* the provisioning of a hazardous substance (which of course it does by default), the government declines to use its authority over health protection to regulate nicotine as a drug.²⁵ For the same reasons Canadian provincial governments pussy-foot around the matter of tobacco retailing, not wishing to offend the legions of small businesses for whom this is highly profitable.²⁶ But all of this elaborate political fan-dancing extracts its price: Why should any of the committed users take their governments' dire health hazard warnings seriously, when this drug product, whose health toll is unlike any other by many orders of magnitude, is so freely available, compared with others of comparable potency – whose toll from abuse pales into comparative insignificance -- that have been outlawed?²⁷

7. *Mixed messages in the “war on drugs.”* The absurd and self-defeating criminalization of certain types of addictive substances extracts a huge price in the tacit downplaying of tobacco risk.²⁸ It also inserts massive confusion into government's ostensible role in health protection, because there cannot possibly be a rational defense for the profound anomalies that exist in the relationship between comparative health consequences, on the one hand, and the set of social and legal controls, on the other, across the whole set of potentially addictive substances. This is especially relevant to the marginalized sub-population of young people who are most likely to take up smoking at an early age, for we now realize that this is part of a behavioural pattern that includes early initiation of (unsafe) sexual activity and the use of numerous other dangerous substances. So again, the stark difference between tobacco and all other substances (including alcohol) is impressed upon its users by the forces of law every day of the week. Something so easily tolerated by society cannot be *that* bad.

Overcoming the obstacles to risk communication for tobacco

In many of the industrialized countries today smoking prevalence has stabilized at varying percentages of the overall population; in other countries smoking rates are rising, sometimes at a rapid pace. In both cases, but for somewhat dissimilar reasons, there are powerful currents of resistance to risk messages about tobacco use. Due to accidents of history tobacco has achieved an iconic status which serves it as a protective shield against which the rational content of risk communication messages are relatively powerless. For an analogous case which has equally disastrous health consequences one thinks of the AIDS epidemic in Africa,

²⁵ This reticence sometimes appears to be based on the notion that there is some “moral hazard” in licensing the delivery of a drug that has no therapeutic benefits, but this is simply a canard, because of course tobacco provides through its nicotine content abundant therapeutic benefits for its committed users – as the tobacco industry was the first to discover (see *The Cigarette Papers*, ch. 3).

²⁶ Every “sting” operation designed to test the efficacy of the age restrictions on tobacco purchases has shown that consumers under the legal age can supply themselves with what they want quite nicely.

²⁷ The contrast with control over the use of alcoholic beverages is especially instructive: In Canada it is an offense to consume such beverages outside of a residence or a licensed establishment, but one can by contrast walk about freely with a lit cigarette, of course. Moreover, whereas mere possession of alcohol by a minor is an offense, it is not so with tobacco, where only the act of purchase is regulated, although there are new laws imposing fines for possession in the U. S. (“States and cities impose new laws on young smokers,” *The New York Times*, 7 December 1997, p. A1.)

²⁸ I have argued elsewhere that the indefensible incommensurability between society's attitudes towards tobacco on the one hand, and the now-criminalized drugs on the other, robs government of the moral authority and clarity of purpose necessary to achieve its health protection objectives where adult use of the whole set of addictive substances is concerned: “The Censorship of Commercial Speech, with special reference to tobacco product advertising,” in *Censorship in Canada Today*, ed. Klaus Petersen (Toronto: University of Toronto Press, forthcoming 1998).

reasonably suspected, to base their demands in risk terms. In any case, within many regions in North America there is a firm social consensus around the main objective – proscription of smoking in public spaces --, with some disagreement at the margins (restaurants and bars, etc.), and greater uncertainty still as to how far to push the agenda with respect to more problematic spaces, particularly outdoors. This is the primary way in which the nonsmoking majority, using both government and private resources, communicates its understanding of unacceptable risk.

ETS and child health: Delivering the message

In North America and perhaps in some Western European nations smoking prevalence among adults has shown little change in the past decade and among youths, on the other hand, there has been a dramatic and sustained rise. In those countries tobacco use is now highly concentrated (but not exclusively located) in a segment of the population that is lower-status and relatively disadvantaged -- socially, economically, and psychologically. Among youth these factors reflect also both a general attitude of rebelliousness against an ascending social norm of antismoking, as well as a behavioural syndrome in which tobacco use is correlated with early sexual experience and experimentation with a wide variety of other psychoactive substances, licit and illicit.

For reasons adduced earlier these users, both adult and adolescent, are highly resistant to risk messages from governments cast in rational-information formats, so much so that there is (or ought to be) considerable doubt about the wisdom of expending scarce public-health dollars on such campaigns. Nor are other initiatives which governments could take that would be directed at the user population, such as requiring radical changes to tobacco product packaging, likely to have any effect whatsoever on patterns of behaviour among those who are determined to smoke.³⁷ As indicated earlier, some such changes (such as requiring the skull-and-crossbones motif) are more likely to increase the allure of smoking for teenagers.

The preceding analysis suggests that a country which wishes to “get the message across” that children’s exposure to ETS ought to be reduced would be well advised to concentrate its public-health resources on evicting smoking from public spaces.³⁸ This is no less a risk communication objective than is the designing and disseminating of media-based propaganda campaigns, and the experience in North America shows, I believe, that it can be done. It is, however, a very different *type* of risk communication, namely, one that depends for success on the mobilization of social élites, ideally under the leadership of the professional medical community. It is, perhaps, an indirect form of communication, in the sense that it does not target directly those smokers whose behaviour is the source of the problem at hand; rather, it targets those already committed to a nonsmoking lifestyle in their “private spaces” and seeks to galvanize their support for making nonsmoking the social norm in public spaces as well.³⁹

³⁷ With one exception, namely the reluctance so far of most public-health campaigners to use visual illustrations of tobacco-induced disease, a striking failure in societies where image-based communications is now the norm. (Earlier this year the Federal Health Minister in Australia authorized the use of a graphic illustration of a blood clot in the brain in an antismoking television ad: *Canberra Times*, 23 April 1998.) But such illustrations are unlikely ever to appear on product packaging.

³⁸ This recommendation has the disadvantage of seeming to spread a North American model of change around the world. But at least it is a model with demonstrated success, and any who might object to the overtones of cultural imperialism are challenged to produce a viable alternative.

³⁹ Admittedly there are cultural differences that are relevant to this approach, especially the fact that there is in some countries (in southern Europe, for example) a higher level of social interaction in public spaces. Thus some fine-tuning in the application of this approach to particular circumstances will be necessary. However, no matter how pertinent such cultural differences may be, in my opinion

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Only after substantial victories have been achieved in the public sphere is it feasible to think of turning attention to private domestic spaces, where there are obviously significant exposures for children and other nonsmokers to ETS in smoking households. Here too it is a waste of time and resources, in my opinion, to target directly – through media-based government propaganda campaigns -- the smokers who are and must be in a state of denial about the adverse health effects of smoking, both for themselves and their children, whatever their self-reported awareness levels of risk factors are.⁴⁰ A more indirect approach is preferable in this case as well, again with the lead involvement of the professional medical and educational communities. Visits to doctors and clinics for medical care at the time of pregnancy and early childhood in families provide one good opportunity for risk communication discussions framed broadly in terms of multiple risk factors, including ETS. Certainly school-based risk communication programs for youth about tobacco use can include issues of ETS in the home. Finally, the issue of ETS in the home – certainly in North America – should be wrapped into the larger matter of indoor air quality generally, which is gaining increasing attention as a generic health risk factor, especially for children; this too has the advantage of sidestepping a direct challenge to domestic smoking behaviour in isolation. Using these and other avenues the messages about ETS and child health gradually will reach many in the target audience.⁴¹

there is no other approach in general that is likely to produce the first level of significant reductions in children's exposure to ETS.

⁴⁰ Most if not all societies grant broad parental discretion in child-raising, limited chiefly by protections (where they exist) against physical and sexual abuse and severe neglect. Exposure of children to ETS by parents is unlikely to be regarded as an actionable form of abuse – except in the United States, where one would not be surprised to see lawsuits against parents by their children.

⁴¹ The author acknowledges the very useful and extensive comments made by a peer reviewer on an earlier draft of this paper, along with additional references, which were taken into account in the revisions.

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Appendix

Evaluation of Intervention Strategies related to ETS and Child Health: Implications for “applied” Risk Communication

The general conclusion from the foregoing analysis is that tobacco use, considered as an attitudinal and behavioural phenomenon, is fundamentally different from every other form of risk-taking activity in modern society. What follows from this perspective is the presumption that “applied” behavioural change intervention strategies -- including risk communication campaigns of every sort -- that have been developed for other types of health and environmental risks, including exposure to industrial chemicals and the use of seat belts in automobiles, as well as literally dozens of other such situations, are inapplicable to the case of tobacco use. The correctness of this presumption is borne out in the published evaluations and meta-analyses of the many unsuccessful experiments with intervention strategies designed to change smoking behaviour.

An up-to-date, exhaustive review of both published literature and written reports on risk communication and intervention strategies for tobacco use among youth was completed in Canada this year, and its conclusions confirm the correctness of the general diagnosis on obstacles to tobacco risk communication contained in the main body of this paper. For example, this study summarizes the results of five meta-analyses, published in the period 1992-97, that encompassed individual studies on school-based programs designed to communicate health risks associated either with tobacco alone or with the “nexus” of tobacco, alcohol, and other drugs. There were no fewer than 428 individual studies included in the five meta-analyses; the author’s general summary of their findings is stated as follows:⁴²

The magnitude of the positive effects of these programs is believed to translate into approximately a 5% reduction in smoking. Further, these effects have been found to endure for only one or two years post-intervention.

However, in addition to school-based communication approaches, the paper’s author considers also mass media approaches and health warning labels, and these three are taken as the dominant types of sources of health risk information for youth. Taking all three together, and summarizing the overall tenor of a huge number of intervention strategies in applied risk communication, she concludes: “For the most part, efforts by the health sector to prevent or reduce risk behaviours among youth, such as smoking, alcohol, and other drug use, have been unsuccessful.”⁴³

Turning now specifically to ETS specifically, two of Canada’s leading authorities on tobacco use behaviour have noted the absence of evaluation data on the programs in which considerable, and growing, public resources are being invested: “Very few public education resources regarding ETS exposure appear to have undergone formal evaluation with regard to effectiveness in raising public awareness. We are not aware of any published evaluations of material used in Canada.”⁴⁴ They also note that, in Canada at least, with respect to implementing smoking restrictions, there is noticeably lower public support for imposing

⁴² A. Paglia, “Tobacco Risk Communication Strategy for Youth: A Literature Review,” prepared for Health Canada, January 1998, p. 11 (my italics WL).

⁴³ *Ibid.*, p. 28.

⁴⁴ M. J. Ashley & R. Ferrence, “Environmental Tobacco Smoke in Home Environments,” Ontario Tobacco Research Unit, “Special Reports: Environmental Tobacco Smoke,” Toronto, April 1996.

such restrictions in the home as opposed to both workplaces and public spaces.⁴⁵ The primary reason for the difference was indicated in the results of a small pilot study:

*Findings indicated that relatively high levels of participant awareness about health risks associated with ETS did not translate into the creation of “smoke-free” home environments, although many participants did report various restrictions on smoking in the home. In this study, participants’ concern for the risk of their children’s health appeared to have been offset by their view that smoking is an individual choice exercised in a private domain.*⁴⁶

So far as ETS and child health is concerned, there are a number of specific studies on educational programs, clinical interventions, and other strategies employed in an effort to change smokers’ behaviour and thus children’s exposure. A fair sample of the studies is summarized below.⁴⁷

1. P. Vineis *et al.*, “Prevention of exposure of young children to parental tobacco smoke: Effectiveness of an educational program,” *Tumori*, 79: 183-6, 1993. “The intervention itself had limited effectiveness in decreasing the number of smokers.”
2. M. F. Hovell *et al.*, “Reduction of environmental tobacco smoke exposure among asthmatic children: A controlled trial,” *Chest*, 106: 440-6, 1994. “This randomized clinical trial tested a behavioral medicine program designed to reduce asthmatic children’s exposure to ETS in the home. Families were randomly assigned to an experimental preventative medicine counseling group, a monitoring control group, or a usual treatment group.... Exposure to parents’ cigarettes in the home decreased for all groups. The experimental group attained a 79 percent decrease in children’s ETS exposure, compared with 42 percent for the monitoring control and 34 percent for the usual treatment group.” *WL comment*: This result justifies others in looking at the specific program utilized in the trial. It should be noted that the study was done in California, which has the lowest smoking rates in North America (and thus arguably in the world), and was done among families with asthmatic children.
3. N. A. McIntosh *et al.*, “Reducing tobacco smoke in the environment of the child with asthma: A cotinine-assisted, minimal-contact intervention,” *Journal of Asthma*, 31(6): 453-62, 1994. “More treatment (35%) than control (17%) subjects reported smoking outside their homes at posttest (and their children’s cotinine levels were lower), but this difference was not statistically significant.”
4. J. S. Kendrick *et al.*, “Integrating smoking cessation into routine public prenatal care: The Smoking Cessation in Pregnancy project,” *Am. J. Public Health*, 85(2): 217-22, 1995. “Results. At the eighth month of pregnancy, self-reported quitting was higher for intervention clinics than control clinics in all three states. However, the cotinine-verified quit rates were not significantly different.”
5. W. Eriksen *et al.*, “Effects of information on smoking behaviour in families with preschool children,” *Acta Paediatrica*, 85: 209-12, 1996. “We found no significant

⁴⁵ *Ibid.*, p. 32.

⁴⁶ *Ibid.*, p. 38. The pilot study is #7 in the list that follows.

⁴⁷ This list constitutes all of the relevant studies found in the “Abstracts on Tobacco” – a comprehensive bibliography of smoking related literature – published by the Ontario Tobacco Research Unit in the years 1994-present.

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Second, some competent agency or group of agencies should commission a thorough and in-depth examination of the hundreds of intervention programs reported to date, and seek to extract as much guidance as possible – from past failures – which can be applied to future experiments, in particular for reducing passive smoking exposures in children. So far as I can tell, this has not been done (except in the five separate meta-analyses referred to earlier). With this guidance in hand, and mindful of the substantial obstacles to successful risk communication regarding tobacco use detailed earlier, public health practitioners would be in a far better position than they are now to achieve reductions in children’s ETS exposures.

Conclusion

Tobacco use and ETS issues present a significant challenge to conventional notions of risk communication, which were originally formulated in the late 1980s in the context of involuntary public exposures to chemicals, nuclear power, hazardous waste facilities, and similar technologies. Conventional wisdom on this subject encourages us to concentrate on risk message design and delivery parameters, such as source credibility and empathy, in order to maximize persuasive effectiveness and the elicitation of trust and believability. However, none of the elements in this conventional wisdom is applicable to the case at hand, because rational-information risk message campaigns are unable to break through the social, educational, attitudinal, psychological and other barriers that exist in the lives of the smoking sub-populations today.

If the tobacco case teaches us one thing about communication, it is that we must broaden considerably our notion of what constitutes effective risk communication practice. Communication is not just about messages and their delivery; rather, society communicates its changing conceptions of acceptable behaviour in many different ways, of which rational-format messages are perhaps the least important. Recognizing the truth of this proposition is essential for directing social resources for risk reduction towards areas of wise investment and away from unprofitable ones.

Following Zimring, I argue that all the victories that have been won so far in North America on ETS have occurred because social élites have been mobilized to drive smoking out of public spaces, one after the other. These campaigns do not address smokers directly; rather, they are demands by the nonsmoking majority to the effect that conditions in the public sphere should mirror the decisions that the majority have made in their private lives. The experience to date confirms that this is a highly successful way to reduce exposure to ETS for everyone, including children.

