A History of the Knowledge—and Ignorance—of Harms from Cigarettes in Canada, 1950-2000

Expert Report submitted by

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for *Letourneau vs. Imperial Tobacco Canada Ltd., et al*. and

Conseil Québécois sur le Tabac et la Santé vs. JTI-Macdonald Corp. et al.

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Introduction

I am Robert N. Proctor, Professor of the History of Science at Stanford University in Stanford, California. I received my BS degree in Biology in 1976 from Indiana University in Bloomington, following which I obtained my Masters of Science and doctorate from Harvard University in the History of Science. I have published extensively on the history of cancer, tobacco, and the health harms caused by tobacco use, including books such as *Cancer Wars: How Politics Shapes What We Know and Don't Know about Cancer* (Basic Books, 1995); *The Nazi War on Cancer* (Princeton University Press, 1999); *Agnotology: The Making and Unmaking of Ignorance* (Stanford University Press, 2008); and *Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition* (University of California Press, 2011). I have also published extensively on the history of the growth of knowledge of tobacco-cancer links in peer-reviewed journals, including *Lancet*, the *British Medical Journal*, *Tobacco Control*, the *American Journal of Public Health*, the *Bulletin of the World Health Organization*, *Clinical Lung Cancer*, *Nature Reviews Cancer* (in the *Nature* group of journals); and the *Bulletin of the History of Medicine*. I have also testified on behalf of plaintiffs in a number of trials against the U.S. tobacco industry, including *USA v. Philip Morris*, for which I submitted an expert report (in 2004, see Appendix III). My scholarly works have been translated into several foreign languages (French, German, Italian, Polish, Turkish, Czech, and Japanese, for example), and I have lectured and published before medical societies in many different parts of the world.

I have also won a number of honors and awards for my scholarly work, including grants and/or fellowships from the National Institutes of Health, the National Science Foundation, the Andrew Mellon Foundation, the National Center for Human Genome Research, the National Library of Medicine, the National Endowment for the Humanities, the Howard Foundation, the Wilson Foundation, the Rockefeller Foundation, the John Simon Guggenheim Memorial Foundation, the Hamburger Institut für Sozialforschung, the Shelby Cullom Davis Center for Historical Studies at Princeton, the U.S. Holocaust Memorial Museum in Washington, D.C., and the Center for Advanced Study in the Behavioral Sciences at Stanford. In 1999 I won the Arthur Viseltear Prize from the American Public Health Association for my work on the history of German cancer research, and in 2005 I won the American Anthropological Association's Prize for Outstanding Cross-Disciplinary Research for my work on human origins. In 1999-2000 I served as Fulbright Senior Fellow and Visiting Scholar at the Max-Planck-Institut für Wissenschaftsgeschichte in Berlin, and in 2002 I was named a permanent

Fellow of the American Academy of Arts and Sciences, the oldest scholarly academy in the United States (see my resumé attached as Appendix VI).

I have been asked to evaluate and comment on three expert reports submitted by historians hired by Canadian tobacco manufacturers in *Letourneau vs. Imperial Tobacco Canada Ltd., et al*. and *Conseil Québécois sur le Tabac et la Santé* vs. *JTI-Macdonald Corp. et al*. In my opinion, the reports prepared by David H. Flaherty, Robert J. Perrins, and Jacques Lacoursière contain significant errors, omissions, and methodological flaws, among them the following:

1. All three fail to consult the tobacco industry's internal documents, which reveal a decades-long conspiracy to downplay the hazards of smoking. All three ignore the tobacco industry's denialist campaign, which in the global aggregate must figure as one of the deadliest conspiracies in the history of human civilization.[1]
2. All three fail to appreciate the multiple means by which cigarette makers reassured smokers, including the marketing of gimmick cigarette designs such as king sizes, filters, lights, low tars, menthols, milds, naturals, slims, and so forth.
3. All three fail to consider the role of advertising in influencing attitudes toward tobacco hazards—including the creation of a sense of the "ordinariness" of the cigarette habit in Canadian popular culture, while also making smoking seem glamorous, adventurous, and "cool."
4. All three either ignore or downplay the fact that popular attitudes toward smoking have changed dramatically over time, with significant changes taking place from the 1950s into the 1990s, as medical knowledge penetrated popular culture.
5. All three either fail to consult, or pay insufficient attention to, the secondary historical literature detailing the tobacco industry's efforts to manipulate public opinion; all three ignore the body of critical scholarship on the testimony offered by the tobacco industry's experts in court, including efforts to claim long-standing "common knowledge" on the part of ordinary smokers.
6. All three fail to look at tobacco industry's marketing studies, which show that the kinds of people most likely to smoke were also least likely to keep up with news or current affairs, and the least likely to understand the true risks of smoking.

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[1] Cigarettes killed a hundred million people in the twentieth century, and we are currently on track to suffer a billion deaths from smoking in our present century; see Robert N. Proctor, "Tobacco and the Global Lung Cancer Epidemic," *Nature Reviews Cancer*, 1 (2001): 82-87.

7. All three tend to oversimplify what it means to know that smoking is "dangerous," ignoring differing conceptions of the severity of risk or its relevance to one's personal situation. All three ignore the fact the fact large fractions of the Canadian public hold fast to the myths that only immoderate smoking is dangerous or that certain brands are safer than others.
8. All three ignore the industry's deliberate marketing to kids.
9. All three ignore the industry's deliberate manipulation of science, as in the formation of the ETS Consultancy group or ICOSI or contracts with scholars to produce cigarette-friendly testimony and publications.
10. All three ignore the massive political power of the industry, including its power to influence peer-reviewed scientific literature, congressional and parliamentary testimony, the drafting of bills and legislation, the content of popular media, and popular attitudes toward smoking.

To provide a more accurate and balanced account, I will first give some historical background on the tobacco plant and cigarette manufacturing, including the crucial historical role of cigarette design in product deception. I will then trace the history of the discovery of tobacco hazards and the history of popular understanding (and ignorance) of cigarette hazards in Canada. I will then comment more specifically on the expert reports provided by Flaherty, Perrins and Lacoursière.

The Tobacco Plant

The tobacco plant is native to the Americas, a member of *Nicotiana* genus and the nightshade family to which eggplant and tomatoes also belong. The species most often smoked today—*Nicotiana tabacum*—is only one of about 70 different species in the *Nicotiana* genus, all of which contain varying levels of the nicotine alkaloid. Other species formerly smoked include *Nicotiana rustica*, also known as *makhorka* (in Russia) or *mapacho* (in South America).

Nicotiana tabacum is the most commonly smoked tobacco plant in the world today, but even within this species there is significant variability in the nature of the cured leaf and the chemistry of its resulting smoke. Seed breeds vary of course, but the tobacco plant can also be modified according to how and where it is cultivated. Fertilizers can dramatically affect the smoking properties (superphosphates leave radioactive polonium in the leaf and smoke, for example), and growing conditions play a crucial role (water and sun influence nicotine content). The size and shape of *N. tabacum* leaves can also be quite different: Turkish or "oriental" tobacco leaves are no more than a couple of inches in length, whereas the "bright" or Virginia tobaccos grown in Canada or the American piedmont may have leaves up to two feet long. Tobaccos grown in sunlight with reduced water will have higher levels of nicotine, as will tobaccos grown with

strong applications of high-nitrate fertilizers. There is variability even within a single plant: leaves picked from higher up on the stalk, for example, will have significantly more nicotine than leaves lower on the stalk, probably as an adaptive response to herbivory. (Nicotine is a powerful poison: a single drop on the tongue of a dog can kill it.)

Tobacco manufacturers thus have several different methods by which they can alter the chemical properties of their products. Just as important as growing conditions or leaf selection, though, is how the leaf is treated once picked. Like olives, tobacco must be "cured" prior to consumption. Different curing techniques produce dramatic differences in the chemistry of the resulting leaf and smoke—and in the psychopharmacology of the final product. The most important of these methods involves what is known as "flue curing," a technique that makes the resulting smoke milder and easier to inhale—and therefore far more deadly. This requires some further comment, as it goes to the heart of why so many Canadians die from smoking.

Flue Curing: The Fatal Flaw of Modern Cigarette Manufacturing

The modern cigarette[2] is distinguished not just by its physical size ("little cigar") or the fact it is wrapped in paper; crucial also is the fact that cigarettes produce a form of smoke that, unlike any other form of tobacco, is *inhalable*. The modern cigarette is inhalable, because the tobacco used in its manufacture is produced via a method of curing known as flue curing.

Flue curing is the process by which tobacco plants are heated soon after harvest, lowering the pH (acid-base balance) of the resulting smoke. High temperature radically alters the curing process: heating stops the enzymatic processes that would normally degrade the sugars in the tobacco leaf, resulting in the preservation of sugars in the finished leaf. Sugar is of crucial importance in tobacco chemistry. Tobaccos of the sort traditionally used in cigar or pipe tobacco manufacture are air cured—simply by drying—which reduces the sugar content in the leaf from about 25 percent (by weight) to about 2 percent. By contrast, flue

[2] The term *cigarette* has nineteenth origins, though if "little cigar" is all we mean by this, then cigarettes can be found even in pre-Columbian Mesoamerica. Mayan codices are preserved depicting gods of various sorts smoking small tubes of tobacco, which might justifiably be considered cigarettes. If, however, we mean by this term a smokable tube of tobacco wrapped in paper, then cigarettes are of more recent vintage. Spanish boys in seventeenth century Seville rolled tobacco scrap in newspaper for smoking, an early form of "cigarette" use. The modern cigarette is more often traced to the 1830s, when Egyptian cannoneers rolled tobacco into paper artillery shells and smoked them; paper-rolled tobacco was also smoked by Turkish troops in the Crimean War of 1853-56, prompting the dissemination of this new form of tobacco use into Western Europe and thence back into the Americas.

cured tobacco retains its high levels of sugar, an important determinant for the chemistry and physical properties of the resulting smoke. Why is sugar so consequential for tobacco chemistry and human disease?

Sugars are important, because when you burn sugars you produce organic acids (malic, citric, etc.) Acids in the resulting smoke neutralize the alkaline nicotine molecule, causing the resulting smoke to be much less harsh. The contrast with pipe and cigar tobaccos is key: alkaline smoke of the sort generated by pipe tobacco and cigars is not inhalable, the smoke is just too harsh. Smokers of cigars therefore generally-speaking do not inhale—which is why they rarely get lung cancer. Smoke from tobacco that has been flue cured, however, is much less alkaline, with a pH typically around 6.5 or 6.0. This produces a smoke that is milder, more neutral, and therefore easier to inhale—and cause cancer.

Most cigarette manufacturing in Canada and elsewhere uses flue cured tobacco, also known as "bright" or "Virginia" leaf.[3] This is worth noting, because flue curing is the single most important manufacturing process responsible for the global lung cancer epidemic. Most of the tobacco smoked prior to the twentieth century used not flue cured but rather air cured tobacco, which when burned produced a non-inhalable smoke. It is really first with the invention of flue curing (in the nineteenth century) that tobacco smoke becomes deadly to the lungs. Which is also why we find so little lung cancer prior to the twentieth century: very few people were inhaling tobacco smoke, it was just too harsh. Lung cancer was in fact an extremely rare disease; only 140 cases are known in the published scientific literature prior to the twentieth century. Isaac Adler in his 1912 textbook on *Pulmonary Malignant Growths of the Lung*—the first such textbook—called it "the rarest form of disease"; by contrast, some 18,000 Canadians now die annually from the malady. The lung cancer epidemic is almost entirely due to the rise of the modern flue-cured cigarette, with its "mild," low-pH, inhalable smoke. The tobacco industry likes to claim that cigarettes are "inherently unsafe," when the reality is that much of this danger—and suffering and death—is the consequence of (eminently reversible) decisions taken in the realm of cigarette design and manufacture.

The Scientific Discovery of Tobacco Hazards

A common assumption made by experts employed by tobacco manufacturers and their legal agents is that people have long known about the hazards of tobacco;

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[3] Burley leaf dominated Canadian tobacco production into the 1930s. Fashions shifted over to cigarettes, however, and by 1950 Canadians were growing over a hundred million pounds of flue cured leaf on 87,000 acres just in Ontario; see Lyal Tait, *Tobacco in Canada* (Toronto: T. H. Best, 1968), pp. 63-72, Bates TCA37179-7411. Production of flue cured would grow to over 200 million pounds per year by the mid 1960s.

tobacco hazards are presumed to be "common knowledge."[4] This undifferentiated (for whom was knowledge common?) and ultimately ahistorical assumption fails to consider: a) the historical recency of the cigarette habit, and therefore recency of certain diseases caused by smoking; b) the fact that people may be aware of cigarettes being "dangerous" in the abstract, without having specific knowledge of how severe or immediate or personal that danger may be; c) crucial differences between expert and "lay" opinions concerning hazards (notably scientists vs. ordinary smokers); and d) the influence of the tobacco industry in shaping popular attitudes toward smoking.

What can we say about the history of the discovery of tobacco hazards? How were these harms discovered, and how did this knowledge come to be recognized in the general population?

Anecdotal evidence of harms from tobacco use dates back several centuries. King James I (1566-1625) is often cited for his lamentation of smoking as "loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black, stinking fume thereof, nearest resembling the horrible Stygian smoke of the pit that is bottomless," and numerous other tirades against "the Queen's herb" can be found in subsequent years. Nicotiana is denigrated as dirty, smelly, or likely to stunt one's growth or lead one (especially women) into vice. Tobacco was sometimes said to produce a "dry drunkenness" leading to immoral behavior, though European physicians in the 18th century also described several cases of cancers of the lips and tongue from pipe smoking—and one instance of "nasal polyps" from snuff. Mouth and throat cancers were occasionally observed in the nineteenth century, and in a few instances such ailments were publicized and attributed to tobacco use (cigars and pipes, not cigarettes).

It would be wrong to imagine, however, that knowledge of deadly harms was widespread or "universal" prior to the second half of the twentieth century—even among physicians and medical scholars. Tobacco was commonly used as a medicine—the plant was prescribed for many different kinds of ailments and was listed in the official pharmacopoeia of many nations. Romantics waxed poetic over the virtues of the "Queen's herb"—there are countless paeans to smoke—and tobacco was used to treat ailments ranging from asthma and constipation to eye and ear infections. In England in the 17th century, smoking was prescribed as a curative against the plague. Tobacco was in fact for many years known to

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[4] For the origins and myopia of the "common knowledge" defense deployed by tobacco industry historians see Louis Kyriakoudes, "Historians' Testimony on 'Common Knowledge' of the Risks of Tobacco Use: A Review and Analysis of Experts Testifying on Behalf of Cigarette Manufacturers in Civil Litigation," *Tobacco Control*, 15 (2006): iv107-16; also Robert N. Proctor, "'Everyone Knew But No One Had Proof': Tobacco Industry Use of Medical History Expertise in US Courts, 1990-2002," *Tobacco Control*, 15 (2006): iv117-25.

physicians as "the panacea,"[5] to which marvelous medical virtues were ascribed. Tobacco was sometimes blamed for diseases such as tuberculosis (phthisis) but was just as often used to cure or ward off infections.

Historians sometimes note that the past is something like a foreign country, and from our present-day vantage point it is certainly easy to forget how recently smoking was an unobjectionable part of everyday life. Smoking as recently as the 1960s and '70s was ubiquitous on airplanes, in restaurants and in movie theaters, in courtrooms and on elevators. Doctors and nurses smoked during medical exams and children made ashtrays in schools. (I was born in 1954, and I myself recall professors smoking in the classrooms at Harvard in the late 1970s.) For the first six or seven decades of the twentieth century tobacco was a respectable commodity, and smoking was a dignified habit. Etiquette guides as late as the 1970s recommended that the polite hostess offer cigars to the men and cigarettes to the women. And it was not at all unusual for physicians to smoke. In 1960, according to a survey conducted for the American Cancer Society, *nearly half* of all physicians in the United States (49 percent) were regular smokers of cigarettes. And only about a third of all doctors were convinced that cigarettes could cause lung cancer. One in ten reported actually having advised their patients to smoke.[6]

Rigorous scientific demonstration of tobacco-disease links on a large scale does not come until the middle decades of the twentieth century. The turning point for the Anglo-American world is the 1950s, with the confluence of four new types of scientific evidence:

1. **Epidemiological studies** showed that smokers were far more likely to contract lung cancer than nonsmokers. Studies performed by medically-trained statisticians showed a clear "dose response" —more smoking, more cancer—and heavy smokers were found to be over forty times as likely to contract lung cancer as non-smokers.[7]
2. **Animal experiments** showed that tobacco tars (condensed smoke) smeared on the backs of experimental animals could produce tumors. Studies of this sort date from earlier in the century, and the industry conducted its own (secret) unpublished experiments, but Wynder and

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[5] For examples of the medicinal use of tobacco, see Paul S. Larson, Harvey B. Haag, and H. Silvette, *Tobacco: Experimental and Clinical Studies: A Comprehensive Account of the World Literature* (Baltimore: Williams and Wilkins, 1961).

[6] "Many Doctors Link Smoking and Cancer," *Washington Daily News*, Oct. 26, 1960, Bates 1003543302-3654 at 3338.

[7] A good early review of the epidemiology is Jerome Cornfield et al., "Smoking and Lung Cancer: Recent Evidence and a Discussion of Some Questions," *Journal of the National Cancer Institute*, 22 (1959), 173-203.

Graham's studies published in 1953[8] were widely reported and quickly replicated.

3. **Studies of human lungs at autopsy** showed that smokers were far more likely to have precancerous lesions than nonsmokers; smoke was shown to deaden the cleansing, whip-like "cilia" cells in the lungs that normally waft soot out of bronchial passageways. Cancers were also shown to arise at bronchial bifurcations, precisely where smoke from cigarettes was allowing inhaled tar to accumulate.[9]
4. **Chemists** both inside and outside the tobacco industry showed that cigarette smoke contains known carcinogens—notably polycyclic aromatic hydrocarbons (PAHs) such as benzpyrene and methyl-cholanthrene but also arsenic and phenols and eventually (in the 1960s) the radioactive isotope polonium-210.[10]

To this should be added the fact that there was little or no evidence implicating the other leading candidates proposed to explain the lung cancer epidemic: air pollution, automobile exhaust, dust from newly tarred roads, lingering effects from the 1919 flu pandemic, or exposure to poisonous gases during the First World War.

Evidence from such widely divergent research traditions—all pointing in the same direction—prompted the emergence of a consensus within the scientific community. The American Cancer Society in 1954 proclaimed "without dissent" that smoking was associated with lung and other forms of cancer, emphasizing that there should be "no question of the facts." Distinguished research leaders from the

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[8] Ernst L. Wynder, Evarts A. Graham and Adele B. Croninger, "Experimental Production of Carcinoma with Cigarette Tar," *Cancer Research*, 13 (1953): 855-66; and for its impact: Richard Kluger, *Ashes to Ashes*: *America's Hundred-Year Cigarette War, the Public Health, and the Unabashed Triumph of Philip Morris* (New York: Knopf, 1996), pp. 162-66, and Stanton Glantz et al., *The Cigarette Papers* (Berkeley: University of California Press, 1996), pp. 33-35.

[9] A. C. Hilding, "On Cigarette Smoking, Bronchial Carcinoma and Ciliary Action," *New England Journal of Medicine*, 254 (1956): 1155-60; Oscar Auerbach et al., "The Anatomical Approach to the Study of Smoking and Bronchogenic Carcinoma," *Cancer*, 9 (1956): 8376-83; also his "Changes in Bronchial Epithelium in Relation to Cigarette Smoking and in Relation to Lung Cancer," *New England Journal of Medicine*, 265 (1961): 254-67.

[10] Claude E. Teague, Jr. "Survey of Cancer Research, with Emphasis upon Possible Carcinogens from Tobacco," Feb. 2, 1953, Bates 504184895-4923; "Report of Progress – Technical Research Department" (B&W), Dec. 24, 1952, Bates 6502000084-0095, p. 8. Canadians were among the first to publicize the presence of radioactive isotopes in cigarette smoke, based on studies by Everett Cogbill and Marcus Hobbs of Duke University. Canadian tobacco manufactures disputed the claims of Dr. Arthur Edward Michael Ash in this regard, as did Hobbs himself; see Walter Pincus, "Radioactive Leaf Report Disputed," *Durham Morning Herald*, Nov. 26, 1959, Bates 1003543494-3536 at 3530.

Memorial Cancer Center and Sloan Kettering Institute in Manhattan agreed, with *Time* magazine characterizing the cancer link as now "Beyond Any Doubt."[11] Endorsements emerged from public health bodies throughout the world, including medical societies from Norway, Sweden, Finland, Denmark, and the Netherlands, along with Britain's Medical Research Council. The Canadian Medical Association embraced the consensus in 1961, commenting that "the weight of evidence at present implicates cigaret smoking as the principal causative factor in the increased incidence of lung cancer."[12] Norman Delarue, a distinguished thoracic surgeon at Toronto General Hospital, reviewed the evidence that same year in the *Canadian Medical Association Journal*, concluding that the relationship between cigarette smoking and lung cancer was "inescapable" given the massive epidemiological evidence of both a retrospective and prospective nature, and the other sources of evidence. Delarue endorsed the opinion of distinguished scholars from the National Cancer Institute, the National Heart Institute, the American Cancer Society, and the American Heart Association that the sum total of evidence established "beyond reasonable doubt" that cigarette smoking was "a causative factor in the rapidly increasing incidence" of cancer of the lung.[13] This was a momentous scientific discovery; indeed it would be hard to name a more important discovery in the entire history of medicine.

Also crucial to appreciate, though, is that this was *new knowledge*, a discovery for which several key scholars were showered with awards. Richard Doll and A. Bradford Hill in England were both knighted for their tobacco epidemiology; Ernst Graham and Ernst Wynder in the U.S. were also honored for their experimental work, as were many others. It would be wrong, in other words, to claim that knowledge of this link between smoking and fatal disease was widespread prior to the 1950s; it was not.

Prior to the 1950s, in fact, it is common to hear distinguished physicians dismissing smoking as a cause of cancer, or even denying the reality of the

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[11] "Beyond Any Doubt," *Time*, Nov. 30, 1953, pp. 60-63.

[12] The Canadian Medical Association announced their endorsement of a causal link on June 20, 1961; see Fred Poland, "Cigarets Linked to Lung Cancer by CMA Council," *Montreal Star*, June 21, 1961. Health Minister Judy La Marsh quit smoking shortly thereafter (in 1963, after smoking two or three packs a day for twenty years) and announced the government's sponsorship of a conference of provincial health ministers and representatives from health agencies and the tobacco industry in the Fall of that year to examine the impact of smoking on health. LaMarsh also informed the Canadian House of Commons: "There is scientific evidence that cigarette smoking is a contributory cause of lung cancer"; see Kenneth M. Friedman, *Public Policy and the Smoking-Health Controversy* (Lexington: D. C. Heath, 1975).

[13] Norman C. Delarue, "A Review of Some Important Problems Concerning lung Cancer," *CMAJ*, 24 (1961): 1374-85; compare also Frank M. Strong et al., "Smoking and Health: Joint Report of Study Group on Smoking and Health," *Science*, 125 (1957): 1129-33.

disease's increase. William Boyd, a much-decorated pathologist at the University of Toronto, in his 1940 book *Diseases of the Respiratory System*, questioned even the increase in tumors of the lung: "My own feeling is that this increase is apparent rather than real." And cigarettes were certainly not to blame (his Wikipedia entry shows a photograph of him from 1949 holding a lit cigarette.)[14] It was perfectly respectable—indeed mainstream—for a prestigious scholar of medicine to question whether smoking was a cause of cancer. In 1942 and 1943, two articles were published on cancer causation in the *Journal of the American Medical Association*, neither of which even mentioned tobacco or cigarettes.[15] Indeed in 1949, the editor of *JAMA* summed up the opinion of many physicians when he commented that tobacco "may cause little change in the total longevity of large groups."[16] Two years previously, in 1947, an article appeared in this same journal concluding that smoking was fine even for cardiac patients:

> It has been our experience, over a period of years, that most patients with a cardiac disorder, including those with disease of the coronary arteries, can smoke moderately without apparent harm. In fact, for many smoking not only affords pleasure but aids in promoting emotional stability.[17]

Psychiatrists questioned whether it was ok to smoke during examination of a patient, and at least one in print pondered (in 1951) "Why not?"[18] As late as 1958, distinguished cancer officials in Canada were reluctant to use the word "causation" to describe the cigarette cancer link. The National Cancer Institute of Canada in two reports that year concluded only that cigarette smokers had a greater risk of dying from lung cancer than non-smokers, avoiding the language of "causation."[19]

After the 1950s, by contrast, and especially after the Royal College of Physicians' report of 1962 and the U.S. Surgeon General's report of 1964,[20] it was difficult to remain an honest denier of causation. There remained of course some vocal skeptics—stragglers one might say, and almost all in the pay of the tobacco

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[14] http://en.wikipedia.org/wiki/William_Boyd_%28pathologist%29, accessed Aug. 1, 2011.

[15] William Cramer, "Carcinogenesis," *JAMA*, 119 (1942): 309; Peyton Rous, "The Nearer Causes of Cancer," *JAMA*, 122 (1943): 573.

[16] "Tobacco and Longevity: Query and Minor Note," *JAMA*, 141: (1949): 633.

[17] R. L. Levy et al., "Effects of Smoking Cigarettes on the Heart in Normal Persons and in Cardiac Patients," *JAMA*, 135 (1947): 417-22.

[18] Kenneth M. Colby, *A Primer for Psychotherapists* (New York: Ronald Press, 1951), p. 39.

[19] National Cancer Institute of Canada, *CMAJ*, 79 (1958): 566ff.

[20] Royal College of Physicians of London, *Smoking and Health* (London: Pitman Publishing Co., 1962); *Smoking and Health: A Report to the Surgeon General* (Bethesda: U.S. Govt. Printing Office, 1964).

industry.[21] Scholarly deniers retrenched into a small but vocal collectivity serving the cigarette industry, with an intellectual stature in the broader medical community comparable to the Flat Earth Society—albeit with far more serious financial backing. Those well-funded deniers were able to influence popular understanding of tobacco hazards, as the tobacco industry did all it could to "keep the controversy alive."[22]

How was this controversy kept alive?

The Tobacco Industry's Denials

Political theorists remind us there is no revolution without resistance, and we certainly see this in the history of efforts to discover, publicize, and limit the extent to which tobacco harms the human body. The discovery of tobacco hazards on a very large scale—notably lung cancer and heart disease—was as "controversial" as it was, and for so many decades, largely because it met such dedicated and well-funded resistance. Indeed, a more deadly and consequential resistance would be difficult to name. (Global warming denial is comparable in certain respects, though it should also be noted that several early and influential climate denialists worked earlier at very high levels for the tobacco industry, learning disinformation techniques later deployed in the climate science denial enterprise.)[23] In the mid 1950s, cigarette makers in the United States organized a campaign to deny the reality of tobacco harms, utilizing ridicule of science and governmental health authorities, financial support for scientific skeptics, and a broad campaign to influence the media and popular opinion. In New York, the presidents of the leading American companies (all but Liggett) met at the Plaza Hotel in Manhattan on December 14, 1953, to craft a plan to combat the congealing consensus. Hill and Knowlton, the world's largest PR firm, was hired to coordinate the campaign, which centered around an effort to create doubt about the reality of tobacco hazards.[24] Tobacco manufacturers and their PR agents stressed the need for "more research" to resolve a purported "cigarette controversy," using their extensive media contacts to orchestrate a public relations blitz. The campaign was well-funded and effective, harnessing bodies such as the Tobacco Institute (founded in

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[21] Allan Brandt, *Cigarette Century* (New York: Basic Books, 2007).

[22] BAT in 1988 commented on how Philip Morris was spending vast sums of money "to keep the controversy alive"; see Sharon Boyse (BAT), "Note on a Special Meeting of the UK Industry on Environmental Tobacco Smoke, London, February 17th, 1988," Bates 2063791176-1180.

[23] Naomi Oreskes and Eric Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (New York: Bloomsburg Press, 2010).

[24] Hill and Knowlton had already been hired by ITL 1954-1957 to help the Canadian industry recover from the 1953/54 "cancer scare."

1958), the Tobacco Industry Research Council (founded in 1954 and continued after 1963 as the Council for Tobacco Research) and many other legal and/or PR agents and academic ("third party") fronts. In Canada, similar functions were performed by the Ad Hoc Committee of the Canadian Tobacco Industry (founded in 1963) and its successor organization, the Canadian Tobacco Manufacturing Council (founded in 1970), along with marketing and public relations departments of the individual companies with the assistance of law firms working for the cigarette industry in the United States.

How did this scheme work?[25]

In Canada, while we cannot say that the campaign to deny the hazards of cigarettes was always as aggressive or shameless as in the United States, we can say that for decades, Canadian tobacco manufacturers followed the American lead by denying the reality of tobacco hazards and doing everything in their power to obstruct efforts to curtail tobacco advertising and tobacco control more generally.[26] Canadian manufacturers corresponded throughout this time (1950 to 2000) with their American counterparts, with some of the earliest contacts (in the 1950s) having to do with an effort to find out why cigarettes might be causing death and disease.

In January of 1953, for example, the president of Imperial Tobacco of Canada Ltd. (ITL) wrote to the president of Brown & Williamson in Kentucky to inquire what he knew about Rand paper, a special cigarette wrapper held to help prevent "cancer of the chest." Imperial's interest in this paper (the cigarette company bought the rights to manufacture it) suggests that the question was no longer "whether" but rather "how" cigarettes caused cancer. One common theory

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[25] In the United States, one key instrument in the conspiracy to deny the hazards of tobacco was the Council for Tobacco Research, established in 1954 to create the impression that the tobacco industry was taking seriously the question of whether smoking caused disease. The CTR funded a great deal of research—over $300 million worth—but never research that would cast tobacco in a bad light. Most of the research was basic biology having little or nothing to do with tobacco—a deliberate and calculated omission. Geoffrey Todd, director of Britain's powerful Tobacco Research Council and BAT's top-ranking researcher, grasped this fact, noting that the CTR had been "instructed not to support research concerned with smoking as a cause of disease." Todd himself was not at happy with this situation, noting that it left "entirely to scientists like Dr. Hammond and Dr. Wynder all research relating to the actual health effects of different types of cigarettes." See Geoffrey F. Todd, "A Record of Discussions in U.S.A. and Canada" (reporting confidentially to the Chairman of BAT), Dec. 2, 1971, CTRL No. PAS1607.

[26] This power should not be underestimated: in 1995, when health advocates tried to limit tobacco industry sponsorship of sports, ITL was confident it could resist: "Fortunately, there exists a substantial and credible pro-sponsorship lobby that we have been able to mobilize in the past, and that we can mobilize again at a moment's notice." See Michel Descôteaux to M. Courtney, "Corporate Affairs Objectives," July 31, 1995, CTRL No. EF1898, p. 6.

at this time—and a topic of intensive research—was that it might be *the paper* rather than *the tobacco* that was causing all this cancer. James Rand's specially purified cellulose was thought to help reduce this danger, hence Imperial's interest. Imperial not only purchased the rights to manufacture Rand's paper, they also consulted with their more traditional paper suppliers (Schweitzer) about this issue.[27] Imperial eventually learned that the American Tobacco Co. had investigated and exonerated paper as a significant carcinogenic agent; American had in fact by this time (the summer of 1953) found through animal experiments conducted at the Ecusta Paper Corporation (with funding from American) that the tobacco leaf in cigarettes was a far more potent cause of cancer than the paper being used as wrappers.[28]

Brown & Williamson did not like to see the Canadians asking such questions, insofar as there was a risk of the public finding out that these new cancer claims were being taken seriously. In February of 1953 Brown & Williamson's president—Timothy V. Hartnett, a former ITL manager for 17 years—advised Imperial to "go slow on this," given that "any implied acceptance of the validity of Rand's claim might have serious repercussions upon the industry."[29] Here was set a pattern that would last for more than half a century: American tobacco executives and lawyers would try to keep their northern neighbors from admitting any truth to cigarette-cancer claims—the so-called "central issue." The American industry's denialist "Frank Statement to Cigarette Smokers" of January 4, 1954, was not widely distributed in Canada,[30] but we do know that very similar claims were conveyed to Canadian public health authorities shortly thereafter. On January 25, 1954, for example, J. M. Keith and Leo C. Laporte from Imperial Tobacco met with Dr. G. D. W. Cameron, Deputy Minister of Health, and conveyed the following points:

> 1. That a larger number of doctors and scientists have questioned the significance of this evidence.
>
> 2. That research has indicated a number of possible causes of lung cancer such as atmospheric pollution.

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[27] Imperial eventually concluded that Rand's paper probably offered no significant cancer advantage—indeed as Schweitzer put it, "if the characteristics of cigarette paper are responsible for disease, then tobacco must also be in a much more marked degree as the constituents are similar" (Edward C. Wood to Timothy V. Hartnett, Jan. 27, 1953, Bates 620710815-0817A).

[28] This topic will be discussed in my forthcoming *Golden Holocaust: Origins of the Cigarette Conspiracy and the Case for Abolition* (Berkeley: University of California Press, 2011).

[29] Timothy V. Hartnett (President, B&W) to Edward C. Wood (President, ITL), Feb. 2, 1953, Bates 620710814.

[30] There is some evidence of Canadian distribution; see *La Presse*, Jan. 4, 1954.

3. That there is no proof that lung cancer in any human being is traceable to tobacco in any form.[31]

Nearly identical language had been used in the text of the American industry's "Frank Statement" the *magna carta* of the denialist conspiracy published three weeks earlier, revealing a nascent policy of following the American industry's lead on smoking and health.

American and Canadian tobacco contacts were close for the next several decades. Imperial and Brown & Williamson were both subsidiaries of British American Tobacco (BAT) in London (part of the BAT "Group" of companies[32]) and often shared both research and marketing materials. Brown & Williamson shared with Imperial marketing strategies and data on Kool cigarettes, for example, and provided information on how (Lorillard's) Kent filters were constructed.[33] The two companies exchanged all kinds of technical information they would not have divulged in public—information on the "clinging" properties of Lucky Strike ash, for example, or on how chemical (sugar) manipulations might improve the smoking qualities of Burley leaf.[34] It is important not to exaggerate this collaboration: we know, for example, that for a time at least Canadians were excluded from some of the secret work done by American manufacturers

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[31] Leo C. Laporte, "Memorandum: Smoking and Health," Jan. 27, 1954, CTRL No. RL9001.

[32] The Court in *USA v Philip Morris* described Imperial Tobacco Ltd. as a "BATCo Canadian Affiliate and member of BAT Group. In 1970, Imperial Tobacco Company of Canada Limited was reorganized and renamed Imasco Limited (Imperial and Associated Companies) making Imperial Tobacco Limited a subsidiary. On January 28, 2000, Imasco shareholders supported a special resolution permitting British American Tobacco (BAT) to acquire the 58.5% of Imasco shares it did not already own. On February 1, 2000, Imperial Tobacco became a wholly owned subsidiary of BAT plc, carrying out its business activities under the name of Imperial Tobacco Canada." See http://www.justice.gov/civil/cases/tobacco2/20040816%20US%20FACTUAL%20MEMO%20w%20BkMks.pdf

[33] T. V. Hartnett (B&W) to Edward C. Wood (ITL), Feb. 26, 1952, Bates 620710905; also Bates 620710895. Compare Bates 620710906-0906A for a sense of the intimacy between these two men (and companies): "I was talking with Wilson this morning about their cigarette business and I mentioned again the great success you folks were having with Kool, particularly in the last few years. I feel that we are missing the boat with Kool here in Canada; but can't put my finger on what may be wrong with the way Tuckett are merchandising the brand. During the discussion Wilson said that he would like to spend a couple of days on the market somewhere in the United States so that he could 'get the feel' of the Kool situation . . . I should appreciate your advising me the best way to do this" (E. C. Wood to T. V. Hartnett, Feb. 20, 1952, Bates 620710906/0906A). Hartnett had been a manager at Imperial Tobacco in Canada for 17 years prior to coming to Louisville to work for Brown & Williamson in 1930.

[34] E. C. Wood (ITL) to T. V. Hartnett, April 8, 1953, Bates 620710869-0870; H. W. Mayhall (B&W) to Leo C. Laporte (ITL), Feb. 22, 1954, CTRL No. RL19750.

documenting the presence of carcinogens in tobacco smoke; we also know, though, that when such work was kept from the Canadians (and from the British) the excluded companies expressed surprise.[35] We shall return to such tensions in a moment.

In the early 1950s, when Canadian manufacturers first started worrying about the cancer problem,[36] a number of different technical solutions were explored, ranging from filters that were supposed to "selectively" reduce carcinogens to additives that would catalyze them. A number of different nitrate compounds were explored, for example, to destroy polycyclic aromatic hydrocarbons. Efforts were made to limit the amount of arsenic in cigarette smoke, and Hill & Knowlton started monitoring Canadian denialist literature.[37] It was apparently not until the early 1960s, however, that PR firms were hired to coordinate a campaign of "health reassurance" in the Canadian tobacco realm. ITL retained the public relations firm of Hill and Knowlton to help the industry prepare for House of Commons hearings and to burnish the public image of cigarettes; American attorneys also started visiting Canada to make sure nothing dangerous from the litigation point of view would come from north of the border.

A dramatic escalation of this collaboration began in the summer of 1963, following Health Minister Judy LaMarsh's announcement of a plan to organize a national "Conference on Smoking and Health," scheduled for the fall of that year. LaMarsh had been prompted to organize such a meeting by the Canadian Medical Association (CMA), whose committee on cancer in April of that year had resolved to mount a "vigorous, country-wide campaign to persuade people to stop smoking cigarets," according to *Globe and Mail*'s David Spurgeon.[38] On June 11, 1963, the

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[35] Neither the British nor apparently the Canadians were informed early on of AT's Ecusta/NYU work: "Coulson, incidentally, will have received a copy of the report of a similar meeting held on September 28 [1953] and the surprising thing to me is the fact that this group have been working on this program for some time without any of us knowing or hearing something about it earlier" (to Robert Sinclair of Imperial Tobacco of London, Nov. 13, 1953, Bates 620710913.

[36] On May 15, 1953, Imperial Tobacco (of London) Chairman Robert (Rab) Sinclair wrote to T. V. Hartnett, President of Brown & Williamson: "I think we all felt that it would be a good thing if we established some regular machinery for the exchange of information relating to, inter alia, published statistics, and articles in medical journals, and other publications." Sinclair was worried about "work that is being done on both sides of the Atlantic in connection with smoking and health"; see (Rab) Sinclair to T. V. Hartnett, May 15, 1953, Bates 620710945.

[37] In 1956, Hill & Knowlton reported that "The December 1955 issue of *Modern Medicine of Canada* had a one-page summary of Dr. Joseph Berkson's article in a recent Mayo Clinic publication" (Bates 4260).

[38] The CMA asked its members to set an example by stopping smoking; see David Spurgeon, "Doctors Approve National Appeal Against Smoking," *Globe & Mail*, April 5, 1963, Bates 2025029020-9076.

CMA asked the federal government to declare lung cancer "a major public health problem" and it was not long thereafter that LaMarsh announced her plans for Parliamentary hearings. Tobacco manufacturers were invited to attend and to present their views, which led to a new level of intensity in cross-border tobacco collaborations. Indeed, these meetings to plan testimony and broader PR mark the beginning of the formal extension of the American denialist enterprise into Canada.

On August 14, 1963, American and Canadian tobacco manufacturers met at the Royal Montreal Golf Club to plan a coordinated denial of the reality of tobacco harms. Those in attendance included Timothy V. Hartnett, President of Brown & Williamson; W. T. Hoyt, Executive Director of the Tobacco Industry Research Council; Carl G. Thompson from Hill and Knowlton; John M. Keith, President of ITL; Robert S. Wade and Norman A. Dann from ITL; and ITL's Edward C. Wood, who chaired the meeting. Hill & Knowlton's Thompson presented a draft of materials he had developed for the LaMarsh conference, including charts that would be used to claim that the apparent increase in lung cancer was simply a diagnostic artifact. Hill & Knowlton was assigned the task of preparing other materials on "education, advertising, labeling, taxation, moderation, and [the] economics of the industry." Norman Dann was charged with sending ITL's "list of attitudes" developed in April 1963 to Carl Thompson for review by Hill & Knowlton.[39]

We should recall that this was not the first time Canadian tobacconists had hobnobbed with their American counterparts. Edward C. Wood from Imperial, for example, had attended the Tobacco Institute's "Spring meeting" at Hot Springs, Virginia, on May 23-25, 1963, rubbing shoulders with Stanley Temko of Covington & Burling, Carl Thompson of Hill & Knowlton, Henry Ramm of R.J. Reynolds, and dozens of other key players in the American denialist network.[40] We also know that Hill & Knowlton had been following Canadian skeptics since the mid 1950s, when the effort to find "friendly scientists" had moved into high gear. Hill & Knowlton and Hartnett had also met with ITL's E. C. Wood, J. M. Keith, L. C. Laporte, R. S. Wade, and Norman A. Dann in August of 1962, to discuss whether the Tobacco Institute's *Tobacco and Health* broadsheet should be "Canadianized" and sent to Canadian physicians.[41] Hill & Knowlton VP Bill Durbin had also lectured before the Toronto members of the Public Relation Society in February of 1963, commenting on the impact of foreign events on both

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[39] "Notes on a Meeting Held Wednesday August 14th, 1963, at the Royal Montreal Golf Club," Aug. 23, 1963, CTRL No. RL9030.

[40] F. W. Storm to M. Yellen (Lorillard), May 28, 1963, Bates 88790072-0077.

[41] Norman A. Dann (ITL), "Draft Notes on Meeting Held at Royal Montreal Golf Club, August 2, 1962," Aug. 15, 1962, CTRL No. RL9008.

Canada and the U.S., including the Royal College of Physicians'1962 report (*Smoking and Health*), which had certified a causal relationship between smoking and lung cancer.[42]

Canada was also discussed at a meeting of the Tobacco Institute's Public Relations Committee on September 19, 1963, with Carl Thompson of Hill & Knowlton taking the lead. Here Robert Heimann, American Tobacco's powerful Assistant to the President, pointed out that TIRC Scientific Director Clarence Cook Little had taken a "very consistent position for nearly ten years and in writing," and that "we could not 'accommodate' too much without implying that T.I.R.C. was a phony or a public relations gimmick."[43] One week later, Lorillard's president was informed that both the TIRC and Imperial were "working very closely on this [Canadian] hearing" and that "Both sides of controversy will present their briefs." The biggest worry for the Americans was that Canadian cigarette makers would concede "probable guilt" (i.e., cancer causation); advertising restrictions were another worry, and there was concern that the Health Minister's report would be released so close to the Surgeon General's as to create an inopportune media synergy.[44]

One striking aspect of the industry's 1963 testimony is how adamant cigarette makers were in refusing to admit all evidence of harm. The industry's position was nicely summed up in their presentation to the Conference on November 25 and 26, in which they maintained that:

> There has been much generalized discussion about "mounting evidence" against tobacco in the public press. The fact is that the "mounting evidence" consists of repetition of the same charges restated by different people. This "evidence" was, and remains, inconclusive no matter how often it is repeated and restated.[45]

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[42] Norman A. Dann (ITL), "Smoking and Health," Feb. 26, 1963, CTRL No. RL9065. Durbin apparently generated "a chuckle from the audience" when he characterized the relationship between smoking and lung cancer as "the alleged relationship."

[43] Robert Heimann to Robert B. Walker and Alfred F. Bowden, "Public Relations Meeting: Tobacco Institute," Sept. 19, 1963, Bates 966042274-2276.

[44] A. J. Bass to Morgan J. Cramer, President, Lorillard, Sept. 23, 1963, Bates 84409557-9558. Strategies for how to coordinate an approach to smoking and health had also been discussed at BAT's 1962 conference on "Smoking and Health" chaired by Sir Charles Ellis, with BAT companies from the U.S., India, Australia, Canada, and elsewhere in attendance; see CTRL No. fme50a99.

[45] "Some Scientific Perspectives for Consideration of Smoking and Health Questions: A Presentation of an Ad Hoc Committee of the Canadian Tobacco Industry to the Conference on Smoking and Health," Nov. 25-26, 1963, CTRL 034368A.

This was straight from the "no proof" playbook developed by American industry attorneys, ignoring the very real mountain of science—thousands of published papers in the scientific literature by this time—that had confirmed deadly harms.[46] The Canadian industry's experts claimed that "the problem of lung cancer" was "an extremely complex one and in need of continuing study"; the industry denied even the reality of the increase in lung cancer, claiming instead that this was simply an artifact of improved diagnostics: techniques of diagnosis had improved, more people were going to doctors, more people were being X-rayed and so statisticians were recording more lung cancers, etc. The industry reproduced a chart suggesting a dramatic decline in faulty (or missed) diagnoses—a theme developed earlier in strategy sessions by American lawyers and PR men. Much of the industry's defense hung on the claim that health advocates had confused correlation and causation—an insulting ruse the Health Minister clearly saw through. Much of the industry's testimony relied on questionable research funded by the tobacco industry—though this was never disclosed during the presentations. Several of the studies cited by the industry had in fact been produced by researchers working under contract with the industry or even in executive positions. Robert Heimann, for example, co-author of a much-hyped study showing supposedly low rates of lung cancer among smokers working inside the industry, was Assistant to the President—and later President—of the American Tobacco Company.[47]

Another significant aspect of the industry's 1963 testimony concerns the topics ignored. The Ad Hoc Committee made no mention of benzpyrene in cigarette smoke, for example, even though ITL's own laboratories had identified this carcinogen in cigarette smoke and developed ways to eliminate it. In 1958, for example, the company had devised a method to assay 3,4 benzpyrene in cigarette smoke condensate and leaf extracts, showing that 90 percent of the compound was generated during combustion and that the carcinogen could be significantly reduced by pre-treating the cured leaf with a copper nitrate catalyst.[48]

Instead of admitting causation, however, the Ad Hoc Committee dug in its heels, holding onto its claim that the "charges" against cigarettes were "unwarranted by the scientific evidence available." Cancer was a "profound mystery," and medical scholars had simply confused correlation and causation.

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[46] One of the best bibliographies from the time is the U.S. Surgeon General's report, *Smoking and Health* (Washington, D.C.: U.S. Govt. Printing Office, 1964).

[47] J. Cohen and R. K. Heimann's highly flawed study was titled "Heavy Smokers with Low Mortality," *Industrial Medicine and Surgery*, 31 (1962): 115-20.

[48] "Polynuclear Hydrocarbons in Tobacco Smoke," 1958, Bates 650022157-2209. Cigarette smoke was found to contain 5 micrograms of benzpyrene per 500 g of tobacco, or about 1 part per hundred million.

This deconstructive bluster was decorated with long quotes from industry-friendly skeptics—a veritable academy of laggards in the mold of the TIRC's own "white paper" compilation from 1954. Indeed, the ideas expressed in the Ad Hoc Committee's "Scientific Perspective" paper from 1963 followed closely those in the TIRC's "Scientific Perspective" paper from 1954—published with a nearly identical title.[49]

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The tobacco industry's testimony before governmental and regulatory bodies was consistently misleading, bordering on prevarication. The pattern in many instances was for a public health message to be issued, to which the industry would respond with its familiar denialist routine.

In 1969, for example, when cigarette manufacturers were again asked to address the safety of their products, this time in testimony before the House of Commons, the Ad Hoc Committee of the Canadian Tobacco Industry produced another long list of refutations. Paul Paré, President of Imperial Tobacco and Chairman of the Ad Hoc Committee, testified that there was no "sound scientific validity" to the charges that smoking was "a major cause of illness and death," claiming instead that the evidence gathered thus far was relying "more on prejudice than scientific evidence." Paré followed this heavily lawyered script with a long tirade against the public health community, blending ridicule with warnings about "anti-tobacco crusaders" causing the "strangulation of the tobacco economy." Paré claimed that cigarettes were being turned into "a scapegoat for nearly every ill that man is heir to . . . a whipping boy to be flogged" using "scare tactics" and "extreme and unsubstantiated propaganda."[50]

Paré also raised the spectre of "anti-tobacco crusaders" broadening their attacks, leading to a prohibition of all that was near and dear to right-minded Canadians:

> What other risks might come in for attempts at elimination? Aspirin? Automobiles? Alcohol? Milk? Eggs? Beefsteak? Childbirth -- surely a major cause of infant and maternal mortality? These are not fanciful thoughts. Some people are seriously thinking along these lines.[51]

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[49] TIRC, "A Scientific Perspective on the Cigarette Controversy," April 14, 1954, Bates 961008056-8076; compare the Ad Hoc Committee's "Some Scientific Perspectives for Consideration of Smoking and Health Questions," Nov. 25-26, 1963, CTRL 034368A.

[50] Paul Paré's "Statement to the Standing Committee" from June 5, 1969, is available in the CTMC's "Highlights reflecting industry position on Bill C-248," Jan. 1., 1971**,** CTRL No. 134519A, where one can find a number of other denialist documents.

[51] Ibid.

Paré softened this dire prognosis with a promise to fund research to get at the bottom of this "controversy," including a plan to put up "$300,000 toward the establishment of the new Interdisciplinary Respiratory Research Laboratory at McGill University." The Ad Hoc Committee also published a 121-page report and individual briefs from tobacco industry executives, adorned with denialist claims from scholars on the industry's payroll, a veritable academy of laggards. The hard-won scientific consensus that smoking causes cancer and other diseases is vigorously disputed, with the causes linked to heart disease or lung cancer characterized as "elusive and unknown."[52]

Here again we find the firm guiding hand of American lawyers. Many of the arguments and strategies adopted by the Ad Hoc Committee and tobacco PR organs (notably the CTMC, successor to the Ad Hoc Committee) followed quite closely those advanced by their counterparts south of the border. That is hardly by accident, given the close working relationship of the two industries—or rather one industry from two neighboring nations—in litigation, on policy, and in public relations. Canadian and American tobacco manufacturers shared common obstructionist strategies and common rhetoric—talk of "no proof," "adult choice," and "legal product," for example, but also of "common knowledge," the "health lobby" bent on an "anti-tobacco crusade," etc.[53] Manufacturers in the two countries also coordinated planning for litigation and the choice of witnesses to be used in hearings.

Tobacco manufacturers in both countries also developed similarly deceptive marketing gimmicks posing as breakthroughs in cigarette design. This includes filters, menthols, king sizing, low tars, lights, slims, and milds—all of which were offered for "health reassurance" while delivering nothing of the sort. Canadian manufacturers do not seem to have employed freebasing techniques to juice up the nicotine in their cigarettes as extensively as their American counterparts, but that is partly because nicotine levels have always been quite high in the tobacco plants grown in Canada (see below).[54] From the 1950s up through the present, Canadian

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[52] Ad Hoc Committee, *A Canadian Tobacco Industry Presentation on Smoking and Health* (1969); "Presentation of Paul Paré, as chairman of the Ad Hoc Committee of the Canadian Tobacco Industry," June 5, 1969, CTRL No. xby54a00.

[53] In both the American and the Canadian case we find talk of "the antis" (anti-smokers), "common knowledge" of "alleged" hazards, "satisfaction" (a code-word for nicotine), etc.

[54] ITL researchers were kept abreast of American freebasing technology: Patrick J. Dunn of ITL was copied on confidential Brown & Williamson Ammonia Technology Conference reports, for example; see R. R. Johnson, "Ammonia Technology Conference Minutes," June 12, 1989. ITL scientists were even sent Brown & Williamson's notorious 1991 "Handbook for Leaf Blenders," detailing how to juice up nicotine in cigarette smoke by adding ammonia; see P. L. Aulbach et al., *Root Technology: A Handbook for Leaf Blenders and Product Development* (Feb., 1991). "Root Technology" (freebasing) was banned in a number of countries—Austria, Germany,

manufacturers have sold cigarettes with nicotine levels deliberately designed to create and sustain addiction, despite having the ability—as they still have today—to create any desired level of nicotine in those products, including zero. Canadian cigarette manufacturers are no different from their American counterparts in this regard. Canadian manufacturers have also engaged in joint actions with the Americans to defeat cigarette-unfriendly legislation, and in some instances have turned their entire legal strategy over to the Americans.

Such was the case in 1969, for example, when lawyers from Shook, Hardy and Bacon organized the presentation of expert testimony for Canadian cigarette makers at House of Commons hearings on smoking and health.[55] One purpose of these hearings, held by the Standing Committee on Health, Welfare and Social Affairs, was to find out where Canadian tobacco manufacturers stood on questions of tobacco and health. The immediate danger (from the industry's point of view) was a series of bills threatening to limit tobacco advertising. As part of an effort to organize opposition, Canadian tobacco manufacturers had turned to their Ad Hoc Committee, headed by ITL president Paul Paré. The Ad Hoc Committee hired Hill & Knowlton and a firm called Public and Industrial Relations of Montreal to organize PR and expertise for the hearings, with assistance from cigarette industry law firms from the United States (the aforementioned Shook, Hardy and Bacon). The industry's case was presented in the House of Commons in May and June of 1969, following closely the classic denialist themes worked out earlier by American tobacco manufacturers. Pressure was also brought to bear on tobacco workers' unions and tobacco growers "to ensure that these sectors were making maximum use of the MPs and other influential people with whom they had local connections."[56]

Hill & Knowlton organized presentation of expertise for the 1969 hearings, with help from in-house counsel of Philip Morris (Alexander Holtzman, assistant

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Finland and Spain, for example—but apparently not in Canada (ibid., p. 46). AJAX was the code name given to a band-cast (slurry) reconstituted tobacco developed by IMASCO in Canada; IMASCO was pondering the use of ammoniated band-cast recon in the late 1980s, though it is unclear whether this was ever implemented commercially.

[55] See, for example, Norman A. Dann, "Progress Report on Actions Arising out of the Meeting of the Ad Hoc Committee of the Canadian Tobacco Manufacturers Held at Montreal, January 29, 1969," March 4, 1969, CTRL No. MCS2435, where we hear that "Marshalling of expert witnesses has been undertaken vigorously by Mr. David Hardy" of Shook, Hardy and Bacon.

[56] G. C. Hargrove to "All No. 1s of Associated Companies," Aug. 28, 1969, Bates 301059141, CTRL No. riq40a99. Members of the Ad Hoc Committee included David M. Stewart, President of Macdonald Tobacco, Inc.; John H. Devlin, President of Rothmans of Pall Mall Canada Ltd.; and Antonio Toledo, President of Benson & Hedges (Canada) Ltd., with ITL President Paul Paré as Chairman.

general counsel at Philip Morris)[57] and Shook Hardy and Bacon, the chief law firm defending tobacco companies in the United States. Shook Hardy helped Canadian manufacturers select, manage, and train witnesses for the hearings and helped with the "drafting and revisions" of expert statements; the Kansas City-based law firm also briefed certain members of Parliament who wanted to know "the other side of the story."[58] Shook Hardy also helped Hill and Knowlton orchestrate radio and television appearances for their expert guests, to make sure the denialist message got widespread media coverage.[59] Most of the witnesses presented by Canadian manufacturers were seasoned—and highly paid—denialists from the American litigation circuit: R. H. Rigdon, Victor Buhler, Hiram Langston, Eleanor J. Macdonald, Theodor D. Sterling, Rune Cederlof, and Milton B. Rosenblatt all had experience denying the reality of tobacco harms in the United States prior to testifying (along very similar lines) in Canada.[60]

Tobacco industry archives indicate that testimony by the Americans "had a considerable impact on the members of the Standing Committee,"[61] though it must also be said that the Committee did an excellent job in sorting the wheat from the chaff, coming down clearly on the side of the (uncorrupted) scientific community. The Committee was remarkably generous in its treatment of the industry's experts, offering a psychological/economic rationale for their refusal to admit causation:

> It would seem unrealistic to expect tobacco growers and manufacturers to acknowledge the dangers of smoking. If they did, the inconsistencies between such an acknowledged belief and

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[57] See Bates 2024988587 and surrounding documents. Shook Hardy lawyers by this time—Spring 1969—were on a first name basis with Canadian tobacco executives; see David R. Hardy to Leo LaPorte, Executive Vice President of Imperial, Aug. 4, 1969, Bates 2015037426. Witnesses billed Shook Hardy for time spent preparing to testify in Canada; see Victor B. Buhler to David R. Hardy, Aug. 11, 1969, Bates 2015037425.

[58] G. C. Hargrove to "All No. 1s of Associated Companies," Aug. 28, 1969, Bates 301059141, CTRL No. riq40a99.

[59] Ibid., p. 3. For expert opinions presented to the Standing Committee, see the 1969 *Report of the Standing Committee on Health, Welfare and Social Affairs on Tobacco and Cigarette Smoking* (Ottawa: Queen's Printer, 1969), Bates 1002609186-9238, CTRL No. 000343C.

[60] Milton B. Rosenblatt received $5000 for his appearance before the Standing Committee on May 22, 1969; see Bates 2015037422 and Bates 2015037409. The exchange sometimes went the other way: John P. Wyatt from the University of Manitoba testified before the U.S. Congress in 1969, for example, for which he charged the extraordinary sum of $11,990 (Bates 2015037430). Funds for witnesses (Rune Cederlof, for example) were sometimes channeled through the industry's "Special Account No. 4" used for special operations of this nature; see Bates 2015037444.

[61] G. C. Hargrove to "All No. 1s of Associated Companies," Aug. 28, 1969, Bates 301059141, CTRL No. riq40a99, p. 3.

> their behaviour would make it impossible for many of them to continue producing tobacco or cigarettes.[62]

The Standing Committee also cautioned against the continuance of the denialist enterprise, albeit with diplomatic restraint: "it is no longer in the public interest to prolong the debate about whether cigarette smoking is a health hazard. Too many potential or current smokers are liable to be misled or given false hope by such debate."[63]

The House of Commons hearings of 1969 represent a new level of collaboration between Canadian and U.S. tobacco manufacturers.[64] The net effect of this collaboration was to have a distorted view of the state of scientific knowledge presented to the public and the Canadian parliament. Even if Health Ministry officials managed to see through this ruse, however, we cannot necessarily say this was true for everyone in the more general population. Many of these same "no proof" strategies were widely spread in the broader culture; and we know that in many instances magazines and newspapers were pressured not to publish articles unfriendly to cigarettes, given the substantial dependence of such publications on tobacco advertising.[65] Gloria Steinem, founding editor of *Ms.*

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[62] The Standing Committee's report: "Cigarette Smoking—The Health Question and the Basis for Action," is printed in House of Commons proceedings for Dec. 9, 1969, CTRL No. RL38284.

[63] Ibid. The Standing Committee did a point by point refutation of the industry's Ad Hoc claims, concluding that it was "impossible to escape the conclusion reached by the overwhelming majority of health authorities and organizations throughout the world that cigarette smoking is one of the most important preventable causes of disease, disability and death in countries like Canada" (p. 2:36).

[64] Coordination on the health issue took placed somewhat later in Canada than in the U.S. In the U.S., the denialist conspiracy arose with the Plaza Hotel meetings in December of 1953; Canadian manufacturers did not craft a coherent denialist campaign until the 1960s. One important instrument for this campaign was the Ad Hoc Committee of the Canadian Tobacco Industry, organized to present evidence at the 1963 conference. The 1969 House of Commons hearings and threats of smoking legislation prompted further collaboration, as reported by BAT's Hargrove:

> From the moment the private members' bills were referred to these the companies worked in close cooperation. Subsequent events proved the value of starting early in the preparation of the industry case and *acting throughout as an industry*.

See G. C. Hargrove to "All No. 1s of Associated Companies," Aug. 28, 1969, Bates 301059141, CTRL No. riq40a99, p. 3, emphasis in original.

[65] Kenneth E. Warner and Linda M. Goldenhar, "The Cigarette Advertising Broadcast Ban and Magazine Coverage of Smoking and Health," *Journal of Public Health Policy*, 10 (1989): 32-42;

Magazine in the United States, lamented this dependence on cigarette advertising as "a kind of prison."[66] We also know that many of the same witnesses who testified before the Standing Committee also appeared in Tobacco Institute propaganda films such as "Smoking and Health—the Need to Know," films designed to cast doubt on the reality of the tobacco-cancer link. The Tobacco Institute actually paid to measure the impact of such films on popular understanding, finding that people who had watched the film were significantly less likely to agree that smoking caused lung cancer than people who had not watched the film—by a margin of 17.8 percent.[67]

Crucial to keep in mind, of course, is how far the industry's public reassurances were scientific reality. By the 1970s, the industry's cries of "no proof" were basically tantamount to flat earth geology. Such was the opinion even of tobacco industry insiders, who wrote in such terms when they thought no one would be listening. ITL research director Robert M. Gibb in 1977 characterized the industry's "not proven" stance as "totally lacking in credibility," adding that British American's R&D people were comparing such a stance to pronouncements of "The Flat Earth" society."[68]

Tobacco industry insiders also recognized the denialist stance as a contrivance for purposes of litigation. Sydney J. Green, BAT's senior research scientist, in a confidential 1976 memo reflected on how the tobacco industry's public position with regard to causality was "dominated by legal considerations":

> The public position of tobacco companies with respect to causal explanations of the association of cigarette smoking and diseases is dominated by legal considerations. In the ultimate, companies wish to be able to dispute that a particular product was the cause of injury to a particular person. By repudiation of a causal role for cigarette smoking in general they hope to avoid liability in particular cases. This domination by legal consideration thus leads the industry into a public rejection in total of any causal relationship between smoking and disease and puts the industry in a peculiar position with respect to product safety discussions . . . .

Elizabeth M. Whelan et al., "Analysis of Coverage of Tobacco Hazards in Women's Magazines," *Journal of Public Health Policy*, 2 (1981): 28-35.

[66] Gloria Steinem, "Sex, Lies & Advertising," *Ms.*, July-Aug. 1990, cited in Bates TI51631155

[67] Anne Duffin to William Kloepfer, June 29, 1973, Bates TIMN 0100443-0446.

[68] Robert M. Gibb (ITL) to Norman Dann (IMASCO), 1977, CTRL No. PAS2731. The "Flat Earth" society reference is to ICOSI, the International Committee on Smoking Issues, which tobacco industry insiders recognized as essentially a propaganda organ. A BAT document from March 1978 characterized the Committee's principal goal as follows: "The aim of ICOSI is defensive research aimed at throwing up a smoke screen and to throw doubt on smoking research findings which show smoke causes diseases" (Bates 321588692-8692).

> The industry has retreated behind impossible demands for "scientific proof."[69]

Green one year later wrote to BAT chairman Patrick Sheehy to describe a "safety index" by which different kinds of cigarette could be compared; variables in this index included "average loss of life expectancy due to diseases" and "proportion of deaths caused by smoking," with different weightings given to toxic deliveries of nicotine, benzpyrene, carbon monoxide, and several other poisons in cigarette smoke. Green's analysis suggested that low tar (10 mg) cigarettes could cause as many deaths as high tar (20 mg) cigarettes, ignoring deaths due to heart disease.[70] Calculations of this sort were never made public, however.

Historians like to differentiate time and space—and loci of political authority and impotence—and it is important to realize that this primacy of legal considerations did not extend effectively into Canada until the 1960s. Prior to the testimony of the Ad Hoc Committee of 1963, in fact, we cannot really speak about an effective pan-Canadian (or pan-American) "conspiracy." Alliances were weak, with no absolute uniformity on the cancer question. The clearest example of this is Rothmans' public admission from July of 1958 that the cigarette-cancer link had been established "beyond all reasonable doubt"—a startling confession given the subsequent lock-step conformity with American denialists.

Rothmans' principal interest in breaking with the industry appears to have been a hope to increase sales of its filter-tipped brands. Rothmans of Pall Mall Canada by the mid 1950s had become a leading seller of filtered cigarettes; indeed Rothmans King Size Filter was the top-selling brand it that category. The company clearly hoped that the ongoing "cancer scare" would help boost filter sales, and started floating strong health claims in its advertising copy.[71] Rothmans

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[69] Sydney J. Green (BAT), "Cigarette Smoking and Causal Relationships," Oct. 27, 1976, Bates 2231.08. Green had a curious notion of safety as "the acceptability of risk" ("Safety Evaluation of Cigarettes," Oct. 22, 1976, Bates 301140144-0146); judging safety was therefore an inherently "normative, political activity" not "susceptible to a scientific approach."

[70] Sydney J. Green to Patrick Sheehy, "Safety Index for Cigarettes," Aug. 19, 1977, Bates 110069816-9819. This was based on the so-called "Herzfeld Index."

[71] Rothmans was criticized for playing the health card in its advertising; the company was quite right to protest, though, that many other cigarette manufacturers had made similar claims: Brown & Williamson had recently sold a Viceroy cigarette with a "Healthguard filter," for example, and BAT in Asia had marketed its State Express 555 cigarette with a claim (printed on the pack) that: "these cigarettes are absolutely harmless to the throat." And Craven 'A' had boasted of being "Made especially to prevent sore throat." O'Neil-Dunne hinted at knowing where BAT had bodies buried: "If we have skeletons in our cupboard or worms in our can, B.A.T. know that I know that they have much bigger worms." See Patrick O'Neil-Dunne to Ron A. Irish (Sydney), copied to Anton E. Rupert and Sydney Rothmans, Aug. 25, 1958, CTRL No.

researchers were praised for this turnabout at the 7th International Cancer Congress in London (July 6-12, 1958), attended by Rothmans researchers hoping to spread the news of this break from the "no proof" camp. Upping the ante, Rothmans' world technical director, Patrick O'Neil-Dunne, on July 28, 1958, issued a press release (in Toronto) announcing that his company had decided to accept the cigarette-cancer link as "irrefutable":

> The enormous weight of statistical evidence linking lung cancer with heavy smoking can no longer be refuted. A majority of manufacturers either oppose or ignore the problem. . . . The link has been established beyond all reasonable doubt.[72]

This was quite an extraordinary concession—indeed, coming from a cigarette maker it was unprecedented. O'Neil-Dunne didn't use the language of causality *per se*, but "beyond all reasonable doubt" was hardly vague. Indeed, the bigger players in the cigarette business were quick to pounce; the campaign to deny all evidence of hazards was already under way, and they didn't like the idea of a Canadian or any other company breaking ranks.

Timothy V. Hartnett, chairman of the American industry's powerful TIRC, was the first to respond, in a press release issued (via Hill & Knowlton) only a couple of days after Rothmans' announcement. Hartnett made it clear that O'Neil-Dunne did not speak for the industry; indeed the effort was to make this the claim, not of one of Canada's largest cigarette manufacturers or even its technical director, but rather of a remote "sales representative" from South Africa:

> The position of this country's cigarette industry is unchanged because the facts have not changed. Scientific evidence simply does not support the theory that there is anything in cigarette smoke known to cause human lung cancer.

064588A. Rothmans clearly had its own success in the filter market in mind when it instructed its sales force on how it was "'lung cancer' which provided the impetus that sent new brands sky-rocketing to fame, and the old-time favorites crashing to the ground"; see "Sales Lecture No. 3: Motivation Research," Oct. 1957, CTRL No. 92212, p. 1.

[72] Patrick O'Neil-Dunne's words are cited in *Time* magazine, "The Filter War," Aug. 11, 1958, where we also find one industry insider's characterization of O'Neil-Dunne as "like the kid in the gang who punks out." Rothmans' announcement was big news: the *New York Times* recognized the admission as quite unusual for a cigarette manufacturer, indeed it was apparently "the first anywhere to acknowledge that lung cancer is definitely linked to smoking" ("British Cigarette Maker Finds Lung Cancer Linked to Smoking," July 29, 1958). Reports also appeared in Canadian papers such as *La Presse* (July 31) and *The Gazette* (July 30).

> Therefore, we cannot give any weight to the opinions of a South African tobacco company's sales representative as expressed in Canada relating to the health charges against cigarettes.[73]

Hartnett was clearly trying to diminish the force of Rothmans' concession—and to isolate its author. And O'Neil-Dunne was not at all pleased. In a long letter to Hartnett, a defiant O'Neil-Dunne defended Rothmans' new stance, noting that the company had chosen "not to argue against the British, New Zealand and United States Government Health authorities and the majority view of medical opinion on the statistical evidence." O'Neil-Dunne was clearly also upset, though, and expressed his inability to understand why Hartnett, "as Chairman of a presumably impartial committee, should use the occasion to attempt to belittle our Companies and one of our principals" (i.e., himself). O'Neil-Dunne said that Hartnett's view was suspiciously similar to that of another competitor, BAT's Wills. O'Neil-Dunne tried to make peace by granting that while a *statistical* link had been proven, a *biological* or causal link had not: "The point on which we do not seem to be at variance is that the biological link between smoking and cancer in mankind remains unproven."[74]

The O'Neil-Dunne affair shows how unusual it was—and newsworthy—for a tobacco company at this time to advertise a tobacco-cancer link. O'Neil-Dunne was attacked for his concession, both publicly and in private. I've mentioned the public riposte by Hartnett, but Joseph Cullman III at Philip Morris also contacted Edward C. Wood at Imperial in Montreal to talk about it—and Duncan Oppenheim at BAT in London also spoke with Imperial's Wood, conveying his certainty that "all tobacconists are shocked at the attitude taken by O'Neil-Dunne."[75] In Australia, too, W.D. and H.O. Wills worried that while such an admission might for a time help Rothmans sell cigarettes, in the longer run it would "wreck the interests of tobacco manufacturers in general." O'Neil's admission was selfish, Wills claimed, since "by the time real damage is done to the industry he will either have made his pile and retired or perhaps have died, either naturally or violently." Wills also worried that similarly direct "health advertising" might soon come to

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[73] TIRC Press Release, "Tobacco Spokesman Says Facts and Position are Unchanged" (voice of Hartnett), July 31, 1958, CTRL No. ES790.

[74] Patrick O'Neil-Dunne (Rothmans) to Timothy V. Hartnett, Sept. 9, 1958, CTRL No. 065091A. O'Neil-Dunne was not easily cowed: on September 19, 1958, he wrote again to Hartnett, protesting his misrepresentations: "I am prepared to overlook this incident; but if you utter any more false statements about me I will go for you" (CTRL No. ES4713).

[75] Duncan Oppenheim to Edward C. Wood, Aug. 5, 1958, CTRL No. ES4721.

Australia, for which the company was making contingency plans to "offset such a move."[76]

Hartnett's pressure seems to have worked, given the backtracking we find at Rothmans' shortly thereafter. On August 13, the company published a softened revision of its cancer claim, noting that while the company accepted the statistical evidence, the biological relationship between smoking and cancer was "still not known" and "a direct link has not been proved."[77] We also know, though, that the company continued to work internally on smoking and health. On October 17, 1958, O'Neil-Dunne wrote a long memo describing his company's plans to conduct research into special filters, ventilation, paper porosity, burn temperatures, pesticide residues, etc., to combat the health threat. O'Neil-Dunne may have backed off from his public admissions, but he still included a remarkable section in his (private) report conceding the possibility of radioactivity in cigarette smoke:

> A Dr. Michael Ash, of 138 Harley Street, W. l (presently in Canada) has written a paper on the radioactivity of tobacco, foods, fuel and fertilizers. Through the British Atomic Energy Division he has proved to us that the stalk or stem of Rothmans King Size cigarettes made in our London factory is a radioactive substance as defined by the Radioactive Substances Act of 1948 and draft regulations under the Factories Act of Great Britain. In other words, according to him our manufacture in England is illegal.
>
> It is his theory that this and this alone is the cause of lung Cancer. He points out that tobacco is particularly sensitive to exposure to radiation fall-out and the use of certain fertilisers increases the uranium or thorium or potassium in the stem of tobacco, and all these substances are radioactive. The cure is simple - e.g., steam or wash stems, but the resultant steam or water should be bottled because it contains radioactive substances — to a degree he states perhaps higher than some of the low ore uranium which some governments are stock-piling. This brings us to the use by Canadian farmers recently of the chemical MH30 . . . [78]

Canada of course was not the only country to feel pressure from American litigators. Geoffrey Todd of BAT in 1971 reported on how Britain's Tobacco

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[76] Noel Foley (Sydney) to F. S. Geldart (BAT, Millbank), July 9, 1958, CTRL No. wpm43a99, reacting to a Rothmans ad sent to him by Geldart ten days earlier. Rothmans had become the leading seller of filtered cigarettes in Canada in 1957.

[77] "The International Cancer Congress and Cigarette Smoking" (Rothmans advertisement), *Toronto Daily Star*, Aug. 13, 1958, in Cunningham, *Smoke and Mirrors*, p. 47.

[78] O'Neil-Dunne to Anton E. Rupert (Stellenbosch), "Research: Health Aspects of Smoking," Oct. 17, 1958, CTRL No. 065074A.

Research Council (T.R.C.) also followed—albeit imperfectly—the lead of the Americans:

> From 1956 to 1960, T.R.C. largely followed the American policy of expressing the view that it had not been proved that smoking caused lung cancer. From about 1961, T.R.C. quietly adopted the policy of avoiding comment in this field, neither admitting nor denying causation.[79]

U.S. manufacturers wanted a more unified front, however, and in 1967 sent a delegation consisting of their "three top lawyers"—Addison Yeaman from Brown & Williamson, Henry Ramm from R.J. Reynolds, and Paul Smith from Philip Morris—to try to persuade the TRC "to re-adopt the American 'not proven' position." The Americans were rebuffed, though Todd did note in consolation that TRC operations in Britain had "never actually proved an embarrassment to the U.S. industry in its lawsuits." Todd also observed that "the U.S. industry does not believe in the health value of low tar- and nicotine cigarettes," explaining that "it will supply any kind of cigarettes that the American people will buy."[80]

A great deal is revealed in Todd's long report on his visit to the U.S., during which he interviewed many of the industry's top scientific and legal personnel, among them several Canadians. Brown & Williamson's chief counsel, for example, admitted that the industry had been "forced by the lawsuits to take the 'not proven' provision and to assert it 'affirmatively' (i.e., aggressively)." The refusal to admit causation was clearly litigation-driven: cigarette makers had won all of their cases thus far, but plaintiffs' attorneys were learning from their mistakes and pooling their experience, posing an ever greater challenge. Todd reported that this constant threat of litigation had pushed the industry to reinforce its denialist stance:

> This "not proven" position had therefore to be followed consistently in all fields of industry policy, since any implied admission anywhere could be used by plaintiffs' lawyers in lawsuits. For example, even though it might make the industry appear in an irresponsible light, the same "not proven" line had to be asserted in hearings before Congressional Committees.[81]

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[79] G. F. Todd, "A Record of Discussions in U.S.A. and Canada, November-December 1971," Dec. 2, 1971, CTRL No. PAS1607.

[80] Ibid., pp. 3 and 9.

[81] Ibid., p. 2. Todd concluded from his conversations with Brown & Williamson that the Executive Committee of the Tobacco Institute was the true "seat of power" in the American industry, controlling all smoking and health policy, with advice from the Committee of Counsel (aka "Lawyers Committee" or "Policy Committee" or "Committee of Six"). Philip Morris CEO

Canadian MPs had been subjected to this same pressure in 1969, when American industry experts testified to uphold this same "not proven" illusion. We should not underestimate the gravity of this situation: Canadian cigarette makers were refusing to admit the dangers of their products—in court and in public hearings and in statements to the press and public—as part of a calculated strategy dictated by tobacco industry lawyers in the United States. The net effect was a corruption of popular knowledge. The "not proven" claim was a sham contrived by attorneys working for the world's deadliest business enterprise to keep on selling cigarettes—and winning lawsuits.

We also know that interventions of this sort helped to delay implementation of legislation. In the late 1980s, for example, when the Canadian government was debating passage of a bill banning all advertising of tobacco products (Bill C-51), the industry mounted another campaign of opposition, featuring many of these same denialist (and obstructionist) tactics. A confidential Rothmans, Benson and Hedges "President's Report" for May 1988 commented on how industry action had managed to delay passage of this bill: "in the face of a determined and committed Minister, a majority government and a well organized, well financed pro C-51 lobby, we have been able to delay this step in the legislative process [third reading and passage by the House of Commons] for more than a year."[82] Industry resistance also helped delay the posting of appropriate warnings. It was not until 1989, for example, that Canada's official warning on all cigarette packs was changed from "Smoking is **a** major cause of lung cancer" to "Smoking is **the** major cause of lung cancer" (boldface added). That same year, the warning "Smoking during pregnancy **may complicate pregnancy**" was strengthened to read "Smoking during pregnancy **can harm the baby**." We should think about such changes when confronted with claims of "common knowledge": why would such labels be necessary, if everybody already knew?

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Joseph Cullman III had taken over as Chairman of this Executive Committee (from Ed Finch) in the 1960s. The CTR was "also directed by an Executive Committee with advice of a Legal Committee, each having very much the same membership as the corresponding T.I. Committee." And since "T.I. matters are much more important to the manufacturers than research considerations, the Executive Committee of T.I. in practice determines the general smoking and health policy of the industry" (p. 2).

[82] Rothmans, Benson & Hedges Inc., "President's Report for May, 1988," June 10, 1988, CTRL No. 109061A, p. 6. This and other RBH President's reports were sent to Vernon Brink at Rothmans International and to Marc Goldberg at Philip Morris. When C-51 was finally passed, RJR and Imperial filed separate law suits against the bill on constitutional grounds.

The "main issue" for tobacco denialists was typically lung cancer causation—and it is to repudiate this link that we find the most vehement and persistent denials, right through the end of the second millennium. We should also be aware, however, that the industry denied *every other form of tobacco harm* revealed by modern medical science. The industry denied any impact of smoking on heart disease, and denied any evidence of a danger from smoking during pregnancy. The claim was made that nicotine was not addictive, and that smoking caused neither bronchitis nor emphysema—nor leg and foot rot from vascular degeneration (Buerger's Disease). The industry also denied its own history of misconduct: marketing to youth, for example, or concealing evidence of harms. Some examples from the U.S. and Canada:

1. In 1971, during a televised interview, Philip Morris President and CEO Joseph Cullman III conceded that women who smoke during pregnancy often have "smaller babies"; Cullman also reassured his viewing audience, however, that "some women would prefer having smaller babies."[83] In Canada, too, the President of Imperial Tobacco made this claim in a radio interview from 1970: "Is having smaller babies a bad thing? Do you know? I think there was a study done in Winnipeg by a doctor which demonstrated that smaller babies was probably a good thing."[84]
2. Tobacco manufacturers denied—and still today deny—having ever marketed to youth, contradicting the long trail of documents revealing such efforts. In one survey done for Rothmans, Benson & Hedges, children as young as ten were asked about their smoking behavior. Significant also in this study is that 33 percent of this sample of 6,459 Canadians started smoking prior to age 16; and only one in five started at age 20 or older.[85] (We shall return to this topic of youth marketing in a separate section).
3. Tobacco manufacturers have also worked hard to deny the reality of harms from secondhand smoke. Secondhand smoke denial was a centerpiece of global tobacco industry propaganda in the 1980s and '90s, through denialist organizations such as the Center for Indoor Air Research, the ETS Consultants Program, ARISE and ICOSI, the

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[83] Cullman's remarks, during a 1971 interview with "Face the Nation" can be found at: http://www.youtube.com/watch?v=VpwcF3Malj8

[84] "Radio Interview with Paul Paré," 1970, CTRL No. CAS1627, p. 17. Pare also claimed that "anybody who wants to play with statistics can argue almost any way they please" (p. 10).

[85] Burak Jacobson, **"**Research Report - Cigarette Study Profile Data - Prepared for Benson & Hedges," May, 1989, p. 9, CTRL No. 015987A.

International Committee on Smoking Issues. Denialist propaganda was linked with a PR campaign to equate smoking with freedom; another strategy was to sponsor tobacco-friendly research. This latter strategy involved diluting published medical literature with negative results, so claims could be made about the aggregate of published evidence showing no real effect.[86]

4. Tobacco makers also denied the reality of nicotine addiction, typically by trivializing it as purely a matter of semantics. Tobacco manufacturers have often compared smoking to jogging, watching TV, or eating chocolate, all of which, we are told, are more or less "addictive" or "hard to quit." The corollary claim is that if cigarettes are addictive, then so are many other aspects of modern life. Philip Morris President and CEO James Morgan in 1997 compared cigarettes to Gummy Bear candies: "I love Gummy Bears and . . . I eat Gummy Bears and I don't like it when I don't eat my Gummy Bears, but I'm certainly not addicted to them."[87] Addiction was purely a matter of semantics, and if doctors have come to agree that smoking was addictive, this is only because the definitions had changed. BAT's Sharon Boyse in a letter to the *Daily Telegraph* from June 29, 1994, resorted to ridicule:

> It has been suggested that smoking must be addictive because it contains nicotine. So do many common vegetables, including tomatoes, aubergines and potato skins. Are vegetable eaters also drug users? - physically dependent on their ratatouille, perhaps, in the same way that heroin addicts are dependent on their heroin? Isn't it time to get a little perspective back into the debate on smoking?[88]

5. As late as 1997, the tobacco industry's official position remained essentially denialist on all matters of tobacco and health; basic admissions of causality would only come in the new millennium, and even today there is no admission that millions of people have been killed by cigarettes, or that the industry for many years lied to the public, or that

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[86] Deborah E. Barnes and Lisa A. Bero, "Why Review Articles on the Health Effects of Passive Smoking Reach Different Conclusions," *JAMA*, 279 (1998): 1566-70.

[87] James J. Morgan, deposition testimony in *Broin v. Philip Morris*, April 17, 1997, Bates 2063670882-0926, p. 78.

[88] Sharon Boyse (BAT), letter to *The Daily Telegraph*, June 29, 1994, Bates 500810940-0941; compare also "Depending on Nicotine?" *BAT Bulletin*, Nov. 1994, Bates 500851569-51570.

> low tar numbers and the branding of certain cigarettes as "lights" were both deceptive, or that the companies deliberately marketed to youth.

Tobacco executives were sometimes quite explicit about their efforts to foment popular ignorance. Oftentimes this was done under the rubric of "health reassurance," though we also find cigarette makers talking about the importance of manufacturing doubt or "keeping the controversy alive." "Doubt is our product" is perhaps the most notorious confession of this sort, from a Brown & Williamson marketing document drafted in 1969,[89] but Canadian manufacturers were sometimes equally explicit. Robert Bexon, who would rise from ITL's Manager of New Market Development to the rank of President and CEO, in 1985 characterized himself as a "disinformationist" in a memo describing the utility of a CTMC brochure designed to undermine the evidence linking secondhand smoke to cancer:

> I have enclosed a copy of a CTMC brochure on the medical evidence around passive smoking which I think you will find very interesting. The disinformationist in me suggests that this is another potentially powerful weapon in our arsenal.[90]

Bexon in several such memos made it clear that the industry could only stay in business by understanding and manipulating what ordinary people thought about smoking. Bexon pushed for efforts to understand what young smokers did and did not know about smoking—what they thought about "what makes low-tar cigarettes lower in tar anyway?" for example, or "How much is a milligram?"[91]

Tobacco manufacturers did not want people to know certain things about cigarettes—how addictive they were, for example—despite having a good understanding of this from work in their own laboratories. I've mentioned BAT and Brown & Williamson's use of the term "addiction" prior even to the 1964 Surgeon General's report, and there are other internal industry admissions. Marketing planners in the late 1960s divided cigarette users into "Steady Smokers" and "Unables"—meaning smokers unable to quit smoking—and by the 1960s

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[89] John W. Burgard (Brown & Williamson) to R. A. Pittman et al., "Smoking and Health Proposal," Aug. 21, 1969, Bates 680561776-1777 and attached speech at 680561778-1786, p. 4.

[90] Robert Bexon to Richard W. Crosby (Creative Research Group), April 2, 1985, CTRL No. MRPF3798.

[91] Ibid. Bexon commented on how the only remaining "benefit" of smoking was "stress reduction" and "improved ability to concentrate"; smokers attributed these "benefits" to the drug effects of nicotine, which meant that even these could not be seen as genuine benefits: "Because they are chemically induced through nicotine smokers see these positives as reflections of their own personal weaknesses. They get them but they are not happy about it."

"Unables" outnumbered "Steady Smokers" by a significant margin.[92] Robert Bexon in the 1980s clearly knew that most smokers wished they could stop; indeed he was emphatic on this point, reasoning that the continued prosperity of the tobacco trade depended on the addictive properties of cigarettes, regardless of whatever "positive psychological attributes" might accompany the habit:

> If our product was not addictive we would not sell a cigarette next week *in spite of* these positive psychological attributes.[93]

That again, as Bexon realized, was because smokers basically don't like the fact they smoke, and for good reason: smokers fear they are contributing to their own death. Bexon stressed this crucial fact: "The crux of the problem is personal health. Social unacceptability, passive smoking effects, price, aroma, after effects are all distant seconds to the key smokers' concern that they are damaging their health - contributing to their own death." That is not all, though:

> Death is not the entire problem. In spite of the media pressure linking smoking to cardiac problems & other forms of disease—asthma, bronchitis, etc.—the key health issue is lung cancer. Fear of cancer as much as fear of mortality with its public perception of slow lingering painful etc. is a real problem.
>
> Even without the media this notion is firmly locked in [smokers'] minds. It is continually reinforced by their own physical reaction to smoking and by the fact that they all know individuals who have died, or apparently have died of smoking. This is not an issue currently open to debate.[94]

Bexon also dismissed the "freedom" and "rights" arguments so central to industry PR at this time: "Freedom and rights is not a relevant platform for smokers. It looks good when you say it fast but it does not stand up to aggressive debate."

Bexon's report is breathtaking in its candor and cynicism. It must be one of the most damning documents in the entire corpus of internal industry documents. The man is grimly realistic about the prospects for his industry, with the principal glimmer of hope being that smokers are addicted—meaning not just that it is hard to quit, but also that the urge to restart will continue for months or even years after any successful quit attempt. Bexon compares smokers not just to drinkers but *to*

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[92] Eastman Chemical International, "1969 Survey of Cigarette Smoking Behavior and Attitudes, vol. 1," 1969, CTRL No. 039073A, p. 12.

[93] Robert L. Bexon to ITL President Wilmat Tennyson and W. Sanders, "File Viking," 1985, CTRL No. 3784, p. 2 (emphasis in original).

[94] Ibid., pp. 2-3.

alcoholics: "Like alcoholics, smokers realize that they will always be smokers and can always fall of the wagon."[95]

This is a remarkable concession, coming as it does from a man who would rise to become President and CEO of Canada's largest cigarette maker: smoking is not like *drinking*, it is rather like *being an alcoholic*. Bexon elaborated on this point that most smokers do not smoke for pleasure; indeed, the smoking habit (he says) is rather more of an embarrassment, a process that, for smokers, "erodes their self esteem." People may begin in an effort to elevate their self esteem, but they are soon disappointed: "They do not get public/social reinforcement and their self perception is one step up from addicts." Smoking is regarded even by smokers as "a dirty habit—a filthy habit." Physical or sensory pleasures are not what smokers obtain from smoking; indeed such notions "do not even surface in the smoker's description of why he smokes. It is actually seen as an *unpleasant* sensory experience."[96]

Bexon admits that this "is not an attractive portrait . . . However it is important that we recognize what is happening to our industry":

> *if our industry is to survive* it must invest heavily in a range of positive, expensive and controversial activities in both the areas of products that give more desirable benefits than cigarettes and attitude modification. Even then we may not win.[97]

Indeed "without corrective action," he cautions, "I firmly believe that tobacco use in Canada will simply go away. . . . *unless we do something this industry will cease to exist*." Bexon was clearly aware of the sensitivity of his remarks, which is apparently why he wrote them out by hand, for which he apologized: "I apologize for the handwriting. I hope the reason for this is apparent."[98]

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[95] Ibid.

[96] Bexon to Tennyson and Sanders, "File Viking," 1985, CTRL No. 3784, p. 3 (emphasis in original). Robert Bexon began as an ITL sales rep in Ontario in 1975; he was soon thereafter promoted to Supervisor and then Manager of Marketing Information, following which he held the ranks of Consumer Research Manager, Creative Services Manager, and Marketing Planning Associate (1982-1985). Bexon was named ITL's Director of Marketing Strategy in 1985, Vice President for Marketing in 1995, and President and CEO in 2000. In 1997 he was hired by Brown & Williamson in the United States, makers of Kool, Viceroy and Raleigh cigarettes, as Senior Vice President for Marketing and Sales at Brown and Williamson, where he worked to help fulfill BAT's goal of becoming "the No. 1 tobacco company in the world."

[97] Ibid., emphasis in original.

[98] Ibid., emphasis in original.

Internal Agnotology and "Third Party" Denialism

One interesting aspect of cigarette-science denialism is the industry's *lying to itself*: the companies knew that not everyone would buy the deception, and worried about how knowledge of the morbid realities of smoking might impact corporate morale. Philip Morris in the U.S. censored the health information sent to employees by its insurance providers, for example, and worked also to suppress Merrell Dow's manufacture of nicotine replacement therapies (which it feared would cut into cigarette sales).[99] R.J. Reynolds included denialist messaging in its internal corporate newsletters and in lectures and brochures designed for sales personnel and staff. We also know that companies produced handbooks for their employees, explaining the "position" to be taken when confronted with unfriendly facts about smoking and health.

British firms were also involved in such internal policing. BAT in 1981, for example, produced an "Employee Handbook on Smoking and Health," offering a more "balanced view" of smoking and health than what employees might hear from the "active and skilled lobby of pressure groups" opposing smoking. And the central message was simple: "Despite extensive research, some of it initiated and carried out by the tobacco industry itself, there has been no scientific proof that smoking causes any diseases in humans." Reassurances are offered on multiple fronts, that moderns cigarettes are "vastly different" from those of earlier generations, for example, and that "the great majority of smokers do not die from lung cancer." Yes, carbon monoxide had been found in cigarettes, but this was not such a big deal, since "healthy individuals are well able to tolerate the effects of carbon monoxide in the atmosphere and from tobacco smoke." And as for smoking during pregnancy, rest assured: "the allegations are based on statistical associations." As for nicotine: "nicotine is not generally believed to present any problems for healthy smokers," especially since "Smoking is not an addiction, but is better described as a habit." As for "Should I work for a tobacco company?" a bit of fatalistic humor is invoked: "We have made that decision already."[100]

Rothmans International had a similar handbook (circulated to employees in 1990), describing the smoking-cancer link as "a statistical association" comparable to that between "reading ability in children and their height." The company insisted that "a statistical association alone is not enough to prove causation" and noted that "the vast majority of smokers do not get lung cancer and that some non-

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[99] On Philip Morris's censorship of health information sent to its employees, see Monique E. Muggli and Richard D. Hurt, "A Cigarette Manufacturer and a Managed Care Company Collaborate to Censor Health Information Targeted at Employees," *American Journal of Public Health*, 94 (2004): 1307-11.

[100] BATCo., "Employee Handbook on Smoking and Health," Jan. 19, 1981, Bates 105362977-2997.

smokers do. Epidemiology cannot explain that paradox." For these and other reasons "we do not accept that it has been scientifically proven that smoking causes disease. Our position is that more research is necessary . . . ."[101]

In Canada, we have examples of internal agnotology[102] even earlier. In 1969, for example, Imperial Tobacco drafted a document instructing its employees in how to think about smoking and health, urging their reconciliation to the fact that "Despite publicity campaigns that have attempted to link smoking with many diseases," the subject was still "a matter of scientific controversy." The document mentioned Cohen and Heimann's study from October 1963 in which it was claimed that deaths from all types of cancer, including cancers of the lung, were distinctly low amongst tobacco workers, despite having significantly higher smoking rates. ITL failed to inform its employees, though, that the coauthor of this report, Robert K. Heimann, was an executive in the American Tobacco Company, whose epidemiology had already been discredited in world medical literature. The handbook also failed to note that the report suffered from what is known as "healthy worker bias," the fact that sick workers leave the workplace, inflating the apparent average health of the working remnant. ITL was here feeding "junk science" to its employees, in an effort to enforce the denialist party line.[103]

Tobacco manufacturers used many other methods to make sure its employees or stockholders toed the line on tobacco. Rothmans and IMASCO both refused to allow shareholders' resolutions on smoking and health,[104] and BAT in 1991 printed yet another brochure instructing employees on how to answer questions about smoking and health. This last-mentioned brochure basically asked BAT workers to question the entirety of medical evidence linking smoking to harms—lung cancer, heart disease and emphysema, of course, but lesser-known impacts as well. The brochure challenged its employees to repudiate claims that "Smokers die younger" or that "Smoking is dangerous for pregnant women." The instruction in each instance was to deny all evidence of harm, as of all evidence of pharmacologic dependency or increased medical costs. Comparable instructions were given for how to respond to queries about addiction, the constituents in cigarettes, and so forth. The company even denied it was denying anything: "we

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[101] Rothmans International Tobacco (UK) Limited, "Tobacco Issues: The Company's View," Feb. 1990, CTRL No. 095273.

[102] Agnotology is the scholarly study of ignorance; see Robert N. Proctor and Londa Schiebinger, *Agnotology: The Making and Unmaking of Ignorance* (Stanford: Stanford University Press, 2007).

[103] Hill and Knowlton (for ITL), "Suggested Lead-In copy Related to Health Factor," March 4, 1969, CTRL No. RL8630.

[104] Cunningham, *Smoke and Mirrors*, p. 153.

do not deny that smoking is harmful; we simply believe that science has not yet proven whether it is or not."[105]

Tobacco manufacturers had already realized by the 1950s that claims of this sort were more convincing when coming from (seemingly) disinterested "third parties"; the effort was therefore made to have denials come from "independent" authorities who could ventriloquize the industry, typically for a sizeable fee. That was one reason research projects at so many universities were funded: CTR Special Projects were often granted to scientists who would deconstruct one or another aspect of the "cigarette hypothesis," for example, and CTR funding was often used as a kind of farm to generate a "stable of experts" for use in litigation.[106] Experts of this sort could then be trotted forth as "independent" experts, without such claims being tainted by seeming to come from an interested party. (Judge Kessler in her "Amended Final Opinion" from 2006 called this the "illusion of independence.")[107] Many such experts were paid handsomely for this service, and very often the payoff was not disclosed.

One remarkable example of the industry using the authority of "third party" experts can be found in ITL's 1980 effort to suppress a smoking cessation program at the Société d'électrolyse et de chimie Alcan Ltée at Saguenay/Lac St-Jean. Alcan was one of the largest employers in Canada, and had recently begun a campaign to educate its workers on the dangers of smoking. ITL upon learning of this set out to pressure the company—a major supplier of foils and metalized paper for cigarette packaging—to abandon or at least to soften this campaign. On November 14, 1980, ITL President Paul Paré sent Alcan President D. M. Culver a letter, expressing how "deeply disappointed" he was to find an "Anti-Tobacco Campaign" in a company with such long-standing relations with the cigarette maker. Paré complained that Alcan had apparently not consulted with any of the "resources or authorities which can and do cast serious elements of doubt" on the statements of anti-smoking groups; Alcan workers might well be suffering from "certain illnesses," but blaming smoking was "misleading" and "unfair" and inconsistent with the two companies' "long-standing corporate relationships."[108] Michel Descôteaux from ITL's Department of Public Relations met with Alcan's Vice President for Public Relations on November 20, 1980, to impress upon the metal manufacturer that barring smoking in the workplace could have dire

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[105] BAT "Smoking Issues: Claims and Responses," circa 1991, Bates 503102882-2944.

[106] The "stable of experts" metaphor for witness development is found in Jones, Day, Reavis and Pogue (for Reynolds), "Corporate Activity Project," Nov. 17, 1986, Bates 681879254-9715, tid/rrx95a00, p. 327.

[107] Gladys Kessler, "Amended Final Opinion" in *USA v. Philip Morris et al*., Sept. 8, 2006, online at: http://www.usdoj.gov/civil/cases/tobacco2/amended%20opinion.pdf, pp. 1330-1341.

[108] Paul Paré (ITL) to D. M. Culver (Alcan), Nov. 14, 1980, Bates 800800239-0240.

consequences for employee health and safety. Descôteaux cautioned Alcan that depriving smokers of the right to smoke could cause "irritability and aggressive behaviors" but also poor job performance, an increase in industrial accidents, and even "increased mortality from certain stress-related diseases."[109] Descôteaux shortly thereafter sent Alcan a long list of denialist references—including papers by Domingo Aviado, Theodor Sterling, Milton Rosenblatt, Philip Burch, Gio Gori, and others from the industry's denialist squad—while also failing to disclose that these "experts" were all on the industry's payroll.[110] Descôteaux also sent a report to Rothmans, RJR-Macdonald, Benson & Hedges, and the CTMC, commenting on how his Alcan intervention "could have the effect of reducing the importance of Alcan's anti-tobacco campaign relative to the company's other health promotion campaigns." Descôteaux was apparently satisfied with how this had turned out, noting that the door was now "wide open for discussions which might lead Alcan to take a position that is more 'compatible' with our interests." Descôteaux was also hopeful that the Alcan experience could help Canadian cigarette manufacturers "polish up our approach when the time comes to prepare the 'employer's kits'" detailing how employers should handle smoking in the workplace.[111] Descôteaux had suggested to Alcan a program of "moderation tied to smoking lower T&N products" and Alcan seemed to "see merit in that approach." Alcan also reassured ITL that the metal maker had "no intention of banning smoking in the workplace."[112]

Another notable Canadian example of using "third party" expertise dates from only a few years later, when the cigarette industry organized an effort to discredit evidence of harms from exposure to secondhand smoke. Two powerful epidemiological studies from 1981 had linked lung cancer to secondhand smoke

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[109] Detailed notes on this Nov. 20, 1980, meeting between Michel Descôteaux (ITL) and Jacques Gagnon (Alcan) are preserved in an ITL memo at Bates 500876735-6737, now in Reynolds' archives. Descôteaux cautioned Gagnon about the "irritability and aggressive behaviors that could arise" from depriving people of the right to smoke; he also mentioned "possible negative effects of tobacco deprivation on the performance of certain tasks"—and that smoking deprivation could even negatively impact health. Descôteaux provided Gagnon with documents suggesting that some of the diseases associated by smoking are "offset by increased mortality from certain stress-related diseases" and that tobacco deprivation in smokers could lead to "a decrease in job productivity which can lead to an increase in industrial accidents." The memo is apparently copied to Robert Gibb, Paul Paré, Norman A. Dann, and Jean-Louis Mercier.

[110] Michel Descôteaux (ITL) to Jacques R. Gagnon (Alcan), Dec. 22, 1980, Bates 800800256.

[111] Michel Descôteaux to Louis Boudreau, (Rothmans), C. Denis (Rothmans), C. Heide (Benson & Hedges), Fernand Leclerc (RJR-Macdonald), and Jacques LaRivière (CTMC), Dec. 22, 1980, Bates 800800260-0261; and for an English translation, Bates 800070359-0360.

[112] Norman A. Dann to Imasco Management Committee, "RE: Alcan Anti-Smoking Project," Nov. 13, 1980, Bates 800070361.

exposure, and by the mid-1980s this relationship was beginning to be certified by public health authorities—including the U.S. Surgeon General and the National Research Council of the U.S. National Academy of Sciences.[113] Cigarette makers saw this as a deep threat to their business: it was one thing for smokers to be killing themselves, but quite another to be killing non-smoking spouses, babies, colleagues in the workplace, bystanders, and other "innocents." The new science threatened to undermine the central ideological bulwark of the industry, that smoking was a voluntary act, an "adult choice."[114]

We get some sense of the urgency of this problem from Robert Bexon of Imperial, who in a 1987 memo stressed the need to "Prevent the escalation of the social debate to a widespread perception that smoking is a health risk to non-smokers." Bexon outlined a plan to improve the "image perception" of smokers, with a second phase of this operation being to "Ameliorate the perception of health risks associated with smoking." The first priority was to combat smoking restrictions in the workplace by getting science on the industry's side; the goal, as he put it, was to "pre-empt" the public health community and to "keep controversy open." Bexon knew that only 17 percent of Canadian smokers at this time saw secondhand smoke as "one of the most serious health hazards," and he clearly didn't want this number going any higher.[115]

To combat this new threat, cigarette makers responded by trying to stake out the high ground of freedom, recasting the "right to smoke" as very much like the right to free speech. Massive efforts were also organized to undermine the recent epidemiology. Denialist scholars were mobilized through the Special Projects branch of the CTR, but also through a new global "ETS Consultancy Program," tasked with discrediting the evidence linking secondhand smoke to cancer and other diseases. More than 70 scientists were enrolled in the ETS Consultancy Program, including 49 university-affiliated scholars and 21 scholars from private research institutions (or "think tanks"). In 1989 alone these consultants were sent to three scientific conferences (including one at McGill—see below), published 43 papers and three books in seven languages, gave over 1,100 media interviews, and

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[113] Takeshi Hirayama, "Non-smoking Wives of Heavy Smokers Have a Higher Risk of Lung Cancer: A Study from Japan," *British Medical Journal*, 282 (1981): 183–85; D. Trichopoulos et al., "Lung Cancer and Passive Smoking," *International Journal of Cancer*, 27 (1981): 1–4. *The Health Consequences of Involuntary Smoking: A Report of the Surgeon General* (Rockville: USDHHS, 1986); National Research Council, *Environmental Tobacco Smoke* (Washington, DC: National Academy Press, 1986).

[114] Brandt, *Cigarette Century*, pp. 279-315.

[115] Robert Bexon, "Beliefs About Health Implication," Feb. 9, 1987, CTRL No. MRPF3833, pp. 28-29.

signed ten affidavits in litigation—all denying any reality to harms from secondhand smoke.

Canada was the venue for a number of these denialist operations. On November 3 and 4, 1989, for example, 60 of the industry's ETS "consultant scientists" were paid to attend a symposium at McGill University to "neutralize" two forthcoming reports expected to show a causal link between secondhand smoke and lung cancer (one from the U.S. EPA and one from Walter O. Spitzer, head of Canada's Working Group on Passive Smoking). John Rupp from Covington and Burling, the law firm responsible for organizing the conference (which cost the Tobacco Institute upwards of $800,000), described the purpose of this "ETS Symposium":

> On November 3 and 4, 1989, approximately 60 of our consultant scientists from the United States, Canada, Asia, and Western Europe will convene for a private symposium devoted to ETS and risk assessment. The purpose of the symposium is to produce an authoritative monograph that will serve to neutralize two reports that are scheduled to be released near the end of this year - an ETS risk assessment that is being prepared by the U.S. Environmental Protection Agency and a detailed assessment of ETS health effects that is being prepared in Canada under Professor Spitzer's supervision.[116]

The conference was a stacked scientific deck; industry insiders commented on how uniformly the attendees had denounced the epidemiology linking secondhand smoke to bodily harm. One consultant characterized the conference as "preaching to the converted," and suggested even that "contrary viewpoints" might be aired in future conferences just to avoid the tedium.[117] The published volume was equally lopsided, though casual readers might never have smelled a rat. The book made no mention of tobacco industry sponsorship, apart from one single notice of a "tobacco industry grant" mixed in with a dozen other "co-sponsors." Publicity was guaranteed, though, by an aggressively marketed press release and "press kits" issued by the Tobacco Institute with the help of cigarette industry PR firms (Ogilvy

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[116] John Rupp (Covington and Burling), "Status Report," Sept. 27, 1989, Bates 2500048508-8515; and for expenses and fees, see Bates TIDN 0021302-1305. And for background: Monique E. Muggli, Richard D. Hurt, D. Douglas Blanke, "Science for Hire: A Tobacco Industry Strategy to Influence Public Opinion on Secondhand Smoke," *Nicotine & Tobacco Research,* 5 (2003): 303-14.

[117] Chris Collett to Ted Sterling, "International Symposium on Environment Tobacco Smoke, Montreal," Nov. 14, 1989, Bates 94348745-8752.

& Meyer and Burson Marsteller).[118] Two hundred health and science writers received the McGill conference proceedings, which were subsequently also used by cigarette manufacturers in legislative and regulatory submissions, letters to the editor, and numerous other media—without disclosing the industry's role in orchestrating what the Tobacco Institute called "the consensus views of 80 eminent scientists."[119] Cigarette makers were thereby able to infiltrate academia and corrupt public testimony, jamming the scientific airwaves with noise. Peer-reviewed scholarship in academic journals was also corrupted, as the industry financed scholars to dispute the best available evidence.[120] The strategy was simple, if costly and nefarious: if you don't like the science, make up some of your own.

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What is striking to this historian, who has spent over a quarter of a century studying tobacco and health in several countries and languages, is how similar the pattern of deception was in both Canada and the U.S. In both instances, we find misrepresentations to the public and before governmental bodies. We find the calculated use of "third party" experts to disguise the fact that a cigarette-friendly opinion has originated from the tobacco industry. We find research funded to create the appearance of caring about the safety of one's products. We find ridicule of scholarly and public health authorities trying to protect the public, and we find the marketing and sale of certain products with implicit assurances of safety, when the manufacturers knew such claims were untrue.

One remarkable thing revealed in the Canadian industry's internal documents is how tightly interlocked the Canadian cigarette enterprise was with its British and American counterparts. Canadian manufacturers used some of the same suppliers of flavorants, paper, cigarette making machines (Hauni, GD, Molins), and advertising companies (Saatchi and Saatchi); Canadian manufacturers often hired the same public relations agencies (Hill and Knowlton) and defense legal teams (Shook, Hardy and Bacon). The Canadians and the Americans sent

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[118] Donald J. Ecobichon and Joseph M. Wu, eds., *Environmental Tobacco Smoke: Proceedings of the International Symposium at McGill University, 1989* (Lexington: Lexington Books, 1990). TLT0150001-0390. And for publicity: Bates 2023546229-6233 and TIOK0017415-7416. And globally: Bates 300522762-2767 at 2766.

[119] Brennan Dawson (TI) to Betsy Annese (Reynolds) and Steve Parrish (PM), July 23, 1990, Bates TI13341775-1775. For "consensus views," see the Tobacco Institute's comments to the EPA at Bates 87653941-3999; and for further impacts, see Judge Kessler's "Amended Final Opinion" at: http://legacy.library.ucsf.edu/tid/fdp08h00/pdf, which points out that tobacco industry Defendants organized "at least four other similar ETS conferences: London in 1988, Brussels in 1989, Lisbon in 1990, and Athens in 1992."

[120] Deborah E. Barnes and Lisa A. Bero, "Why Review Articles on the Health Effects of Passive Smoking Reach Different Conclusions," *JAMA*, 279 (1998): 1566-70.

copies to one another of confidential memos, research reports, and newsletters intended only for viewing by industry insiders (often linked through BAT's research hub in Southampton).[121] Canadian manufacturers used many of the same denialist tactics, stressing the need for "more research" given the merely "statistical" nature of the link between smoking and cancer. The shared argument was typically that the evidence against smoking was shaky at best, but also—and here we skirt contradiction—that smokers were already well informed about the "alleged" hazards, possessing "common knowledge" to this effect. There was also the common idea that smoking was an "adult choice," and that any restriction on smoking in public places would compromise basic human freedoms. There was the perennial refrain that assertions of harms from smoking were based on "emotional propaganda" or "mere statistics" or "junk science."

What, though, can we say about the impact of such deceptions? The tobacco industry in many of its legal forums tries to argue that whatever the industry did had little impact on public actions or beliefs; people have long been aware of the hazards, which must mean that the industry's denials fell on deaf ears. Is there any truth to such claims? What can we say about the growth and obstruction of popular knowledge?

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[121] The Tobacco Institute's *TI Newsletter*, for example, was sent only to the industry's "member company management": the newsletter was "intended for readership in high level of member company management. It condenses and repeats the bad news along with the good and, therefore, its circulation must be carefully monitored." Recipients of this confidential newsletter included management of the leading Canadian tobacco companies: J. L. Mercier, R. M. Gibb and Michel Descôteaux of Imperial, Norman Dann and Paul Paré of IMASCO, R. H. Hawkes and Peter W. Bone at Rothmans, Christopher M. Seymour of the Canadian Tobacco Manufacturers Council, etc. See Kloepfer to Kornegay, Aug. 31, 1981, Bates TI47461515, which contains a mailing list that reads like a "Who's Who" of the global tobacco conspiracy. The *TI Newsletter* was to be sent only to "authorized" persons; the newsletter was not to be circulated "to anyone, even within the industry, who has not been approved already for the standard mailing list"; see Anne H. Duffin to Kelly Matthews, April 26, 1982, Bates TI47461537. Great efforts were expended to ensure that everyone on the mailing list was a "need to know" person (Bates TI47461539). Canadian manufacturers sometimes took orders from their global affiliates: Fernand A. Leclerc at RJR-Macdonald on Feb. 6, 1981, for example, wrote to Lester W. Pullen, describing strategies to be used to resist the Canadian Health Ministry's efforts to put carbon monoxide (CO) warnings on Canadian cigarette packs; Leclerc commented that his company just that day had received "a Winston-Salem position on CO revised by C. Nystrom that should constitute the basis of our approach in Canada" (Bates 500876746-6750).

Popular Knowledge and Ignorance of Tobacco Harms

Canadian tobacco manufacturers did not publicly admit that tobacco caused lung cancer or heart disease or any other deadly ailment until the close of the twentieth century. Prior to this time, in fact, they vigorously denied such effects. How did this impact popular knowledge?

Several different sources are available for gauging the history of popular understanding of tobacco hazards, the most important of which are scientific surveys of popular opinions. What do surveys reveal about what Canadians knew about the hazards of smoking? What can we learn about the history of popular opinion from statements made by the tobacco industry on this topic, and from other sources in the historical record?

Judging from historical survey data, the most important generalizations about popular knowledge of tobacco hazards are the following:

1. Prior to the 1960s most Canadians did not know—were not convinced, did not believe—that smoking could cause deadly diseases such as coronary illness and cancer.
2. With the publicity surrounding the Surgeon General's report of 1964 and further reports in the popular press, an increasing number of ordinary Canadians started to realize that smoking could cause death and disease, with a majority of adults coming around to this view in the 1970s.
3. Educated people have been more likely to recognize the hazards than people with less education.
4. Smokers have generally been less convinced of the hazards of smoking than non-smokers—by a significant margin.
5. Smokers of brands marketed as "filtered," "light" or "low tar" tend to be more conscious of cigarette-disease links than smokers of other kinds of cigarettes; they also, though, tend to be wrong in their view that filtered, low tar, or light cigarettes offer any genuine margin of safety (see #8).
6. Smokers have generally been profoundly misinformed about the number of cigarettes that can be safely smoked.
7. Even people who recognize the reality of cigarette hazards often rank such hazards low in the list of things they worry about—far lower than as recognized by medical professionals.
8. Many Canadians, even those convinced of the reality of tobacco hazards, have been falsely reassured by gimmicks such as filters, low-tars and "lights." As a result, while many smokers are willing to admit that smoking may be unsafe in general, they very often believe that the particular brands they smoke are "safer."

9. Many Canadians have been falsely led to believe that secondhand smoke poses no risk to life, a common claim of tobacco manufacturers until very recently.
10. Any effort to assess what people have known about the hazards of smoking must be clear about which particular hazards are in question. Lung cancer, macular degeneration, and spontaneous abortion have all been linked to smoking, for example, but people who know about one of these links may not know about some other.

Public opinion surveys reveal a fairly steady increase in popular knowledge of the most important hazards of tobacco use from the 1950s onwards, albeit neither so fast nor as complete as the industry's experts would have us believe.[122] And while it is true that the majority of Canadians today will recognize that smoking causes life-threatening illness, it would be wrong to project our current understanding into the distant past.

Change over time is crucial to take into account, but much also depends on precisely what kinds of questions are asked. When people are simply asked whether smoking is "harmful" in the abstract, for example, it has always been easy to get fairly broad assent. Probing a little further, however, we find that people often have unrealistic notions of the nature and severity of that harm. Smokers have been poorly informed about whether the danger is the same for different kinds of cigarettes (filtered v. non-filtered, for example) and different patterns of use (moderate vs. "immoderate" smoking, for example). People have also had inaccurate notions about what happens when you stop smoking—whether the danger persists, for example—and how much you have to smoke before doing yourself any harm. Many smokers believe that only "heavy" or "immoderate" smoking is dangerous, and a surprising number believe they can smoke for a while and then stop before it poses any real risk. Many smokers do not realize that the risk is cumulative, and that a small amount of damage is done to the body with each cigarette. Many people believe that smoking is only dangerous for certain kinds of people, not for everyone; and many people, even when recognizing a danger to others, do not feel this danger applies to themselves.

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[122] For surveys of popular knowledge of tobacco hazards in the United States circa 1980, see Matthew L. Myers et al., *Federal Trade Commission Staff Report on the Cigarette Advertising Investigation*, esp. Chapter III: "Consumer Knowledge of the Health Hazards of Smoking" (FTC: May 1981; Bates 500630393-0440), which concluded that 40 percent of smokers believed that "only heavy smoking is dangerous" and that half of all Americans felt that smoking was "merely a habit, not an addiction" (pp. 3-40 and 3-15); compare also Kenneth Warner 1986, *AJPH*, Bates TA81350-1412.

Surveys conducted by (or for) the tobacco industry and for public health agencies reveal how public attitudes toward "smoking and health" have changed over time:

- In 1954, Gallup poll found that 90 percent of Americans had "heard or read about" a connection between smoking and lung cancer. When this same group was asked whether they *believed* what they had read, fewer than half of those polled answered "yes." And smokers were even less convinced.[123] That same year, a study by the Canadian Institute of Public Opinion found that when asked whether smoking was "a cause of cancer of the lung," Canadians were less likely to say "yes" than their American counterparts: 25 percent vs. 41 percent.[124]
- In 1958, a Gallup poll found that when American smokers were asked "do you think that smoking is or is not one of the causes of cancer of the lung?" 33 percent answered "yes," with the remainder answering either "no" or "undecided." Only 28 percent of the smokers of unfiltered cigarettes answered "yes" to this same question.[125]
- A Canadian Facts Co. survey for ITL from 1958 found that when asked "which brand is safer," a smoker of filtered cigarettes "nearly always names his own brand." Smokers of filters were also "strongly convinced filters are safer than plain ends." This same poll found that "non filter smokers disagree." The "consensus" (of 72 percent of those with an opinion) was that "filters are better for your health than plain ends."[126]
- In 1962, a poll discussed at a meeting of executives from Hill and Knowlton, the TIRC, and Imperial Tobacco of Canada found that the number of those agreeing that smoking was connected with lung cancer had actually *fallen* since the late 1950s, from 55 percent to about 47 percent.[127]

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[123] George H. Gallup, *The Gallup Poll: Public Opinion 1935-71,* vol. 2 (New York: Random House, 1972), Bates 2072420455-0457. A good summary of polls from the 1950s and early 1960s is Gallup's "Trends in Public Attitudes on the Possibility of a Health Hazard in Cigarette Smoking," March 1964, Bates 01140982-1040, p. L4.

[124] *La Presse*, July 21, 1954.

[125] George H. Gallup, "Health Service Report Yet to 'Sink in' with Smokers: Little Change in Beliefs on Cigaret-Cancer Link in New Poll" (press release), Aug. 10, 1958, Bates TIMN0460713-0714.

[126] Canadian Facts Co. Ltd. (for ITL), "Study No. 7: Canadian Smoking Habits and Smokers' Attitudes," April 1958, CTRL No. MRS1015, pp. 18-20.

[127] Norman A. Dann (ITL), "Draft Notes on Meeting Held at Royal Montreal Golf Club, August 2, 1962," Aug. 15, 1962, CTRL No. RL9008.

- In 1968, in a study of smokers of "compact" (70mm) vs. king size cigarettes in Quebec, smokers of "compact" cigarettes were found to be far more likely to view smoking down to the very butt as "not dangerous." Smokers of compact cigarettes also thought shorter cigarettes were "safer" than longer cigarettes.[128] Also in 1968, a survey conducted by Chilton Research Services found that when American teenagers were asked whether they expected to be smoking five years hence, only 3 percent said "definitely," with another 12 percent answering "probably." The reality would prove closer to about 35 percent—which means that teenagers were profoundly misinformed about the grip of addiction, the seductiveness of tobacco, and their inability to quit.[129]
- In 1971, ITL's first Canadian Market Assessment (CMA) Tracking Study found only 48 percent of Canadian smokers willing to acknowledge that smoking was "dangerous to everyone." By 1987 this had risen to 79 percent.[130]
- In 1977, a study prepared for ITL by Market Facts of Canada Ltd. found remarkable ignorance among the smoking population Canada:
  (a) Only 10 percent of English-speaking smokers disagreed (somewhat or strongly) with the statement that "Filter tipped cigarettes are better for your health than are non-filter tipped cigarettes."
  (b) Only 22 percent disagreed that you were "more likely to die in a car crash than from smoking."
  (c) Only 30 percent disagreed with the statement that "Smoking cannot be all that dangerous because I know people who smoke two packs a day and are still going strong."
  (d) Only 44 percent disagreed that menthol cigarettes were safer than non-menthol.
  (e) Only 44 percent disagreed with the statement that "Only a small number of smokers suffer ill effects through smoking."
  (f) Only 45 percent disagreed that smoking was "not hurting me as long as I feel all right and show no signs of health problems."

  This same survey posed a similar set of questions to Francophone Canadians, and found roughly comparable gaps in knowledge.[131]

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[128] Canadian Facts Co. Ltd., "The Future of the Compact Cigarette, Ontario and Quebec, Fall 1968," Nov. 11, 1968, CTRL No. MRS5927, pp. 6-11.
[129] Daniel Horn, "Current Smoking," March 25, 1968, Bates 1005126450-6455.
[130] A. Chan, A. Porter and T. Smith (ITL), "Project Day," June 21, 1988, Bates 400089980, p. 1.
[131] Market Facts of Canada Ltd. (for ITL), "1977 Segmentation of the French and English Speaking Canadian Cigarette Markets," June 1977, CTRL No. MSDS828, pp. 35-40.

- Also in 1977, a survey of 1013 adult smokers prepared for Rothmans of Pall Mall (Canada) found that while many people were familiar with "tar" as undesirable in cigarette smoke, and were smoking "milder" cigarettes as a result, there was still "no evidence of any awareness of other possible harmful constituents such as gases." And menthol brands still carried "an unjustifiable aura of 'mildness'." Only 13 percent of Quebecers mentioned "cancer" when asked unprompted what might be wrong with smoking.[132]
- In 1978, a study of 50,000 Canadian schoolchildren (grades 3 to 13) conducted for the National Department of Health and Welfare found only 64 percent of regular male smokers recognizing that smoking caused lung cancer. The numbers were even lower for female smokers—less than 60 percent.[133]
- In 1979, only 30 percent of those questioned in an ITL poll agreed that "no quantity of cigarettes can be safely smoked per day."[134] Also in 1979, a BAT Southampton study found that among smokers who had never tried to quit and had no intention of doing so, fully 90 percent agreed there was "nothing wrong with smoking as long as a person smokes moderately." BAT's Project Libra found that 70 percent of all smokers agreed that "mild cigarettes are safer than strong cigarettes" and that "Low Tar Cigarettes are Safer than Other Cigarettes."[135]
- In 1980, Robert Bexon of ITL reported with satisfaction on how smokers very often found it hard to quit: "Fortunately for the tobacco industry," he noted, while 41 percent of all Canadian smokers had tried to quit, few of these managed to quit even for six months: not even two percent. Bexon also reported that 44 percent of all smokers of "mild" cigarettes thought low tar cigarettes were "less harmful to your health."[136]

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[132] Contemporary Research Centre Ltd. (for Rothmans of Pall Mall), "Report of a Survey on Current Consumer Beliefs and Attitudes Towards Smoking and Health and their Effect on Smoking Behaviour," March 1977, CTRL No. 039121A, pp. 16, 45. This survey noted "an indication that francophones are less convinced of the harmfulness of smoking"; regional analyses also confirmed "the lesser knowledgeability of the Quebec smoker" (pp. 42-45). Unprompted responses to the question "What is it in cigarette smoking that is supposed to be hazardous to health?" are reported on pp. 43 and 45.

[133] "Smoking Habits of Canadian School Children," Jan. 1, 1981, CTRL No. 0008503, p. 21.

[134] P. Cadieux, "Smoking and Health," March 3, 1988, CTRL No. MRPF697.

[135] M. Oldman, "Cigarette Smoking, Health, and Dissonance (Project Libra)," Dec. 18, 1979, CTRL No. MSDS817, pp. 80-82.

[136] Robert Bexon, "R&D/Marketing Conference: New Brand Development – 'Post-Lights'," 1980, CTRL No. gbm42a99, pp. 4, 13.

- In 1986, 23 percent of Canadian "starters" (new smokers) said there was "no relationship" between smoking and health. Only about half of these starters realized that smoking was a "major factor" in heart disease, and only 55 percent agreed that smoking reduced life expectancy.[137]
- In 1988, ITL's confidential Project Viking showed that the most pro-smoking segment of Canadian youth, the so-called TGIF or "live for today" segment aged 13 to 24, was also the least likely to keep up with news or current affairs. Viking surveys also showed that while over 90 percent of smokers regarded smoking as somehow "related" to lung cancer, only 71 percent thought smoking was a "major factor." Smokers were even less informed about other diseases: only 48 percent considered smoking a "major factor" in heart disease, for example.[138]
- Project Viking also showed that smokers were significantly less knowledgeable about smoking than non-smokers: only 57 percent of smokers knew that emphysema was "related to smoking," for example, vs. 76 percent for non-smokers. Only 41 percent of smokers believed smoking was a "major" factor in emphysema.[139] Roughly one-third of all Canadians were found to believe "the tobacco industry can made a plausible case to refute anti-smoking claims"; and "a majority (or at least a plurality) is ready to accept the word of an industry executive."[140]
- In 1988, about one in five Canadian smokers still thought that smoking was either not dangerous at all or dangerous only for "people who smoke a lot or who are not in the best of health."
- A 1995 study by Statistics Canada found that "half of all households in Canada allowed smoking in the house around children."[141]

Surveys cannot always of course be taken at face value; when people agree to a pollster asking whether smoking causes lung cancer, for example, they may be guessing, or trying to please the interviewer, or simply trying to sound "smart." The apparent "knowledge" of smokers and non-smokers alike is therefore very

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[137] Creative Research Group Ltd., "Project Viking: Volume I: A Behavioural Model of Smoking," Sept. 22, 1986, CTRL No. MRL590, pp. 23-25. Even among smokers trying to quit, 37 percent said smoking had no relationship to health (p. 46). Many smokers had unrealistic views about the power of medicine: over half of those questioned, for example, thought that a cure for cancer would be found within the next ten years (p. 88). Project Viking recognized that Canadians at this time were starting smoking, on average, at about age 14.

[138] Creative Research, "Project Viking – Wave 2," Sept. 1988, CTRL No. MRL458, p. 55.

[139] Ibid., pp. 53, 79.

[140] Creative Research Group, "Project Viking – Wave 2," Oct. 6, 1988, CTRL No. MRL660.

[141] "Half of Homes with Children Allow Smoking," *Evening Telegram*, June 12, 1998.

often inflated. Brown & Williamson in the late 1960s asked a number of Los Angeles residents whether smoking causes "diphesmia," for example, and found 27 percent of smokers and 50 percent of non-smokers answering "yes"—even though there is no such disease. Tobacco industry PR men use this story to suggest the gullibility of the public,[142] but it also reveals a weakness in questionnaires that ask "do you believe" or "do you know . . . ?" with the expectation being a simple "yes" or "no."

One way to get around this difficulty has been to ask open-ended or *unprompted* questions, typically of the form: "what do you think is wrong with smoking cigarettes?" or "what kinds of diseases do you think one might get from smoking?" Surveys of this sort show a much lower level of awareness of the threats posed by smoking. In 1994, for example, a poll by the Environics Research Group Ltd. for the Canadian Council on Smoking and Health revealed the public's "shocking lack of awareness" of the magnitude of health harms from smoking:

> When respondents were asked to name, without prompting, the health hazards of smoking, only 2 in 10 mentioned heart disease, only 4 in 10 mentioned lung cancer, and only 3 in 10 mentioned cancer in general. . . . A large majority of respondents (86%) underestimated the percentage of lung cancer cases that result in death. Only 14% of the respondents were aware that more than 85% of lung cancer cases are fatal.[143]

Another problem has been that even after learning to associate lung cancer and heart disease with smoking, many people still do not know about risks from less well publicized cancers, such as cancers of the kidney, bladder or esophagus. This has been sometimes even been a problem for distinguished physicians. As recently as 1987, Dr. John Jeffery, Chairman of the Kidney Foundation of Canada's National Medical Advisory Board—and a distinguished kidney transplant specialist—did not know that smoking could cause kidney cancer. Jeffery's foundation was criticized for appointing ITL's Paul Paré as a corporate fund-raiser, which critics linked to Jeffrey's ignorance.[144] If knowledge of smoking causing kidney cancer was not even "common" enough to reach a leading physician at the Kidney Foundation, how can we expect non-specialists to have had such knowledge?

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[142] "Trace Outbreak of Diphesmia to Anti-Smoking Absurdities," *United States Tobacco Journal*, Nov. 5, 1970, Bates502454659.

[143] Canadian Council on Smoking and Health and Heart and Stroke Foundation of Canada, "Public Knowledge of Tobacco Hazards--Highlights," Jan. 1, 1995, CTRL No. 0101766.

[144] Kim McLeod, "Doctor Admits He Made Error," *Edmonton Journal*, Jan. 13, 1987, D560335.

Tobacco industry insiders have long kept a close watch on what smokers do and do not know. Robert Bexon in 1987 surveyed recent studies on popular knowledge, for example, and found only 79 percent of smokers agreeing there was "no doubt that cigarette smokers are more likely to contract cancer than are non-smokers." Only 81 percent agreed that "smoking during pregnancy is potentially harmful to the unborn baby," and only two smokers out of three realized that the life expectancy of a smoker was less than that of a non-smoker. Smokers were even less able (or willing) to apply such risks to themselves: among eight diseases known (to medical scholars) to be caused by smoking only one—lung cancer—was recognized as being of "personal concern" to a majority of smokers. And only lung cancer was recognized as being for which a link to smoking was considered to be a "major factor." Most smokers did not know that smoking was a major cause of emphysema (46 percent knew), cancer of the mouth (41 percent knew), stroke (22 percent), hardening of the arteries (17 percent) or kidney disease (2 percent). Smokers were less well informed than non-smokers on nearly every topic having to do with disease causation. The only exception was cancer of the oral cavity. Smokers here appear to have been better informed than non-smokers, perhaps because they cannot help but know they are pulling poisons into their mouths.[145]

An interesting pattern revealed in the industry's surveys is that smokers tend to regard the particular brand or type of cigarette they smoke as "safer" than other brands. A 1969 survey of 785 smokers in Ontario and French Quebec for ITL made this clear, finding that "smokers of the longer lengths believe that their lengths are safer, and smokers of the shorter lengths believe in the opposite view."[146]

Even today, many Canadians are in the dark about some of the less-talked-about dangers from smoking. Most Canadians don't know that smoking can cause stroke, for example, or vascular degeneration requiring amputation, or that most lung cancers prove fatal. Most smokers don't know that smoking causes cancers of the pancreas, bladder and stomach. Most by now seem to know that smoking can cause lung cancer and heart disease, but few know anything about the less common illnesses caused by smoking. They don't know about the damage they are doing to their stomach or their eyes, or that smoking is a significant cause of spontaneous abortions. They know that most smokers gain weight after quitting, but they don't know that about a third actually *lose* weight.[147] Most smokers don't know that secondhand smoke shows up in breast milk, or that smoking causes

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[145] Robert Bexon, "Beliefs about Health Implication," Feb. 9, 1987, CTRL No. MRPF3833.
[146] Canadian Facts Co. Ltd., "A Memorandum on the Effect of Cigarette Lengths for IT Sales Ltd.," 1969, CTRL No. MRS2729, p. 4.
[147] *St. Catharines Standard*, Jan. 14, 1987.

SIDS (Sudden Infant Death Syndrome). Smokers rarely have any solid idea of the chemicals in cigarette smoke; most will have heard of "tar" and nicotine, but few know anything about the gas phase of cigarette smoke containing cyanide and other poisonous vapors.[148] Very few know that cigarette smoke contains the radioactive isotope polonium-210, or that cigarette smoke is the most common way most Canadians will be exposed to deadly radioactivity. BC Health Minister Joy MacPhail in 1998 observed that "Consumers get more information from a can of insect killer than they do from a deadly product they are expected to use internally."[149]

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Statistics, as the saying goes, is suffering with the tears wiped away. I've canvassed surveys of tobacco knowledge, but we should not forget that behind such numbers are people with real sufferings and, quite often, poorly informed views on the nature and severity of harms from smoking. This is relevant for our topic, because but there are in fact other sources of information that can be used to shed light on the history of popular knowledge (and ignorance), if only by way of illustration. Tens of thousands of letters to and from ordinary smokers are preserved in the online Legacy Tobacco Documents Library, for example, and many of these are from Canadians. Many of these letters express clear ignorance of tobacco hazards; here are some typical examples:

- On January 5, 1954, a Toronto man wrote to RJ Reynolds, calling the cancer theory "a falsity." This same man later wrote to the company again in 1957, expressing a similar opinion.[150]

- On October 12, 1963, a North Vancouver man wrote to say that while he was a bit "scared" by the lung cancer propaganda, he was also convinced that a cigarette "relieves tension, lets me better concentrate and think, and increases my creativity."[151]

- On July 22, 1969, a Vancouver man wrote that despite having smoked Camels "for over forty years" he was nonetheless "in fair health with no trace of cancer." He also felt that "without this fine flavoured germ killer

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[148] "Project Day – Exploratory Phase in Edmonton," Sept. 6, 1988, CTRL No. RD140043.
[149] "B.C. to Force Tobacco Industry to Disclose Toxic Ingredients and All Health Dangers," Press Release, Jan. 19, 1998, Bates 2075169308-9310.
[150] Bates 502450711.
[151] Bates 500819489.

in my system, I might have died years ago of one of the diseases which have taken so many of my non-smoking friends."[152]

- On November 12, 1994, a Toronto man wrote to Reynolds, endorsing the company's claims for the "value of tobacco to Alzheimer patients – or in postponing Alzheimer's."[153] This letter is interesting insofar as it buys into the now-discredited theory that smoking helps prevent Alzheimer's. Dozens of scientific papers from the 1960s through the 2000s claimed to have found such a protective effect, which we now know was an artifact of the industry's sponsorship of "friendly research." Meta-analyses have shown that after controlling for industry affiliation of the authors of such studies, the reported protective effect entirely vanishes. Excluding industry-collaborative work reveals precisely the opposite correlation: smoking is actually associated with a *higher* risk of Alzheimer's.[154] So here in microcosm is the industry's impact on medical integrity, a clear skew of science. The tobacco industry's long-standing effort to jam the scientific airwaves with noise has born this fruit: ignorance amongst ordinary smokers and distortion of even peer reviewed literature.

- On December 9, 1985, a Toronto man wrote to Reynolds that "several years ago a team of Harvard medical specialists stated in an official report that moderate smoking is actually good for you . . . ." This same writer complained about the "ridiculous" price of cigarettes in Canada: "That's this damned socialism up here."[155]

- In 1991 a Calgary man wrote to Reynolds, urging the company to "go after" alcohol, given that alcohol "kills more people" and "much quicker" than tobacco—adding "You would think that Goebels has come back to life when you see all of this propaganda against smoking tobacco." This man clearly didn't believe there was anything wrong with exposing children to cigarette smoke: "I have four beautiful daughters - youngest 30 yrs. of age and not one of my daughters has Cancer yet I smoked 1 pack of cigarettes daily when they were growing up at home."[156]

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[152] Bates 500340228-0228A.
[153] Bates 512720935.
[154] Janine K. Cataldo et al., "Cigarette Smoking is a Risk Factor for Alzheimer's Disease: An Analysis Controlling for Tobacco Industry Affiliation," *Journal of Alzheimer's Disease*, 19 (2010): 465–80.
[155] Bates 505488544-8548.
[156] Bates 517523977-3982.

- On January 4, 1999, a boy from Ontario wrote to Reynolds as part of a school project: "Hello, I am Jared Edwards. I live in Ontario and I am 12 years old. I am writing to you about Joe Camel. My opion (sic) about Joe Camel is that he is a great Mascot. Not to mention you don't use camels as mascots a lot. I like Joe Camel because he's on mad magazines, and he Wares (sic) cool sunglass. Sincerely, Jared Edwards."[157]

Not all letter writers were friendly: on June 25, 1985, for example, a man from the Essex County Lung Association in Windsor, Ontario, wrote to dispute Reynolds' claim that there was "no scientific evidence proving that cigarette smoke causes disease in non-smokers."[158] It is common to find such criticisms in these archives, albeit not so common as writers skeptical of what "doctors" or "government officials" are saying. In other words: there is *a mix of conflicting opinion* ignored when we presume "common knowledge." It is also important to realize that when Reynolds wrote back to these people, the response invariably included the denialist routine:

> Despite opinions and charges to the contrary, there is little evidence, and certainly nothing which proves scientifically, that cigarette smoke causes disease in nonsmokers. This is not merely the wishful thinking of a tobacco company. It is a statement supported by the findings and views of highly respected independent scientists . . . .[159]

The only "independent scientist" mentioned in this particular letter was Ragnar Rylander from the University of Gothenburg; what Reynolds failed to mention, though, was that Rylander was a long-standing cigarette industry grantee. Indeed, here was a man whose undisclosed collaboration with the industry would later become the principal stimulus for the University of Geneva's decision to bar all academic contact with cigarette manufacturers.[160]

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[157] Bates 524107037. This letter is part of a collection of letters sent from a 7th grade class, most of which are critical of Reynolds' ads.

[158] Bates 505436074-6077.

[159] This same passage appears in multiple Reynolds letters to ordinary smokers, including Canadian smokers; see, for example, Bates 505436065, 504686036, and 513888795.

[160] On the "Rylander Affair," see http://senate.ucsf.edu/townhallmeeting/RylanderAffair.pdf

Part of the significance of popular ignorance of tobacco harms stems from the fact that most smokers begin smoking in their young teen years. Young teenagers do not yet have the maturity to make life or death decisions, and by the time they do have this capacity they are often addicted. The tobacco industry has long realized this asymmetry, and capitalized on it. What can we say about the history of tobacco industry marketing to youth in the Canadian context?

Marketing to Youth

The cigarette industry for decades has reassured the public that it does not market to youth—and even says that it has never done so in the past. Imperial Tobacco in a press release issued in December of 1999, for example, made this claim:

> We do not try to influence anyone of any age to take up smoking. Our marketing and promotional efforts are directed solely toward influencing smokers of legal age (as determined by government) to choose our brands over those of our competitors.[161]

In June of 2000, in testimony before the Standing Senate Committee on Energy, the Environment, and Natural Resources, ITL president and CEO Robert Bexon repeated this claim:

> We have never targeted youth. I must put that out again. I will leave the documents that prove it. We have never targeted underage smokers and I want that on record.[162]

Here again, from Imperial Tobacco's 2000 "Master Document":

> We do not target children. In fact, we do not advertise tobacco products to anyone in Canada—it is against the law.[163]

Despite such public protests—and there are many—the archival record makes it clear that Canadian cigarette makers have long tried to capture what they call the "young" or "youth market." Tobacco makers in fact have many different terms for this market: *starters*, *young starters*, *triers*, *new triers*, *learners*, *new smokers*, *pre-smokers*, *young Canadians*, *novices*, *rookies*, *first time smokers*, the *young adult*

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[161] ITL Press Release, Dec. 1999, cited in CTRL No. uxg61a99.

[162] Robert Bexon, testifying before the Standing Senate Committee on Energy, the Environment and Natural Resources, June 2000.

[163] Don Brown, Vancouver Board of Trade, Oct. 1998. (check, can't be right).

franchise, *tomorrow's cigarette business*, *fledglings*,[164] even *replacement smokers*. A search of the Canadian industry's archives for the term "youth market" returns hundreds of documents, as does a search for "starters" (1780 documents), "learners" (45 documents), "young smokers," and so forth.

Hundreds of documents illustrate this interest in selling cigarettes to kids. Imperial Tobacco in 1979, for example, devised a "media plan" to advertise its du Maurier and Player's brand, both of which had high "starter numbers"—the proportion of beginning smokers choosing this cigarette. Four different "target groups" were distinguished: ages 12 to 17, 18 to 24, 25 to 34, and the elderly crowd at 35 and older. Each of these target groups was assigned a different numerical "weight," according to its importance for Imperial's advertising campaign. In the plan for Player's, for example, the youngest group (12 to 17 year-olds) was given a weight of 1.0, whereas persons aged 25 to 34 were given a weight of .7 and the 35-and-over crowd was ignored altogether (given a weighting of 0.0, in other words). Teenagers were clearly a prime target for Imperial, a priority also expressed in the expectation that while most new users would be "switchers," some non-trivial percentage would be "starters"—meaning people who had never before smoked.[165]

This push to attract "starters" is clear from other internal documents of the industry. In 1984, for example, Robert Bexon, head of ITL's marketing department and later President and CEO of the company, listed his last of three "Strategies" to revitalize the company in the form of this imperative:

> Initiate projects to insure [sic] the continued uptake of tobacco products by young Canadians.[166]

Keeping the youth market was one reason cigarette manufacturers fought so hard against any and all efforts to limit advertising. Cigarette makers knew they needed to create attractive role models for youngsters, and knew that the loss of advertising would mean the loss of such models and therefore the loss of "experimentation" (with cigarettes). Robert Bexon commented on this in a 1984 discussion of the "Formation of New Business—Starting," pointing out that the "withdrawal from broadcast media" had created "less and less positive

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[164] "Fledglings" is Robert Bexon's term; see his note to Wayne Knox, "Strictly Confidential," Nov. 20, 1984, CTRL No. MRPF3804.

[165] ITL, "Fiscal '80 Media Plans: Phase 1," March 1, 1979, Bates 202345172-5352, pp. 19-22. The "young skew" of the marketing plan for du Maurier reflected, according to company marketing experts, the "large amount of starters duMaurier receives."

[166] Robert Bexon to Wayne Knox, "Strictly Confidential," Nov. 20, 1984, CTRL No. MRPF3804.

information" about smoking for young Canadians. "Pre-smokers" were relying more and more on "anti-smoking information," with only personal acquaintances—rather than advertising images—as models. Bexon proposed (as "a significant priority") finding ways to provide "more favorable images of honest benefits of tobacco use." Quitting was clearly a worry, but the bigger problem was how to keep attracting starters: "Doing something about starting is the most important priority for the long term." Hence this problem, to combat "declining rates of starting": "How can we make smoking financially accessible to the young starter?" The hope was to design new products to help young smokers ("fledglings") "throughout their smoking career."[167]

Youthful imagery—and a corollary disregard for the aged—was also important for how cigarette marketing departments interpreted trends in smoking fashions. One reason menthols were never so popular in Canada, for example, was their association with what cigarette marketers called "older femininity." Robert Bexon in 1984 traced Canada's falling market share for menthols to their identification with "an unacceptable level of older femininity"; he also linked this to distaste for "what has so elegantly been described as 'morbidity'—illness related use." Menthols carried an implication of "smoking and health moderation"—a desirable feature—but apparently not enough to overcome this "unflattering" image of "older female" and historical associations with "occasional use during illness."[168]

Youth has long been regarded within the industry as a crucial market target. In the United States, R.J. Reynolds as early as 1927 urged its sales force to be aggressive in this realm: "School days are here. And that means BIG TOBACCO BUSINESS for somebody. Let's get it. -- and start after it RIGHT NOW."[169] Reynolds was later (in 1973) quite explicit about the value of kids to its future survival and prosperity:

> Realistically, if our Company is to survive and prosper, over the long term, we must get our share of the youth market. In my opinion this will require new brands tailored to the youth market; I believe it unrealistic to expect that existing brands identified with an over-thirty "establishment" market can ever become the "in" products with the youth group. Thus we need new brands designed

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[167] Robert Bexon, "The Formation of New Business—Starting," in Bexon to Knox, "Strictly Confidential," Nov. 20, 1984, CTRL. No. MRPF3804.

[168] Robert Bexon, "R&D/Marketing Conference," June 1984, pp. 44-47. Bexon here noted that menthols accounted for about 30 percent of all cigarettes sold in the U.S., vs. only 6 percent for Canadians.

[169] R.J. Reynolds, "School Days are Here," Sept. 9, 1927, Bates 502399083-9085.

> to be particularly attractive to the young smoker, while ideally at the same time being appealing to all smokers.[170]

The whole point of the Joe Camel campaign, launched by Reynolds in the late 1980s, was to attract the very young, using a "fuzzy camel" mascot developed by French marketers in the 1970s. A Reynolds memo from February 7, 1974, observed that:

> the French advertisement for Camel Filters is a smash. It would work equally well, if not better, for Camel Regular. It's about as young as you can get, and aims right at the young adult smoker Camel needs to attract.[171]

Reynolds marketers shortly thereafter commented on the importance of capturing this younger crowd:

> To ensure increased and longer-term growth for CAMEL FILTER, the brand must increase its share penetration among the 14-24 age group which have a new set of more liberal values and which represent tomorrow's cigarette business.[172]

In Canada, we have documents showing tobacco executives becoming quite upset when teenagers were found to be smoking less than hoped. ITL's Robert Bexon in 1984 commented on how "disconcerting" it was that the industry was "forming fewer new smokers" than in the past. "Even more disconcerting" was the fact that

> the incidence [of smoking] among young females (15-19) is in decline, and the buoyancy we had experienced will not be a factor in the future. Not only are they starting less, young smokers who do start are quitting.[173]

This was clearly bad news for the tobacco trade, albeit a phenomenon not well understood given "the prohibition on research among young consumers."[174]

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[170] Claude E. Teague, Jr., "Some Thoughts about New Brands of Cigarettes for the Youth Market," Feb. 2, 1973, Bates 502987357-7368.
[171] Dana Blackmar to Rick McReynolds, "French Camel Filter Ad," Feb. 7, 1974, Bates 502303940-2940.
[172] J. Hind (Reynolds) to C. A. Tucker, Jan. 23, 1975, Bates 505775557.
[173] Robert Bexon to Wayne Knox, "Strictly Confidential," Nov. 20, 1984, CTRL No. MRPF3804.
[174] Ibid.

Targeting kids became more urgent in the 1970s and '80s, when the average age of those starting smoking dropped from its earlier position in the high teens to around 13 or 14. This created new market opportunities, and a new urgency to capture this vital younger market. Competition for teenagers became more intense, but several companies also realized the value of increasing the *overall size* of the youth market. This is clear from the goals of ITL's Project Viking from 1985, the goal of which was to deploy propaganda methods to counter "anti-smoking publicity in the media."

Imperial's Project Viking had two components. The first was *Project Pearl*, directed at "expanding the market, at very least forestalling its decline" by targeting "Pressured" and "Disease-Concerned smokers groups" with messages of reassurance. A second component was *Project Day*, the goal of which was to introduce new products that would help "delay the quitting process." So while Project Pearl was to find a "public relations solution to the industry's problems," the goal of Project Day was to find a "product solution" to the industry's problems, including nicotine-delivery devices with reduced sidestream smoke, enhanced nicotine, or otherwise altered deliveries. (*Project Visa* targeted reduced sidestream capacities, for example, while *Project Saturn* involved flavor modifications.).[175] One Project Day document characterized the intended cigarette as being "a tobacco combustion product which gives a nicotine enhanced condensate with low biological activity."[176] Another stressed the need to keep up nicotine deliveries: "We must ensure that smoke nicotine is adequate for consumer 'satisfaction,' and , in the event that compensation becomes an issue, we must be able to demonstrate that the consumer does not overly compensate."[177]

We often hear about surveys indicating some fraction of the population considering smoking as "risky" or "dangerous," but this was also something easily exploited by the companies. Cigarette makers recognized the desire of kids to become adults, the sense of risky adventure or naughty transgression; and R.J. Reynolds in the U.S. once astutely characterized smoking behavior as "acceptable rebellion."[178] But Canadian manufacturers also recognized the utility of playing to this youthful, rebellious spirit. In 1957, when Rothmans of Pall Mall was preparing a series of lectures to present to its sales personnel, they relied on the following assessment of how smokers first begin smoking:

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[175] Creative Research Group, Ltd. (for Imperial Tobacco Ltd.), "Project Viking: Volume I: A Behavioural Model of Smoking," Sept. 22, 1986, CTRL No. MRL590.

[176] A. Chan, A. Porter and T. Smith, "Project Day," June 21, 1988, Bates 400089980, p. 7; Project Day's goal was also expressed as being to achieve "maximum nicotine : tar ratio" (p. 10).

[177] "Project Day Marketing Brief," 1991, CTRL No. RDI5308.

[178] R. Dunn, "Camel and the Hollywood Maverick," 1986, Bates 515606728-6729.

> For many—especially younger people and some older beginners—smoking is a *daring* act. There is the quality of playing with fire, taking a chance, the thrill of venturing into the forbidden. Smoking cigarettes shows too that one is *liberated*; the achievement of adult status is proved by smoking, and adult status means that one is free to do many things previously denied. The feeling is "I can do as I please now; I'm old enough to smoke". . . . Smoking is a particularly potent symbol for adolescents. It signifies adulthood with its powers and privileges; and since parents often forbid it (and certainly don't encourage it), it serves as a weapon of rebellion . . .[179]

Imperial Tobacco also recognized this appeal of rebellion:

> Typically the young beginner starts "behind the barn," defying adult disapproval, selecting the brand that is the "in" thing with his gang. Indeed it might be hypothesized that it is largely adult disapproval that incites youth to start smoking as a gesture of emancipation, and since youth typically feel that only old people die anyway, long term health threats are not very powerful deterrents.[180]

Youth targeting can also be seen in market segmentation studies. "Youth Target 1987" was a study conducted for RJR Macdonald by Creative Research Ltd., analyzing the smoking habits of 15 to 17 year olds, dividing these into subgroups such as "insecure moralists," "big city independents," and "tomorrow's leaders." The segment identified as the one most likely to smoke was the TGIF (Thank God

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[179] The passage is from "Cigarettes, Their Role and Function," a 1952 study for the *Chicago Tribune* by Social Research, Inc., cited in Rothmans' "Sales Lecture No. 11 – Motivational Research," Oct. 1957, CTRL No. 92212. The Van Dyk Tobacco Co. later used this same body of research as part of its consideration of whether to enter Canadian markets; Van Dyk's rationale for exploring "Motivational Research" was explained by company president Hans Lehman: "we are at the point of diminishing returns as far as increasing share of present markets is concerned. However, in spite of this, we must find some way to grow. Therefore, back in 1957, we made a detailed study of the different ways in which we could expand. Of all the proposals considered, the idea of invading a new market area seemed to make the most sense. After, a quick trip to Canada and a general appraisal of the cigarette market there, I became convinced that our best move might be to start a Canadian subsidiary"; see "Consumer Motivational Research," June 1961, CTRL No. MRS14796.

[180] Canadian Facts Co. Ltd. (for Imperial), "Memorandum on Export A," Jan. 1, 1966, CTRL No. MRS3102.

it's Friday—aka "Underachievers") group, said to enjoy hard rock music (like AC/DC) and to "live for the moment."[181]

One particularly disturbing aspect of this youth targeting is that tobacco manufacturers knew that the youngest smokers were also those least concerned about their health. Imperial Tobacco in 1982, for example, divided its market targets into categories like "Addicts" and "Weight watchers," but also explored different segments ranked by age, finding that health concerns were weakest among young smokers aged 15-19:

> health concerns are proportional to age as they increase parallelly (15-19 years old: 34% versus 65+ years old: 60%). . . . the recognition of other negative aspects of smoking [apart from cough, etc.] is low when young, highest between 30 and 40 years old, and low again after 40 years old. Also, concerns about tar and nicotine content increase with age (15-19 years old: 31% versus 65+ years old: 53%.[182]

The significance of the tobacco industry's marketing to kids is that it undercuts any claim that the "decision to smoke" is a choice made freely by well-informed adults. It generally is not. Smokers typically have their first cigarette at age 12 or 13, and become addicted shortly thereafter. Addiction compromises a smoker's ability to choose freely, and the fact that smokers start as young teens means that by the time they reach maturity they are already in the grip of a powerful addictive drug.

Product Deception and Nicotine Manipulation

Denial was only one of many methods of used by cigarette makers to achieve what they often called "health reassurance." In the 1930s and '40s, cigarette makers often made extravagant claims for a particular brand being "milder" or "easier on your throat." "More doctors" were said to smoke Camels, and L&Ms were hailed as "just what the doctor ordered"; and similar slogans were published for many other brands.[183] Toasting was supposed to remove poisons from tobacco (just as fire preserved meats or sterilized medical instruments), and king sizing was supposed to "travel the smoke further," purifying it from

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[181] Creative Research Group Ltd. (for RJR Macdonald), "Youth Target 1987," CTRL No. 0049918.

[182] Gilles Archambault (ITL) to P. Perger et al. (including Bexon), "Matinee Extra Mild Meeting," Dec. 1, 1982, CTRL No. MRCF2680.

[183] The *Canadian Cigar and Tobacco Journal* in 1899 boosted smoking as "preventive of pulmonary diseases"; see Rob Cunningham, *Smoke and Mirrors: The Canadian Tobacco War* (Ottawa: IDRC Press, 1996), p. 33.

dangerous compounds. Brand names often carried this message of health reassurance: tobacco was sold with brand names like "Athlete" or "Red Cross" or "Sportsman," with slogans often assuring that a particular brand incorporated "the purest form in which tobacco can be smoked" (Sweet Caporals) or "will not affect the throat" (Craven A's boast from 1951). Nothing was left to chance, and even the colors used on cigarettes packs were vetted for their health implications—as perceived by potential smokers. Imperial Tobacco in 1968, for example, rejected "cranberry" as a color for its Du Maurier packaging, fearing that this color might be "suggestive of the health hazards in smoking."[184]

Another method of reassurance involved the promise of honestly supporting research into "smoking and health." Support for research was supposed to demonstrate a sincerity of intent, to convey an impression that "we, the manufacturers, are taking this seriously." For members of the cigarette conspiracy, however, the hope in supporting research was very often simply to continue the denialist enterprise. The TIRC in the U.S., for example, supported a great deal of research into basic biology, biochemistry and genetics, with the principal criterion for funding being that the research would not produce results unfriendly to the enterprise. A great deal of research also went into exploring aspects of modern life that might plausibly serve to distract attention from tobacco's role in causing disease. Environmental pollution was heavily researched, along with indoor air pollution from carpet fumes, psychological stress, and occupational hazards of various sorts. Hundreds of millions of dollars of cigarette profits went to fund research into genetic or constitutional predispositions, viral causes of cancer, immunology and allergies, and so forth.[185]

Support for research was also considered a means of buying time—a delaying tactic. BAT's Richard Dobson in a confidential 1969 report on "Smoking and Health" denied a "proven cause/effect relationship between smoking and lung cancer" but also identified three further "lines of defense" to keep people smoking. The first was basically to buy time via research: "The industry's object is to gain time for research, during which it is hoped that the dangerous components (if any) in smoke will be identified and removed. This is a political activity." The second line of defense was to insist on the following public position with regard to the lung cancer link:

> we do not believe it but just in case it is true we will:

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[184] Canadian Facts Co. Ltd. (for ITL), "Four Group Discussions on Du Maurier Package Design," Jan. 11, 1968, CTRL No. MRS1999, p. 5. There was also a sense of cranberry being too "harsh" or even "bloody red," with some smokers associating the color with "fire-engines and thus 'hot' cigarettes."

[185] Glantz et al., *Cigarette Papers*.

(a) not encourage children to smoke
(b) make available lower tar and nicotine or other "safer" products;
(c) pursue our researches harder than ever.[186]

Dobson noted the continued value of the "nothing is proved" stance and of "proclaiming the industry's great scientific effort," but he also listed "voluntary action" as a third line of defense, a last-ditch strategy to avoid adverse legislation.

Crucial also to realize, though, is that cigarettes were also designed and marketed in such a way as to give the appearance of being "safer." Advertisers hinted that certain kinds of cigarettes were better for you than others, and that switching to such brands was tantamount to—or at least the next best thing to—quitting. Switching to lights or low tars, for example, was described as a "compromise" or "downshifting." Some strategies of this sort are quite old in the cigarette business. In the 1930s, '40s and '50s, for example, Brown & Williamson's flagship menthol brand (Kool) was commonly regarded by smokers as

> more a "medicine" than a cigarette. Some people smoke them all the time, but they are most consistently and definitely thought of as something to change to when one has a cold, a very bad cough, or a dulled palate. In a sense, they provide a way of "giving up smoking without actually stopping."[187]

The principal goal of advertising, after all, was to make smokers (or starters) feel comfortable about buying and smoking cigarettes. Brand choice was one target, but there was also a more generalized effort to make the smoking habit seem fun, attractive, and exciting—and polite, a social activity one could engage in without

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[186] R. P. Dobson (ITL), "Smoking and Health," March 25, 1969, CTRL No. jhq40a99, p. 4. In an extraordinary exhibition of "glass half full" optimism, Dobson cited a passage from the 1962 report by the Royal College of Physicians (*Smoking and Health*) to the effect that smoking was "a habit which most smokers enjoy without injury to their health."

[187] H.Q. Sales Office, Rothmans of Pall Mall Canada Ltd., "Sales Lecture No. 3 – Motivation Research: Cigarettes – Their Role and Function," Oct. 1957, CTRL No. 92212, p. 18. A survey conducted for Imperial Tobacco in 1959 found that one reason people smoked menthol cigarettes was "from a belief that they were better for their general health"; see Canadian Facts Co., "Study No. 8: Canadian Smoking Habits and Smokers' Attitudes," Nov. 1959, p. ii, CTRL No. MRS1009. People would often smoke menthols only when they had a cold, switching back to regulars when they got better. In this 1959 sample, 48 percent of smokers said they smoked menthol cigarettes because they thought they were "better for your general health." Menthols were never as popular in Canada as in the U.S., but even with only 6 percent of the market Canadians still smoked about 120 billion menthol cigarettes from 1950 through 2000.

shame or anxiety. Rothmans of Pall Mall was relatively honest about this in its internal corporate memos and reports:

> cigarette advertising undoubtedly plays a tremendous role in defining smoking habits. A prominent characteristic of cigarette advertising is the fact that it is "always everywhere." People are constantly reminded that cigarettes are a prevalent cultural object; this serves to press them toward smoking, in general.[188]

And with increasing publicity of health harms, reassurance was essential:

> But, again, advertising should provide reassurance in this regard. There is enough anxiety about smoking to require some relief of concern.[189]

"Reassurance" was one of the principal goals of advertisers—the word appears in over a thousand Canadian internal documents—and cigarette marketers used a wide range of methods to achieve this goal. Testimonials from sports heroes and movie stars were common in the 1930s, '40s and '50s, as were marketing gimmicks like skywriting and skycasting plus of course billboards, point-of-sale ads, contests and coupons, movie plugs, and countless ads on radio and television. Advertisers used medical authority to sell cigarettes, but also comedy and romance and even Santa Claus. Health reassurance was also a central theme in product design, with reassurance offered through "toasting," filters, king sizing, mentholation, "selective filtration," low tars, lights, milds, slims, and myriad other gimmicks—none of which delivered genuine safety.

Perceptions (i.e., illusions) were crucial in such efforts. ITL's Project Day from 1988, for example, recalled how

> When "light" cigarettes were introduced, they were perceived by consumers to represent a relatively healthier option to their non light counterparts. The successful entries basically offered consumers the image and taste credentials of a popular established trademark with a "mechanical" reduction in tar, through ventilation.[190]

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[188] H.Q. Sales Office, Rothmans of Pall Mall Canada Ltd., "Sales Lecture No. 3 – Motivation Research," Oct. 1957, CTRL No. 92212.

[189] H.Q. Sales Office, Rothmans of Pall Mall Canada Ltd., "Sales Lecture No. 6," Oct. 1957, CTRL No. 902205, p. 5.

[190] A. Chan, A. Porter and T. Smith, "Project Day," June 21, 1988, Bates 400089980, p. 4.

Consumer perceptions were also highlighted in plans for so-called "mild" and "extra mild" cigarettes. Planning documents for Imperial Tobacco's Project Erie in 1983 expected new "mild" or "extra mild" products to be perceived as offering "health reassurance": "Faced with a new *extra mild* cigarette, the latter target group will gain some reassurance from a health standpoint." Advertising themes were to include "Reassurance and trust."[191]

Looking back on the history of cigarettes, it is important to realize that it is not just what the industry *says* or *depicts* that is deceptive—through marketing slogans or deceptive imagery, for example—we also have to realize that the product itself is fraudulent to a certain extent, fraudulent by design (and/or negligence). By this I mean that tobacco manufacturers could have made cigarettes significantly less deadly and less addictive, simply by changing the pH of cigarette smoke and reducing the mass of nicotine in the cigarette rod to sub-compensable levels (i.e., levels so low that a smoker could not extract enough nicotine to create or sustain dependency, as in a cigarette containing less than about .1 percent nicotine by weight in the cigarette rod).[192] But they have not, apart from trivial gestures or as complements to more traditional cigarettes. Instead, cigarettes have been designed to create and to sustain addiction—and to maximize profits. Sir Charles Ellis at a BAT research conference in Montreal in 1967 made this point explicit, noting that it was good to remove substances "harmful or alleged to be harmful" so long as this didn't hurt sales: "The improvement of current brands should be continued by removing from the smoke any substances judged to be harmful or alleged to be harmful, *provided consumer acceptance is not adversely affected* (emphasis added).[193]

A clear example of this manipulation is that fact tobacco manufacturers have maintained the nicotine content in cigarettes at a level of about two percent by weight in the rod, knowing that a) smokers are addicted to the nicotine in cigarettes, and that b) nicotine pushed much lower than this would not allow the cigarette to create or sustain addiction.

Cigarette makers were clearly aware of the addictive power of nicotine by the 1950s. We find this in the interviews conducted by Hill & Knowlton for the American companies, in the earliest phase of the denialist campaign. In December of 1953, the PR firm recorded one company's research chief commenting on how

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[191] Canadian Facts, "Project Erie (French)," Apri1 1983, CTRL No. MRPF1614.

[192] Neal L. Benowitz and Jack E. Henningfield, "Establishing a Nicotine Threshold for Addiction: The Implications for Tobacco Regulation," *New England Journal of Medicine*, 331 (1994): 123–25. Benowitz and Henningfield show that a cigarette containing less than about .5 mg of nicotine in the rod could not create or sustain addiction.

[193] Sydney J. Green, "B.A.T.: R&D Conference - Montreal - October 24 to 27 1967," Bates 109880411-0424.

"fortunate" it was for the companies that cigarettes were "a habit" that smokers "can't break."[194] "Nicotine addicts" is the expression BAT's Chief Scientist Charles Ellis used to refer to smokers in an internal memo from1961, and in 1963 Brown and Williamson Chief Counsel Addison Yeaman stated in yet another internal report that "nicotine is addictive."[195] There was not yet much of a push to optimize nicotine levels in cigarettes, however, since there was not yet much pressure to lower tar and nicotine deliveries. Pressure to reassure smokers grew in the 1960s as more and more smokers started trying to quit, fearing for their lives (while also trusting in logic of shifting to "lower tar" cigarettes). Cigarette makers responded by marketing cigarettes ever lower in tar and nicotine (as measured by standardized smoking robots); the tar and filter wars of the 1950s and '60s were part of this, as was the introduction of "light" brands in the 1970s.

Tobacco manufacturers by the 1970s were clearly aware that nicotine levels had to be kept above a certain level to create and sustain addiction. Lorillard researchers in 1976 expressed this as follows: "A cigarette with substantially lowered nicotine could not deliver the smoking satisfaction to sustain consumer purchase."[196] The challenge was to keep the nicotine level in cigarettes high enough to create and sustain addiction, while simultaneously giving the appearance of lowering yields as determined by the standardized smoking robots of the FTC and ISO.

Machine-level deliveries were deceptive, however, since the manufacturers knew that cigarettes could be smoked more or less intensively, yielding however much pharmacologic nicotine a smoker might desire. Cigarettes were "elastic" in this sense, and the manufacturers capitalized on this tendency of smokers to "self titrate," adjusting their smoking behavior to maintain the nicotine levels to which they were accustomed. There was thus no real (honest) debate on the addictiveness of nicotine, at least not internally in the companies' archives. Here is how Lorillard conceptualized nicotine titration in 1976:

> The consensus of opinion derived from a review of the literature on the subject indicates the most probable reason for the addictive properties of the smoke is the nicotine. Indications are that the smoker adjusts his smoking habits to satisfy the desire for nicotine either by frequent or large puffs on the cigarette, or smoking a

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[194] Edwin F. Dakin, "Forwarding Memorandum: To Members of the Planning Committee," late Dec. 1953, Bates JH000493-0501, p. 2.

[195] Sir Charles Ellis, "Meeting in London with Dr. Haselbach," Nov. 15, 1961, Bates 301083862-3865; Addison Yeaman, "Implications of Battelle Hippo I & II and the Griffith Filter," July 17, 1963, Bates 2074459290-9294.

[196] R. E. Smith to F. J. Schultz (Lorillard), "Lowered Nicotine Project," Nov. 9, 1976, Bates 01244504.

> large number of cigarettes. According to a number of authors "free" nicotine produces a more immediate impact on the smoker. . . . It is generally agreed at this time that a "small" amount of free nicotine is more desirable than a "large" amount of bound nicotine.[197]

Canadian manufacturers clearly recognized this same general pattern of addiction, compensation, and self-titration. In 1975, for example, Patrick J. Dunn from Imperial Tobacco's Research and Development Division in Montreal reported on a test to see whether smokers shifting to lower yielding cigarettes would compensate to obtain higher yields. The test results were clear:

> In each case, the smoker adjusted his smoking habits in order to duplicate his normal cigarette nicotine. . . . All human smoking parameters were found to be larger than those obtained from standard machine smoking. The most pronounced increase of 62 % in total volume of smoke drawn, results in a 64% increase in nicotine and 58% increase in TPM.
>
> Thus, it can be concluded that the Players Filter Reg. cigarette smoker significantly alters his smoking pattern in order to overcome a lower nicotine and TPM delivery, as a result of this experienced high pressure drop. . . . This cigarette change results in the smoker adjusting to compensate for this lower nicotine delivery.[198]

ITL's (confidential, unpublished) acknowledgement of compensation is significant, because it reveals that the tobacco industry knew that cigarettes advertised as "lights" or "low tar" would deliver levels of nicotine far higher than what was revealed on standardized smoking machines.[199] In recognizing this, the Americans and the Canadians were no different.

One interesting difference between U.S. and Canadian manufacturing is that the Canadians do not appear to have used American methods of freebasing to augment a cigarette's nicotine "kick." It is not clear that we have sufficient documents to make a final judgment, but I have not found evidence of Canadians ammoniating their leaf using either urea or DAP (diammonium phosphate) or by adding protein components or simple bases such as sodium hydroxide or other

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[197] M. S. Ireland to H. J. Minnemeyer (Lorillard), "Research Proposal—Development of Assay for Free Nicotine," July 16, 1976, Bates 00044522.

[198] Patrick J. Dunn (ITL), "The Use of the Freiri Slave Smoker to Investigate Changes in Smoking Behaviour," March 3, 1975, Bates 650023966-3999.

[199] One of the best histories of Canadian cigarette design—and cigarette deception—is Neil E. Collishaw, "Manipulation: The Story of Imperial Tobacco and Its Cigarettes," Oct. 1999, Bates TA85554-5674.

forms of "Root technology" on a broad commercial scale—as was common in the United States.[200] Canadians seem to have used other methods to achieve similar goals, notably leaf breeding technologies. The nicotine content of Canadian cigarettes today is as high as it is, partly because of efforts in the 1980s to develop what were known as "enhanced leaf nicotine" varieties.

A 1986 memo from research agronomists working closely with ITL at the Delhi Research Station in Ontario explained this sequence of events, noting that in the 1970s about 90 percent of the entire Canadian tobacco harvest was from an American variety ("old favorite") known as Virginia 115. By the 1980s, however, as a result of intensive breeding efforts, 97 percent of the leaf smoked in Canadian cigarettes came from newly-created varieties—Norel, Delgold, and Newdel, for example—several of which were deliberately bred to have higher yields, earlier maturity, superior grade quality, and disease resistance but also "enhanced leaf nicotine" along with "reduced smoke tar and tar/nicotine ratio." The industry's agricultural consultants at Delhi were quite explicit about this goal of manipulating nicotine in this manner: in-bred pest resistance was one goal, but just as important was to "increase total alkaloids" in the leaf.[201]

Utilizing these new varieties of leaf meant that the nicotine content of the tobaccos used in Canadian cigarettes remained quite high. The fraction of nicotine (by weight) in finished leaf was kept in the range of 1.5 to 2.5 percent; Players Light Regular in 1991, for example, was 2.2 to 2.5 percent nicotine, levels more than sufficient to create and sustain addiction.[202] Reducing sugars were kept in the range of 16 to 18 percent by weight, which generated sufficiently high levels of organic acids to yield a neutral and, therefore, inhalable smoke.

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[200] Terrell Stevenson and Robert N. Proctor, "The 'Secret' and 'Soul' of Marlboro: Philip Morris and the Origins, Spread, and Denial of Nicotine Free-Basing," *American Journal of Public Health*, 98 (2008): 1184-94. Canadian manufacturers often monitored free nicotine ratios (compared to total nicotine) in cigarette smoke; see H. Elmenhorst (Rothmans International Services) to Norman Cohen (RBH), "Free Nicotine Analysis of Samples," March 20, 1990, CTRL No. 145786A.

[201] P. W. Johnson (Director, Delhi Research Station) and R. S. Pandeya (Geneticist, Delhi Research Station) to Advisory Committee, "Tobacco Variety Development," Oct. 17, 1986, Bates 620123442-3443. Johnson and Pandeya make it clear that cigarette manufacturers had a *de facto* veto power over what kinds of tobacco leaf would be developed: joint industry-government "quality evaluation" meetings were held every fall, at which point "lines" (tobacco varieties) judged unacceptable to the industry were dropped: "Lines, or in the case of other experiments, treatments, unacceptable to the industry are dropped at this point. . . . varieties developed by Delhi must meet industry requirements and specifications." The program to increase total alkaloids through biotechnology is described in P. J. Dunn, "Imperial Tobacco (Montreal) Contract Research Project with Agriculture Canada," 1986, Bates 620123444-3447.

[202] L. Bussiere, "Experimental Results," May 30, 1991, CTRL No. 27435.

Cigarette manufacturers worked very hard to optimize nicotine deliveries in their products. Norman Cohen, scientific advisor to the president at Rothmans, Benson & Hedges (Canada), in 1987 recognized that "The primary need of the smoker is nicotine . . . the most powerful psycho-active substance in tobacco smoke." Cohen knew that nicotine from a cigarette reached the brain in about 7 seconds, and that "no other mood modifying substance acts quite this rapidly." He also recognized that smokers become accustomed to a given dose—through drug dependence—and that if given a different brand "will compensate and in many instances achieve similar levels of nicotine uptake." This was not of course information known to ordinary smokers; the ordinary smoker did not know, as Cohen put it, that smoke machine yields "bear no resemblance to what the actual smoker can obtain from his brand." Cohen stressed that "two brands each having a measured total delivery of 16 mg tar can deliver to the smoker two very different levels of tar"; smokers of a brand advertised as delivering, say, 9 mg of tar were therefore clearly being misled, since smokers could actually get "up to 26 mg tar from the 9 mg product."[203]

Cohen's goal was to find better metrics for use in Rothmans' ongoing "product optimization"; he realized that for purposes of cigarette design it was "meaningless to evaluate a brand or brands in the marketplace on the basis of measured tar and nicotine delivered or specified on the pack"; indeed there was "no correlation" between machine-obtained values (League Tables) and "per puff" deliveries. Cohen found that per puff deliveries correlated better with total sales, and were therefore better suited for use in designing "optimized" cigarette products that would satisfy "the majority of smokers."[204]

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The main point of marketing certain cigarettes as "light" or "low tar" was to reassure smokers. From Cohen's and many other industry documents, though, we know that cigarette manufacturers knew that "low tars" or "lights" provided little or no real health benefit. Cigarette manufacturers realized that smokers tended to smoke such cigarettes more intensively, compensating for low-rates of delivery by smoking more, or holding the smoke for longer or taking more puffs or larger puffs, or by drawing the smoke more deeply into the lungs or smoking further down on the butt—to obtain their desired nicotine "fix." Smokers were addicted to a certain level of nicotine, which meant that anyone who switched to a (nominally) "light" or "low tar" cigarette could simply alter their behavior to obtain more of the

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[203] Norman Cohen (Rothmans, Benson & Hedges), "Nicotine/Puff: A Key Element in the Selection Process," 1987, CTRL No. 019971A.

[204] Ibid. Cohen found that the ideal "nic/puff" ratio was .14 mg/puff; that was the value that "product designers should strive for."

addicting alkaloid. That is why "low delivery" cigarettes were, and remain today, fraudulent: the descriptors "low tar" or "light"—and even "filter"—misrepresent the fact that cigarettes with such labels are no less hazardous. Tobacco manufacturers eventually learned that "low-tar" cigarettes could pose an even greater hazard, insofar as smokers would be forced to pull harder on such cigarettes to obtain "satisfaction" (the industry's code-name for nicotine), drawing the smoke deeper into the lungs. Filters also tended to reduce the average particle size of cigarette smoke, which made it even easier for smoke to penetrate further into the lungs. Tumors in these distal regions tend to be both harder to treat and more difficult to diagnose, elevating morbidity. Pulmonologists in the 1990s started noticing increasing numbers of tumors in these more distant reaches of the lungs, especially adenocarcinomas, caused by the smaller size of smoke particles (from filtration) and the practice of deeper inhalation (from compensation).[205]

Filtration also raised the spectre that by eliminating certain "irritants" from smoke, the resulting smoke became easier to inhale and therefore more deadly. In 1980, BAT scientists found that filtering out irritants could increase exposure to certain compounds in cigarette smoke, by making it less unpleasant to inhale. Rats exposed to smoke from which certain irritants had been removed, for example, were found to inhale that smoke more readily, exposing them to higher levels of toxins. This was disturbing to the researchers, who found the results "the converse of the expected result."[206] The implications, however, were clear: filters designed to selectively remove irritating vapor phase chemicals might end up making the resultant smoke easier to inhale, and therefore more injurious. This is particularly remarkable in retrospect, given the long-standing stress by advertisers on certain brands of cigarettes being "milder" or "easier on your throat." The irony here is that by lessening "irritation," cigarette designers were actually elevating hazards. And smokers were clearly taken in: ITL scientists in 1984 commented on a study showing that 37 percent of smokers considered "less irritation" to be "an extremely important quality" in their cigarettes.[207]

Finally, we should also keep in mind that the (false) promise of a "lighter" or "lower-yielding" smoke made it easier for smokers to rationalize their continued smoking. Filters, lights, and low tars (and even menthols and "king-sizing" to a certain degree) all provided smokers with a psychological crutch or rationale to continue their habit, a kind of compromise or middle ground between quitting and

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[205] Gary M. Strauss et al., "Creation of an Epidemic: The tobacco Industry (TI) and Smoking-related Adenocarcinoma (AD) of the Lung," *Journal of Clinical Oncology*, 25 (2007): 7583.
[206] G. Smith et al., "A Comparative Inhalation Study on Smoke from Cigarettes with Different Filters," March 21, 1980, CTRL No. UT39.
[207] Robert Bexon, "R&D/Marketing Conference," June 1984, p. 42.

continued smoking. The promise of lights led smokers down this path, which manufacturers clearly knew was a false.

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I have stressed throughout this report the crucial role of legal considerations in the decisions made by cigarette manufacturers; lawyerly considerations have defined what would be said or not said to the public, what kinds of research would be done and what kinds not done. The law firms assisting the industry were as heavily involved as the companies in perpetrating this general fraud. Shook, Hardy and Bacon lawyers and attorneys from other firms to a certain extent—notably Covington and Burling—were not just lawyers for the defense but also industry strategists, propagandists and co-conspirators.

Many of these lawyerly manipulations first became evident with the release of millions of pages of internal tobacco industry documents in the 1990s; that may be one reason the Canadian industry has opposed the release of comparable internal documents. Canadian cigarette manufacturers looked warily at the release of the American industry's documents in the 1990s, fearing the impact of a similar release in Canada on cigarette consumption, stock values, and litigation ("if any issue can be said to threaten the very future survival of ITL and of the industry, litigation has to be it").[208] Here is how one ITL executive put the matter in 1995:

> the many industry and Brown and Williamson documents that have become public in the United States and Canada are certain to increase downward pressure on the value of Imasco and Rothman's shares, to further tarnish the reputation of the companies and of their executives, to reduce our ability to influence public policy on our own, and to reduce our ability to recruit third parties to support us in dealing with policy makers.[209]

Lawyerly considerations were also paramount in the 1980s, when British manufacturers reminded their Canadian affiliates of the dangers involved in any effort to make a "safe" or even a "safer" cigarette. BAT Chairman Patrick Sheehy in December of 1986 wrote to IMASCO's CEO, Purdy Crawford, expressing his concerns about IMASCO giving high priority to developing a "safe" cigarette. Sheehy pressured Crawford to abandon such a move: "in attempting to develop a 'safe' cigarette you are, by implication in danger of being interpreted as accepting that the current product is 'unsafe' and that is not a position that I think we should take."[210]

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[208] Michel Descôteaux to M. Courtney (ITL), Aug. 1, 1995, CTRL No. EF1899.

[209] Ibid.

[210] Patrick Sheehy (BAT Industries) to Purdy Crawford, Esq. (IMASCO), Dec. 29, 1986, Bates 201766385-6387.

Even today, while it is true that several key elements of the public health consensus are now admitted by tobacco manufacturers, it seems that lawyerly concerns still dictate the limits of those concessions. The industry now admits that cigarettes cause certain diseases, but they have not admitted that the chemistry of cigarette smoke has been manipulated to sustain addiction, or that millions of Canadians have died from diseases caused by tobacco. Some companies now admit that secondhand smoke can cause disease, but none has admitted to the scale of the toll or that cigarette manufacturers for decades lied about the hazards of smoking. Considered in the frame of its global reach, a more grave and deadly deception in the entirety of human history would be difficult to name.

Note on Certain Limitations of this Study

All historians must grapple with the incompleteness of historical evidence; we never have a "complete" record of the past. In the tobacco context this is complicated by the fact that cigarette manufacturers have deliberately destroyed certain documents, apparently to prevent their discovery in litigation. Of course we can only know about destruction that was imperfect, having left some kind of trace or shadow. In 1992, for example, attorneys from the London firm of Lovell White Durrant wrote to Stuart P. Chalfen, a lawyer working for BAT, detailing some of the kinds of documents destroyed, including documents of a scientific nature exploring tobacco harms:

> The documents now destroyed include the "B" series of reports representing data generated by mouse-skin painting experiments; a number of documents detailing inhalation studies conducted at Southampton; 3 technical reports dealing with the mutagenic activity of commercial brands; and a number of reports covering miscellaneous smoking and health issues such as the retention of smoke components in the human respiratory system, the properties of nicotine and the toxicity of certain additives.[211]

BAT clearly did not want these documents seeing the light of day; it did not want it to be known that the company had been researching precisely those issues on which it was pronouncing so vehemently in public—namely, the hazards of

[211] John Meltzer (Lovell White) to Stuart P. Chalfen (BAT), June 5, 1992, Bates 202313418-3421; and for background, David Hammond, Michael Chaiton, Alex Lee, and Neil Collishaw, "Destroyed Documents: Uncovering the Science that Imperial Tobacco Canada Sought to Conceal," *CMAJ*, 181 (2009): 691-98. For a list of documents proposed for destruction, see Simon V. Potter to Stuart P. Chalfen (BAT), June 5, 1992, Bates 202313423-3425.

smoking. We know from other documents that have been preserved, however, that this destruction was part of a larger, orchestrated plan of deception.[212]

Some of these documents have been recovered, but it is reasonable to assume that others, more perfectly destroyed, will never be recovered. Those known to have been destroyed and recovered include studies exploring the cancer-causing potential of cigarettes with low-visible sidestream smoke.[213]

Note on the Magnitude of the Harms Caused by Cigarettes in Canada

Cigarettes are the single largest preventable cause of death in Canada, as in most other nations of the world. In 2000, according to Health Canada, cigarettes were responsible for 40,000 annual deaths in the country. This unparalleled toll is largely because of the immense volume of cigarettes smoked. Canadians presently smoke about 40 billion cigarettes per year, a figure that is down about thirty percent from the peak value of 66.4 billion in 1981.

In the aggregate, year after year, this is an impressive sum. If Canadians smoked an average of 40 billion cigarettes per year from 1950 to 2000, this means a total of about 2 trillion cigarettes smoked during this period. 2 trillion cigarettes is enough to make a continuous chain of cigarettes some 160 million kilometers long, or enough to circle the globe about four thousand times. It is more than enough to stretch from the earth to the sun—or from the earth to Mars and back (when Mars is close). We can think of this as a velocity: if 40 billion cigarettes are produced (and smoked) per year, this means that Canadians still smoke about 100 million cigarettes per day, or 4 million per hour. Picture a cigarette rod of infinite length, burned and inhaled at a rate equal to one third the speed of sound.

Cigarettes cause about one death per million smoked,[214] which means that the 2 trillion cigarettes smoked in Canada from 1950 to 2000 caused about 2 million deaths. This does not mean of course that these 2 million Canadians would not have died; all humans die, that is the Socratic syllogism. It simply means that two million Canadians would have lived to die from something other than their cigarettes. Unlike many other kinds of human mortality, tobacco deaths are entirely preventable. It is perhaps useful to think about this in terms of years of life lost to smoking: every cigarette you smoke takes 11 minutes off your life (on

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[212] David Hammond, Michael Chaiton, Alex Lee, and Neil Collishaw, "Destroyed Documents: Uncovering the Science that Imperial Tobacco Canada Sought to Conceal," *CMAJ*, 181 (2009): 691-98.

[213] See, for example, A. G. Barnes and E. D. Massey, "Ames Mutagenic Activity of Sidestream Condensate," Jan. 26, 1987, Bates 105541368-1380.

[214] Robert N. Proctor, "Tobacco and the Global Lung Cancer Epidemic," *Nature Reviews Cancer*, 1 (2001): 82-87.

average),[215] which means that cigarettes robbed Canadians of about 40 million years of life in the second half the twentieth century.

Cigarette death can also be translated into mass (weight) equivalents. If each cigarette contains about a gram of tobacco and one person dies for every million cigarettes smoked, then one person dies for every thousand kilograms of tobacco harvested and turned into cigarettes.[216] We can also calculate the number of deaths produced by individual factories. Imperial Tobacco's cigarettes are no longer manufactured in Canada but rather in a BAT factory in Monterey, Mexico (from Canadian flue-cured leaf). If ITL's Mexican factory produces 25 billion cigarettes per year (roughly ITL's Canadian market share), this means that this one factory in Mexico kills about 25,000 Canadians per year. No other factory has ever killed so many Canadians, unless it is some previous ITL factory operating in Canada.

There is also a simple economic calculus that can be applied to such figures. Tobacco manufacturers make about a penny in profit for every cigarette sold, which means we can also calculate the de facto value of life to a cigarette manufacturer. If every million cigarettes smoked causes one premature death, then a cigarette manufacturer makes about $10,000 from each of the deaths of its customers. One can consider this an economic measure of the indifference of cigarette manufacturers, or at least the trade-off they are not willing to make to prevent death and suffering from their products. If cigarette makers make $10,000 for every million cigarettes sold, then cigarette makers are apparently not willing to forego $10,000 in profit to save one human life. De facto, this means that the value of a human life to a modern cigarette manufacturer is about $10,000.

Expert Reports by Professors Flaherty, Perrins, and Lacoursière

Professors Flaherty, Perrins and Lacoursière have submitted expert reports on behalf of tobacco manufacturers, and while all three reports exhibit an immense amount of work—thousands of hours in fact—there is also a certain skew in each instance, having to do with their failure to consult the tobacco industry's own internal documents. This is a common feature of the historical testimony prepared for litigation on behalf of the cigarette companies. Fifty professional historians

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[215] Mary Shaw, Richard Mitchell, and Danny Dorling, "Time for a Smoke? One Cigarette Reduces Your Life by 11 Minutes," *BMJ*, 320 (2000): 53.

[216] Howard Barnum at the World Bank in 1994 calculated that "every ton of tobacco consumed results in approximately one death"; see his "The Economic Burden of the Global Trade in Tobacco," *Tobacco Control*, 3 (1994): 358-61. Richard Peto et al. that same year figured that a metric ton of tobacco kills about 1.3 people per year; see R. Peto, A. Lopez, J. Boreham, M. Thun, and C. Heath, Jr., *Mortality from Smoking in Developed Countries 1950-2000* (Oxford: Oxford University Press, 1994).

have provided expert testimony for the industry over the last 30 years, and in virtually each instance the companies' internal documents have been ignored.[217] Instead, we are presented with a conclusion consistent with the industry's legal strategy dating from the 1980s, when the Special Trial Issues Committee (STIC) crafted the argument that tobacco's harms are "common knowledge." The desired force of such an argument is clear: smokers when they begin at age 13 or 14 are fully aware of what they are doing; and we cannot talk of deception or concealment since people are and have long been "fully informed of the hazards." Knowledge of possible harms from smoking was, as Professor Perrins asserts, "nearly universal."[218]

Nothing could be further from the truth. Tobacco harms were poorly understood by most ordinary Canadians in the 1960s, as they still are in certain respects even today. In 1969, about a third of all Canadian doctors were still smoking, and most smokers had little understanding of the nature or magnitude of tobacco harms. Smokers were not well informed about the severity of harms compared with other threats to health, and did not have an accurate understanding of how many cigarettes it was "safe" to smoke. They were poorly informed about the implications of a lung cancer diagnosis, and over-optimistic about the likelihood of a cure in the future. They were poorly informed about the strength of nicotine addiction, and how difficult it is to quit. They were poorly informed about the sham nature of filters, low tars and "lights," and poorly informed about the honesty of the companies supplying the cigarette market.

A proper review of the relevant historical documents reveals these and other shortcomings of any assessment characterizing popular knowledge of cigarette harms in the 1960s as "nearly universal." I shall examine each report in turn.

* * * * *

David H. Flaherty is a professor emeritus of history and law at the University of Western Ontario in London, about 40 km north of Lake Erie. His assigned task was to answer two questions:

> (a) At what point in time, if ever, did awareness of the health risks of smoking, and the link between smoking and cancer in particular, become part of the "common knowledge" of Quebecers?, and;

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[217] Kyriakoudes, "Historians' Testimony on 'Common Knowledge'"; Proctor, "'Everyone Knew But No One Had Proof.'"

[218] "Report of Dr. Robert John Perrins prepared at the request of Counsel for JTI-Macdonald Corp.," for *Conseil Québécois sur le Tabac et la Santé vs. JTI-Macdonald Corp. et al*., Dec. 22, 2010.

> (b) At what point in time, if ever, did awareness of the fact that smoking was "hard to quit", "habit-forming", or "addictive," become part of the "common knowledge" of Quebecers?

Flaherty claims that from the mid 1960s on, Quebecers were in possession of what he calls "common knowledge":

> From this point on, publicity about the health risks of smoking was constantly circulating and re-circulating throughout Quebec, primarily via newspapers and magazines. **Almost everyone** would have been aware of this ongoing coverage of smoking and health by this time, which included news stories warning that smoking could cause lung cancer, heart problems, and associated diseases. Awareness of the causal relationship between smoking and cancer and other health risks was **almost inescapable**, and as such became **common knowledge** among the population of Quebec by the mid-1960s. By this time, it had long been part of the **common knowledge** of Quebecers (from about the mid-1950s) that smoking was difficult to quit, and the only significant discussion in the news media on this point concerned whether smoking constituted an addiction, or whether it was a mere habit.[219]

I would certainly agree with Professor Flaherty that the second half of the twentieth century sees "an increasingly consistent public health message in Quebec that smoking was bad for your health"; I also find nothing objectionable in his claim that publicity of health risks of smoking was "constantly circulating and re-circulating" throughout the Province during that period. Flaherty makes quite a large and unjustified leap, however, when he concludes from this that "Awareness of the causal relationship between smoking and cancer and other health risks was **almost inescapable**, and as such became **common knowledge** among the population of Quebec by the mid-1960s" (emphasis added).

There are several problems with Flaherty's argument. One is that he uses the expression "common knowledge" in a rather loose and imprecise way. He says that for something to be common knowledge "the vast majority of the group must be aware of it" (p. 5)—but we are never told how large this majority must be: Nearly everyone? Most people? More than half?[220]

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[219] "Expert Report of David H. Flaherty: Awareness of the Health Risks of Smoking in Quebec (1950-1998)," April 2011, p. 3 (boldface added for emphasis). Flaherty was already preparing a common knowledge defense for the industry during the 1980s, when the companies were still denying evidence of harms; see

[220] Flaherty notes that for knowledge to be "common" it is not necessary that everyone must possess it, only the "vast majority." But he does not say how large that majority must be.

More serious is his failure to distinguish adequately between "awareness" and "belief" (or knowledge). It is one thing, after all, to be "aware" of a Surgeon General statement on smoking, and quite another to be convinced that such a statement is in fact true. We shall return to this difficulty in a moment.

A third problem is Flaherty's failure to consult the tobacco industry's internal documents—now available and searchable online through the Legacy Tobacco Documents Library and elsewhere, freely available to anyone with access to the Internet. This is a disturbing omission; it is simply not possible to understand changing attitudes toward smoking without consulting the archival evidence of how cigarette makers sought to influence such attitudes. Flaherty admits that since 1988 he has been conducting research "based exclusively on material from the public domain," ignoring the industry's internal documents.

A fourth problem is his failure to consult proper survey evidence, which clearly indicates that in the late 1960s there was still massive ignorance about the nature and severity of tobacco harms amongst smokers in Canada. I have already reviewed some of this evidence, but consider just this one source: Imperial Tobacco of Canada periodically conducted surveys to find out what fraction of the Canadian adult population was willing to agree that smoking was "Dangerous for Anyone" (as opposed to dangerous just for heavy smokers). When reviewing these surveys from 1971 to 1991, the company found that the fraction of those agreeing had risen from 48 percent to 79 percent. Which means that in 1971, several years after Flaherty is claiming "common knowledge," *not even half* the Canadian population realized that smoking could harm *anyone*, not just some particularly vulnerable population.[221]

In a nutshell: there is no evidence for Flaherty's claim that knowledge of the health risks of smoking was "nearly universal" by the mid 1960s. It is certainly true that information about such hazards circulated widely—as Flaherty nicely documents—but he ignores the fact that there was also *wide circulation of denials of those hazards*, principally from the tobacco industry and their "third party" agents. Flaherty also ignores the ubiquity of advertisements during this period, and the broad marketing of tobacco products designed to reassure smokers that their particular brand was safe. Finally, he also ignores the persistence of ignorance stemming from people not keeping up with the latest results of medical science. Canvassing articles in newspapers and popular magazines is therefore not enough; our question cannot simply be: Were people *exposed* to information about hazards? We also have to ask: Did people *actually believe* in the reality of those hazards? Were they *convinced*?

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[221] ITL Marketing Research Dept., "The Canadian Tobacco Market at a Glance," Dec. 1991, CTRL No. MRS7447, p. 3.

It is difficult to exaggerate the significance of this distinction between "awareness" and "knowledge."[222] Many people may be "aware" of reports (or rumors) that the U.S. government is hiding aliens at Area 51 in Nevada, but how many people actually believe such reports?[223] Similar questions could be asked about the reality of global climate change or the cell phone-cancer link or any other issue for which there are high social and financial stakes. The question for the historian of popular knowledge cannot simply be "have you heard?" We also have to inquire "do you believe?" We cannot use an answer to the former as an answer to the latter, the two questions are quite distinct. The tobacco industry's experts invariably confuse this point, to inflate the apparent proportion of people who "must have known" about the dangers of smoking. The violation of historical and survey methodology is so grave, and so often repeated, that it has attracted a sizeable critical historiography.[224] The industry's experts typically look only for

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[222] Awareness is fundamentally a marketing concept. The interest is in "exposure" to a particular advertising "message," which cigarette manufacturers sometimes measured in terms of "commercial message impressions"—with one person's exposure to one image counting as one message "unit"; see, for example, "Corporate Totals" (Lorillard), Jan. 16, 1961, Bates 01793607-3612. Awareness is neutral with regard to impact, the marketer simply want to know whether a message has been "heard." There is no real question of conviction or belief.

ITL market survey researchers recognized four different "arguments" used by smokers to reduce their health concern:

1) A fatalistic group "indicated that through accidents or aging, people die anyway, so why worry about the small contribution which smoking might make to this great eventuality"?

2) A more hedonistic group "consider the pleasure derived from smoking far outweighs any small risks that might be involved."

3) A "more skeptical group demand incontestable evidence (by their own standards) before they will recognize health risks." And

4) Yet another group considers themselves "exempt from health risks . . . smoking health problems cannot happen to them." See Market Facts of Canada Ltd. (for ITL), "1977 Segmentation of the French and English Speaking Canadian Cigarette Markets," June 1977, CTRL No. MSDS828, p. 31.

[223] American public opinion surveys in the 1950s sometimes asked about whether Americans believed in the reality of UFOs, and in one instance at least found that more people actually believed in UFOs than that smoking caused lung cancer. See Lydia Saad and Steve O'Brien, "The Tobacco Industry Summons Polls to the Witness Stand: A Review of Public Opinion on the Risks of Smoking," paper presented at the annual meeting of the American Association for Public Opinion Research, May 16, 1998, Bates EXHIBSAADLOBRIENS051598.

[224] Brandt, *Cigarette Century*, pp. 342, 495; Louis Kyriakoudes, "Historians' Testimony on 'Common Knowledge' of the Risks of Tobacco Use: A Review and Analysis of Experts Testifying on Behalf of Cigarette Manufacturers in Civil Litigation," *Tobacco Control*, 15 (2006): iv107-16; Robert N. Proctor, "'Everyone Knew But No One Had Proof': Tobacco Industry Use of Medical History Expertise in US Courts, 1990-2002," *Tobacco Control*, 15 (2006): iv117-25; Paul Slovic, ed., *Smoking: Risk, Perception, & Policy* (Thousand Oaks: Sage,

examples of public reporting of hazards, with the implication being that each of these can be considered an instance of forewarning. And yes, there certainly was information "available" to ordinary Quebecois cautioning of a health hazard from smoking in the 1960s; but we also have to recall that well-financed efforts were also being made to call into question or distract from such information. For decades, there was an organized effort to manufacture doubts about the hazards of smoking, to "keep the controversy alive."[225] For decades, Canadians were bombarded with advertisements making smoking seem adventurous, sexy, and safe.

It is wrong, in other words, to infer popular knowledge from popular reporting, or even from the presence of a cautionary statement on cigarette packs. An analogy from the classroom is perhaps apt: what if a professor, to find out what a student knows, simply read (and graded) the *textbooks* to which the student had been "exposed"? The idea is absurd; a student must be evaluated by finding out what they know, not what they have been "exposed" to. Gauging "common knowledge" from the history of exposure to messages in popular publications is equally flawed.

Flaherty sees some significance in the fact that U.S. health warnings (on cigarette packs) reached Quebec, prior even to when warnings were placed on Canadian packs. But he doesn't seem to realize how ineffective such warnings were in educating the public. In 1967, one year after cautions were first required on cigarette packs, the U.S. Federal Trade Commission reported that Americans remained poorly informed about the hazards of smoking; indeed there was "virtually no evidence that the warning statement on cigarette packages has had any significant effect."[226] Countervailing forces were simply too great: tobacco advertisers had managed to convey "the desirability of cigarette smoking and assurances of the relative safety of cigarettes." The net effect was a cigarette-suffused fantasy world of boating, swimming, and fun-loving smokers at parties or in romantic settings from which the mortal force of the cigarette had been entirely expunged:

2001); Lydia Saad and Steve O'Brien, "The Tobacco Industry Summons Polls to the Witness Stand: A Review of Public Opinion on the Risks of Smoking," paper presented at the annual meeting of the American Association for Public Opinion Research, May 16, 1998, Bates EXHIBSAADLOBRIENS051598.

[225] See the chapter titled "Doubt Is Our Product" in my *Cancer Wars: How Politics Shapes What We Know and Don't Know about Cancer* (New York: Basic Books, 1995), pp. 101-132.

[226] Federal Trade Commission, "Report to Congress Pursuant to the Federal Cigarette Labeling and Advertising Act," June 30, 1967, Bates JD004289.

> Advertisements for cigarettes never show this side of smoking. They never show an habituated cigarette smoker with a hacking cough, groping for a cigarette upon awakening in the morning. They never suggest the tension felt by a chain smoker when he runs out of cigarettes.[227]

The FTC pointed out that pack warnings could not compete with the $300 million per year being spent on cigarette advertising; cautionary labels had "not succeeded" in countering the healthful images of smoking created by advertising. The prognosis was grim: without a change in course "smokers will continue to be deceived by false claims of 'mildness' and misleading portrayals of filters."[228]

Canadian manufacturers knew that warnings could prove equally ineffective in Canada. In January 1973, an ITL planning document for an upcoming BAT Smoking & Health conference at Echo Lake in Quebec commented as follows on the potential impact of new health warnings:

> although health concerns exist, they are rationalized away and are not necessarily operative in the smokers' behavior. Therefore, we would expect that the impact of even the most damning possible warning, if unsupported by any new evidence, would be minimal.[229]

This same document commented on how ITL's senior management had been communicating to the company's employees "a positive side of the picture so as to minimize any morale problems." The company had not yet experienced any "significant quitting due to health pressures"—meaning refusal to continue working for a company making a deadly and addictive consumer product. Senior management seemed also to have "no morale problems," and Canadian smokers also seemed to be in good spirits. Many certainly had intentions to cut down or quit (smoking), but "their actual behavior suggests that this concern is non-operative."[230]

Flaherty admits that he has really only researched "what Quebecers have been told over time" which, again, hardly provides sufficient grounds to indicate

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[227] Ibid.

[228] Ibid. The FTC released similar findings in 1976 and then again in 1981. In its 1981 "Staff Report," based on a review of 14 public opinion surveys conducted by scientific polling agencies, the Commission found "a substantial portion of the public remains uninformed about the hazards of smoking."

[229] "Suggested List of Questions for BAT Smoking & Health Conference – Viking Inn, Lac Echo, Lesage, P.Q.," Jan. 12, 1973, CTRL No. PAS1259.

[230] Ibid.

what they actually believed. He has not really even fairly researched what Quebecers have been told, since he ignores advertising ("outside the scope of my area of expertise") and all other statements and actions by the tobacco industry. He overlooks the fact that tobacco industry pressure on magazines and newspapers helped stifle criticism of tobacco in those publications, and overlooks how different *kinds of knowledge about smoking* penetrated different parts of society at different rates.

One problem in assessing the history of public understanding is that we must be clear about what kind of knowledge we are talking about. It is not enough to ask "did people know" whether smoking is dangerous or not, for example—since danger can mean very different things. A simple "yes or no" question will also efface the fact that dangers will generally be perceived as having different magnitudes. The reality is that people will regard different kinds of dangers as more or less serious: think morning cough vs. a lingering death from cancer.

There is also the related question of how serious people consider a particular hazard compared to others they might face. Smoking may be regarded as "dangerous" in the abstract, but what about more or less dangerous than, say, air pollution or driving in traffic or living without a smoke alarm? Flaherty pays no attention to two crucial questions: 1) *how dangerous* did people imagine their smoking to be? and 2) *how convinced* were they of the reality of that threat? On this matter of strength of conviction, it should be obvious that we will get very different answers from people, according to whether we ask:

1. Have you *heard* that smoking *may cause* cancer?
2. Do you *believe* that smoking *may cause* cancer?
3. Do you believe that smoking *causes* cancer?
4. Are you *convinced* that smoking is ***a major*** *cause* of cancer?
5. Are you *convinced* that smoking is ***the major*** *cause* of cancer? Etc.

Otherwise put: much depends on what is actually being asked, and how, or even in what order. Survey methodologists recognize that even the order in which questions are asked can be important, since surveys can "educate" and interviewees want to get "the right answer."[231]

Public opinion surveys show that while many people may have "heard" that smoking "may cause" cancer, far fewer people will be willing to say they are "convinced" it is a cause or the "major" or "proven" cause. Subtle differences such as these can be significant. Surveys from the 1950s, for example, show that

[231] The best general discussion of tobacco survey methodology is the collection of articles in Paul Slovic, ed., *Smoking: Risk, Perception, & Policy* (Thousand Oaks: Sage, 2001).

when ordinary people are asked whether they have *heard* that smoking *may cause* cancer, a large majority will say yes, they have heard about this. Asked whether they *believe* that smoking causes cancer, however, a much smaller minority will agree.[232] Asked in the strongest form: are you *convinced* that smoking is *the major cause* of cancer, we find significant dissent even in an academic audience polled today.

One classic problem in the history of survey research is that people have a tendency to give a pollster what they think they want to hear; the interviewee wants to please, to do a good job—perhaps from generosity or from not wanting to sound foolish or ignorant. To get around this problem, pollsters often ask people *unprompted* what they think is "wrong with" or "the major problem with," say, cigarettes. Striking in such surveys from the 1950s and '60s is how rarely people volunteered "cancer" as something they were concerned about. In most such studies from the 1950s, only about two percent of respondents offered "cancer" as one of "problems" with cigarettes.[233] Polls have also shown that when asked to rank smoking against other kinds of hazards—fires or pollution, for example—smoking has typically been near the bottom in terms of what smokers actually worry about.[234]

There are of course other ways to gauge popular understanding, including testimony from the tobacco industry itself—which used to be quite happy to claim that smokers refused to accept "the claims about smoking drawn from statistical tables."[235] We also find evidence, though, of a poor state of understanding even at

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[232] A good summary of early polling data is the Gallup Organization's "Trends in Public Attitudes on the Possibility of a Health Hazard in Cigarette Smoking," March 1964, Bates 01140982-1040, p. L4.

[233] Elmo Roper in 1958 was hired to conduct a study of smokers' attitudes in the U.S. for Philip Morris. While most people had *heard* about the smoking-cancer link, nearly 70 percent of smokers agreed that "as long as you are careful not to smoke too much, cigarettes won't do you any real harm." Unprompted recall was quite low: when asked to complete the sentence: "the trouble with cigarettes is that they . . ." only one percent volunteered "could cause cancer." And only three percent offered that cigarettes could be "harmful to your lungs, wind, breath." Roper's conclusion: there was "surprisingly little concern" about cigarettes. See Elmo Roper and Associates, "A Study of Attitudes toward Cigarette Smoking" (prepared for Philip Morris), Jan. 1959, Bates 1001753936-4029.

[234] Roper Organization, "A Study of Public Attitudes Toward Cigarette Smoking," July 1982, Bates 1002665283-5749, pp. 3-25; Louis Harris and Associates, *Prevention in America: Steps People Take—or Fail to Take—For Better Health* (Harris, 1983); and for Canada: Creative Research Group, "Project Viking – Wave 2," Oct. 6, 1988, CTRL No. MRL660, pp. 76-79, where the finding was that for most people, smoking "pales in comparison" with most other health and social issues.

[235] Cigarette manufacturers for many years denied that "most people" thought of smoking as a dangerous habit: Paul Paré in June of 1969, for example, made this claim:

the highest levels of government. In October of 1976, Health and Welfare Minister Marc Lalonde asserted that while "No health authorities would argue that smoking is good for you physically," we must nonetheless recognize that for some people "smoking seems to relieve tension and anxiety and perhaps can thereby contribute in some measure to good mental health."[236] Dr. Christiaan Barnard, the famed heart surgeon, is said to have recommended cigarettes to his daughter as a means of losing weight.[237] And we should not forget the many reassurances from the tobacco industry itself, that smoking had not been proved to be unsafe.

Flaherty in his report cites the press attention given to Mickey Mantle and Frank Leahy's efforts to quit smoking, and infers from this that "while the public was uncertain as to precisely why smoking was difficult to quit, there was a general consensus that it was" (pp. 13-14). This really is not a proper inference. Flaherty ignores the diversity of public opinion on this issue, and the pressures brought to bear by advertisers in keeping people reassured. There are of course instances of athletes publicizing their struggles with tobacco (former world heavyweight boxer Gene Tunney is another example from the 1940s),[238] but this is certainly more than offset by the barrage of cigarette-friendly testimonials churned out by athletes in the pay of the industry. Indeed for most of the twentieth century, sports has been far more often harnessed to promote smoking than to limit it. In the 1930s, '40s and '50s, thousands of athletes from every sport imaginable were hired by the industry to testify that brand X, Y or Z wouldn't "cut your wind" or "jangle your nerves." Flaherty names Mantle and Leahy, but these are drops in the bucket compared to the ocean of sports heroes paid to endorse tobacco products.

Sports sponsorship for decades was energetic in all parts of Canada—even after more explicit forms of advertising were banned. Imperial sponsored golf and

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> *It is actually a disservice to those millions who enjoy smoking to be constantly assaulted with some of the extreme and unsubstantiated propaganda that is spread about the so-called evils of smoking. But we believe that most people—even by merely looking around them—can see that the claims about smoking drawn from statistical tables do not actually exist among the real people of the world they live in.*

See "Draft for Paul Paré," June 5, 1969, CTRL No. 134519A, pp. 5-6.

[236] Lalonde is cited in "Smoking and Health: The Position of Imperial Tobacco," Feb. 1977, CTRL No. EF2471.

[237] Tobacco Institute, "The Smoking Controversy: A Perspective," Dec. 1978, Bates TIFL0068779-8815, p. 12.

[238] Gene Tunney, "Nicotine Knockout, or the Slow Count," *Readers Digest*, Dec. 1941, pp. 21-24, Bates 6573,

tennis; Rothmans sponsored ski and snowboarding festivals at Whistler. Rothmans also sponsored Rothmans Horseracing, a three-day River Roar on the South Saskatchewan in downtown Saskatoon, and the Benson & Hedges Symphony of Fire (a fireworks display).[239] Rothmans in its 1994 annual report noted that "a vast range of sports and cultural groups" had benefitted from tobacco sponsorship.[240] RJR-Macdonald in 1998 reviewed its recent "Extreme Sports Sponsorships in Québec," featuring snowmobiling in Chibougamau, Motocross in St-Julie, Mountain biking in Mont Saint-Anne, Car Rally in Charlevoix, Jet Ski in Wasaga Beach, and numerous of others. The goal in this instance was to associate the Export 'A' brand with risk and adventure, the sense of going *jusqu'au bout*—with the hoped for "return on investment" being increased cigarette sales in the crucial youth market.[241]

Sports sponsorship is part of what the tobacco industry characterizes as "event marketing," the purpose of which was to associate the name of a particular brand of cigarette with an event in the realm of sports, music, or the arts, or with some kind of popular pastime or festivity of one sort or another. Event marketing has been key to Canadian brand promotion since the 1950s: think of the du Maurier Tennis Open, Players Indy Racing, the Matinee Fashion Foundation, the du Maurier Jazz Festivals, or the Rothmans International Film Festival or Belvedere Rocks (showcasing youth-oriented music in Quebec), and so forth. Sponsorships allow the industry to circulate a particular brand of cigarette on brochures, billboards, ticket stubs, and ads in newsweeklies and magazines—not to mention word of mouth—allowing any discussion or even mention of the event on radio or TV to become brand-friendly promotional activity. In Canada in the 1990s, tobacco event marketing was being funded at about $60 million per year—with much of this going to events like the Players Ltd. Racing Team or Rothmans Formula One Racing. RJR Macdonald sponsored dozens of such activities, including the Macdonald Disabled Skiing Championship in Sunshine Village at Banff.[242] By the 1990s, more than 200 different arts organizations and sporting and entertainment events in Canada were taking money from tobacco manufacturers.[243]

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[239] RBH, "1998/99 Business Assessment," Sept. 17, 1998, CTRL No. 208048A.
[240] RBH, "Annual Meeting of Shareholders ," July 21, 1994**,** CTRL No. 207803A.
[241] RJR-Macdonald Inc., "Export 'A' Brand: 1999 Extreme Sports Sponsorships in Québec," Aug. 19, 1998, CTRL No. 0145926.
[242] Jerry Johnston (Canadian Association for Disabled Skiing) to Sheila Carson (RJR Macdonald), Jan. 30, 1985, CTRL No. 0031458.
[243] "Policy Analysis of Tobacco Product Promotional Activity Restrictions," Dec. 2, 1996, CTRL No. 0122108.

Flaherty claims that Canadians have long had a common knowledge of smoking being difficult to quit, and that a consensus of sorts to this effect was established in the 1950s; he also claims that "that consensus remained unchanged, and remains unchanged, to this day" (p. 14). While it could well be true that people throughout history have found it difficult to give up smoking, and from this came to have a kind of personal knowledge of addiction,[244] it would be wrong to equate this with the scientific understanding we now have of nicotine addiction, for two reasons.

The first is that smoking was not widely regarded as addictive in the 1950s and 1960s, neither by the general public nor the scientific community. This is partly because addiction was very often linked to psychopathology and anti-social behavior. Addiction was thought of more in the context of heroin use and alcoholism, both of which involved intoxication and deviant behavior. The cigarette industry was not entirely without influence in this sphere: the chapter characterizing smoking as a "habit" rather than an "addiction" in the 1964 Surgeon General's report was written by Maurice Seevers, a pharmacologist who had earlier worked as a consultant for the American Tobacco Company, makers of Lucky Strike cigarettes. It was Seevers who managed to have the Surgeon General's Advisory Committee adopt this weaker notion of cigarette smoking as merely as a "habit," which fit also nicely with his prior notion that stimulants such as nicotine could not be addictive. (Cocaine is also a stimulant, which is why Seevers also regarded cocaine as not addictive.) It would be wrong, then, to imagine that the immense financial and political power of the tobacco industry at this time—and the ubiquity of cigarette use—had no bearing on the extent to which smokers (and scholars) were led to regard cigarettes as addictive.[245] I noted earlier how tobacco industry researchers (and lawyers) prior even to the Surgeon General's report were readily conceding the reality of addiction—albeit only in private: BAT's Chief Scientist in 1961 characterized smokers as "nicotine addicts," for example, and Brown & Williamson's Chief Counsel (Addison Yeaman) in 1963 confessed that "nicotine is addictive" and that the company was "in the business of

[244] A favorite document of tobacco industry defense lawyers is an 1845 letter by former U.S. president James Quincy Adams, who in writing to his pastor remarked on how he had once been "addicted to the use of Tobacco in two of its mysteries, smoking and chewing" (Bates JD000023).

[245] The Advisory Committee responsible for drafting the 1964 Surgeon General's report refused to characterize smoking as an addiction, partly because of the influence wielded in the committee by Maurice Seevers, an industry consultant both before and after his service on the committee. Seevers drafted the chapter characterizing smoking as a "habit" rather than an "addiction," an error not corrected in a Surgeon General's report until 1988.

selling nicotine, an addictive drug."[246] Tobacco manufacturers regarded this as a positive aspect of their business: recall again the American research director in December 1953 commenting on how it was "fortunate for us that cigarettes are a habit they can't break";[247] recall also Robert Bexon's 1980 rumination on how "Fortunately for the tobacco industry" not even two percent of all quit attempts managed to last six months.[248]

A second fact to keep in mind is that addiction does not become closely associated with smoking (in the public's view) until large numbers of smokers began trying to quit—and realizing how hard this could be. Again, it is easy today to forget how socially accepted smoking was in the 1940s, '50s, '60s and '70s—and even later in many spheres. One index of this is that in 1940 or thereabouts, when *Life* magazine sponsored a contest for the best photo amongst its readers, second place went to a picture of a young boy (about 3 or 4) trying to light a cigarette (in his own mouth). This was just a cute kid acting like a grown-up, as if he were sporting a top hat or a fake mustache. Candy cigarette makers in the 1960s showed young children "smoking" (Harvard brand) candy cigarettes to be "just like Daddy."

Smokers did not start quitting in large numbers until the late 1960s, which is also when we start seeing an increase in the use of expressions such as "trying to quit smoking" in popular literature. We actually now have a means to test the frequency of such expressions in the English language, thanks to Google's assemblage of millions of English-language texts online in searchable form through Google Books. Using the "N-gram" search engines now available with the online software developed by Harvard's Cultural Observatory, it is now possible to chart the changing relative frequency of any English language expression in some 5 million books scanned by Google.[249] A search of "tried to quit smoking" reveals a rapid increase in the use of such phrases (as a proportion of all other phrases) beginning in the late 1960s, with continuing increase into subsequent decades. The expression "cigarettes are addictive" is not common until the 1990s.[250] The

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[246] Sir Charles Ellis, "Meeting in London with Dr. Haselbach," Nov. 15, 1961, Bates 301083862-3865; Addison Yeaman, "Implications of Battelle Hippo I & II and the Griffith Filter," July 17, 1963, Bates 2074459290-9294.

[247] Edwin F. Dakin (Hill and Knowlton), "Forwarding Memorandum: To Members of the Planning Committee," late Dec. 1953, Bates JH000493-0501, p. 2.

[248] Robert Bexon, "R&D/Marketing Conference: New Brand Development – 'Post-Lights'," 1980, CTRL No. gbm42a99, p. 4.

[249] Jean-Baptiste Michel et al., "Quantitative Analysis of Culture Using Millions of Digitized Books," *Science*, 331 (2011): 176-82. And for background on Google Labs' N-gram viewer: http://www.culturomics.org/Resources/A-users-guide-to-culturomics

[250] N-grams can be freely created at: http://ngrams.googlelabs.com/ For "quit smoking," see http://ngrams.googlelabs.com/chart?content=quit%20smoking&corpus=5&smoothing=3&year_s

frequency of such expressions grows dramatically in the 1970s, '80s, and '90s (see Appendix II), which means it would be wrong to imagine some kind of peak or maximalist position ("common knowledge") being reached already by the 1960s.

Surveys of popular opinion also make this clear. A 1982 Roper poll for the Tobacco Institute found that only a quarter of the American public regarded smoking as "an addiction," while more than half of those polled regarded it as just "a habit."[251] This is hardly surprising, given the prevailing public health conceptions at this time. The U.S. Public Health Service was not emphatic in characterizing smoking as an "addiction" until the 1988 Surgeon General's report, which prompted Surgeon General C. Everett Koop to identify the nicotine in cigarettes as being "as addictive as heroin or cocaine." From a history of science point of view this represents a profound shift in thinking: the 1964 Surgeon General's report had certified smoking as *causing* disease; the 1988 report now certified nicotine addiction as a *being* a disease.

Flaherty uses the term "deluge" on page 14 of his report, referring to a "deluge of anti-smoking material" in the Canadian press in the early 1960s. Flaherty here follows a tobacco industry defense strategy crafted in the 1980s, involving the collection of "Deluge materials": the plan was to hire historians who could flood legal chambers with examples of articles in newspapers, magazines, and other media, making it seem as if anyone but a hermit or an ostrich would have been "aware" of smoking's hazards.[252] Flaherty's report fits neatly into this mold, judging from his assertion that a resident of Quebec in the late 1960s "would have to have been living in isolation" not to have realized that cigarettes were a serious health risk (p. 17).

Apart from the empirical difficulties already highlighted, there is also this simple logical difficulty: why, if these harms were already so well known, did reports keep appearing in the popular press? The press didn't keep reporting that matches cause fires or that alcohol can make you drunk. There must have been something pushing back against health reports to keep this topic in the news, forces maintaining this purported "controversy." A similar point can be made about warnings: Why were warnings on packs of cigarettes even necessary, and periodically strengthened, if people already knew? Tobacco manufacturers actually used similar arguments to try to keep warnings off packs, which did not

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tart=1850&year_end=2008. For "cigarettes are addictive" see http://ngrams.googlelabs.com/graph?content=cigarettes+are+addictive&year_start=1850&year_end=2008&corpus=0&smoothing=3.

[251] Roper Organization, "A Study of Public Attitudes Toward Cigarette Smoking," July 1982, Bates 1002665283-5749, p. 31.

[252] "STIC Project/Witness Inventory," Sept. 26, 1987, Bates 682718560-8599; "Manual for Historic Awareness Coding Project," April 26, 1986, Bates 515873086-3207.

appear on cigarette packs in Canada until 1972. "Nearly universal" knowledge is also not consistent with the fact that the total number of cigarettes smoked in Canada does not start to decline until the 1980s. If quitting is largely due to fear of death and injury from smoking, as the industry's own internal documents reveal, why did it take so long for Canadians to start quitting? And why did doctors start quitting so much earlier?

On this matter of doctors, we should keep in mind how late it was that physicians smoked. In the U.S. in the late 1960s, only 35 percent of doctors had *never* smoked, and nearly one in three (29 percent) was still smoking. Half of these had tried (unsuccessfully) to quit. In Canada, too, the situation was not so different. The *Canadian Medical Association Journal* in 1968 reported that over 35 percent of Canadian physicians were current cigarette smokers, with two thirds of these smoking over a pack a day.[253] Does it really make sense to say that knowledge of cigarette harms was "nearly universal," "almost inescapable," if 35 percent of all doctors were still smoking?

Flaherty states that by end of 1960s, one would have to have been "living in isolation" not to be "aware" of a tobacco-cancer link (p. 17). If true, this would seem to imply that cigarette manufacturers were "living in isolation," as none was willing to publicly admit this fact—nor for decades even thereafter. Perhaps Flaherty is implying that the executives of Imperial Tobacco, JTI-Macdonald, and Rothmans, Benson & Hedges were not being entirely honest when they issued their denials?

Flaherty does not tell us how to reconcile such inconsistencies, and his report contains other significant omissions. He mentions the 1969 hearings before the Standing Committee and some conclusions from the LaMarsh report, but he conspicuously fails to mention that *not one* of the twenty-odd witnesses called by the industry to testify before the Committee admitted that cigarettes could cause disease. Were these people "living in isolation?" How had they managed to escape? Were ordinary Quebecers so much better informed than the industry's own experts?

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The fundamental task of the historian is to recall (or reconstruct) a lost world, while avoiding the temptation of "presentism": reading our present values and perspectives into the distant past. It is tempting to find our present disgust for tobacco in times gone by, when the reality is that smoking until quite recently was a part of ordinary polite life. As recently as the 1970s, etiquette guides (eg., Emily Post) advised serving cigarettes after dinner, and grade-school kids were making

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[253] A. J. Phillips and R. M. Taylor, "Smoking Habits of Physicians in Canada," *CMAJ*, 93 (1968): 955-58.

ashtrays in school. We have to recover this history, and we cannot do so by assuming that past times were like our own. That's just bad history.

I would not even classify the common knowledge/ostrich-hermit argument as historical scholarship, however; it is rather more like a kind of clerical performance. Examples of "messages" in the popular media are gathered up and strung together, with the inference that the sheer volume of such an assemblage can be taken as evidence such messages were broadly absorbed by the smoking public.

I have not done an exhaustive survey of Quebecois newspapers and magazines, but I would be astonished if the level of understanding of tobacco hazards was significantly higher here than in the contemporaneous United States. It is worth noting that most of the articles in Quebec media cited by Prof. Flaherty are reporting on scientific work done either in the United States or Great Britain, where I suspect popular reporting was even more intense—and very often earlier—than in Quebec. This would be consistent with the fact that doctors quit smoking somewhat earlier in the U.S. than in Canada.

Flaherty at one point makes the claim that "the cancer scares"[254] resulted in a situation where "common knowledge of the health risks of smoking preceded more definitive scientific proof." The only sense I can salvage from this is the truism that *some* ordinary people must have realized smoking was harmful prior to this being scientifically proven. It is hardly fair, though, to say this indicates "common knowledge," using Flaherty's sense of knowledge that is "nearly universal." Polls from this early period (1950s) show only a minority of people believing that smoking could cause cancer; and a sizable fraction even of doctors remained unconvinced. As late as 1959, according to a poll conducted for Hill & Knowlton and the TIRC in the United States, only 14 percent of American physicians were convinced of the reality of a cigarette-lung cancer link.[255] Doctors as a group were earlier than non-doctors to appreciate this link, and we can hardly expect this to be otherwise in Canada.

Flaherty also does not seem to realize where most of these "popular" reports in Canadian media were coming from. If the press was reporting on evidence of a cancer hazard, this is because they were (most often) reporting on medical studies in the published medical literature or papers delivered at scientific conferences. So while it is certainly not impossible for popular knowledge to precede scientific knowledge, this is not the sequence of events in this particular instance. This

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[254] Prof. Flaherty often refers to publicity of health harms as "scares"—a tobacco industry term used to denigrate the evidence underlying scientific reports of a particular hazard.

[255] Medimetric Institute (for Hill and Knowlton for the TIRC), "Doctors and Smoking (IV): Their Smoking Habits, Their Advice to Patients on Smoking, and their Views on the Correlation between Cigarette Smoking and Lung Cancer," Oct. 1959, Bates 2072420444-0454.

distortion of chronology is a long-standing tactic in tobacco litigation; it is the so-called "chicken noodle soup" or "red wine" defense: ordinary people have long known that chicken soup (or red wine, etc.) is good for you, but scientists have only recently proved it. We are supposed to believe that the scientists are the laggards, the public the pioneers.[256]

Flaherty does pay some attention to the voices of dissenters, but is curiously silent about the role of tobacco manufacturers in fomenting that dissent.

Questionable also is the evidentiary base for his claims about Franco- vs. Anglophone awareness of tobacco hazards. Flaherty writes that Quebecers were "well informed because they existed at an information crossroad for both the English and French-language worlds." At this particular point in history, however, it is hard to see what kind of advantage this would have conferred, speaking in terms of knowledge of tobacco hazards. It may well be true that francophone Canadians had readier access to English language sources than their counterparts in France, but the fact is that for most of the twentieth century, French accomplishments in the realm of tobacco hazards research lagged behind those of Britain and the U.S. (and Germany and the Netherlands, for that matter). French physicians were among the first to identify pipe tobacco smoking as a cause of mouth cancers (*cancers des fumeurs*) in the 19th century, but the French were slow to pick up the flue-cured (Virginia) cigarette habit, and for that reason, along with impoverishment from the war, were not smoking nearly as many cigarettes as the Americans or the English in the 1930s and 1940s. The French were never as fond of the blonde, colory, flue-cured tobaccos favored in the Americas, preferring instead the air-cured black tobacco blends used in (for example) Gauloise and Gitanes. The net effect from a health history point of view was a dramatically lower French lung cancer rate, and significantly less interest in the tobacco-cancer link as a scientific problem. Fewer cigarettes were consumed, and these were less often inhaled. The French were understandably less concerned to explain the modern rise of lung cancer, since their lung cancer rates were significantly lower than elsewhere in the developed world. It really tells us nothing, then, to say that people in Quebec were living at any kind of "crossroads" when it comes to knowledge of smoking and cancer. If anything, one would expect French influence to have posed something of an obstacle to the acceptance of this kind of information. Indeed, survey data show that French Canadians have been less well informed than their English speaking counterparts: a Health and Welfare Canada

[256] See my "'Everyone Knew But No-one Had Proof'."

survey from 1992 concluded that "Francophones are generally less aware of the health hazards of smoking than Anglophones."[257]

Flaherty is right to recognize the significance of the 1957 "Study Group" review by American health authorities, reported in the *Montreal Gazette*. He is also right to stress the increasing recognition—by scientists—of real causal links between smoking and health during this period (1950s). One striking fact he ignores, however—and there is a large secondary literature on this—is the pressure exerted by tobacco industry advertisers to keep popular magazines and newspapers from reporting on harms caused by smoking. Many women's magazines, for example, have few reports on cigarette hazards during the 1960s, '70s and '80s—compared with articles on threats to health from, say, dietary fat or sun-bathing or stress.[258] However much reporting there was on cigarette harms in other media, the historical record is clear that the cigarette industry exercised a powerful influence over what kinds of stories appeared in many popular magazines. Cigarettes were the leading advertised product in many popular magazines—and there is strong empirical evidence that this led to a tendency to avoid cigarette stories in such magazines.[259] Tobacco industry PR also encouraged "balanced" reporting in the popular media, insofar as reports of tobacco hazards were encouraged to include the tobacco industry point of view. Tobacco industry PR agents made good use of the media's willingness to print or air "controversy" (must every story have two sides?); the industry was also quite adept at exploiting liberal values of openness to ongoing scientific inquiry: much of the denialist project, in fact, involved either calling for "more research" to resolve a purported "open controversy," or focusing on "alternative causes" that might distract from the "cigarette hypothesis." Claims of "proof" or "causality" could thereby be greeted with skepticism, as if closure meant a "closed mind" and "openness" an enlightened liberal spirit.

I would tend to agree with Flaherty that media coverage of tobacco health hazards was broad during the period in question—that, after all, is why per capita

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[257] Health and Welfare Canada, "Perceived Health Hazards of Smoking in Canada: Final Report," Sept. 10, 1992, CTRL No. EF20604. In the 1980s Francophones were *more likely* than Anglophones to recognize a smoking-heart disease link—62 v. 48 percent—but significantly *less likely* to recognize smoking as a cause of emphysema (40 vs. 58 percent). And very few Francophones recognized smoking as a major factor in stroke—only 3 percent; see Creative Research Group (for ITL), "Project Viking – Wave 2 – July-August 1988," Oct. 6, 1988, CTRL No. MRL660, p. 57.

[258] Elizabeth M. Whelan et al. show that many women's magazines were "soft" on cigarettes for fear of losing advertising revenues; see her "Analysis of Coverage of Tobacco Hazards in Women's Magazines," *Journal of Public Health Policy*, 2 (1981): 28-35.

[259] Ibid.; compare also Kenneth E. Warner and Linda M. Goldenhar, "The Cigarette Advertising Broadcast Ban and Magazine Coverage of Smoking and Health," *Journal of Public Health Policy*, 10 (1989): 32-42.

smoking rates began to fall in the 1960s. But surely it is wrong for him to conclude from this that it was "almost impossible" for an adult in Quebec "not to be aware of the issues surrounding the health risks of smoking" (p. 12). What could this possibly mean? Flaherty cites Charles W. Lieb as the author of a paper on the possibility of eliminating poisons from cigarette smoke, but is he aware that Dr. Lieb was part of a tight circle of tobacco industry experts on the payroll of the American Tobacco Company who helped design that company's approach to tobacco and health in the 1930s? Or that Dr. Lieb had a dramatic change of heart in the 1950s, leading him to become one of the industry's most formidable critics? Professor Flaherty says nothing about how much the information environment of the 1960s and even later was shaped by Hill and Knowlton, the PR firm hired by ITL et al. to orchestrate the media response to this new evidence about smoking and lung cancer. He makes no mention of how the industry's many other PR agents and "third party" experts influenced popular understanding, including strength of conviction.

Historians of public knowledge have to look at all the forces creating controversy on a particular matter of public interest; we cannot simply look only at one side. The tobacco industry has long had an "interest" in this question of what we should believe about smoking, and from the 1950s on cigarette makers spent billions of dollars getting their message (and alkaloids) into the minds of ordinary smokers. We cannot do justice to the search for historical truth by looking only at one side.

As a final note, I think it is worth pointing out that even though Prof. Flaherty has apparently been engaged in "historical research about the Canadian public's awareness of the dangers of tobacco use" nearly continuously since March of 1988—a period of over twenty years—he has apparently never published on this topic. I suspect that is because he has been employed for much of this time by the tobacco industry, which has never put a high priority on exposing its experts' opinions to peer review by other scholars.

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Robert John Perrins is a professor in the Department of History and Classics at Acadia University in Nova Scotia, where he is also dean of the Faculty of Arts. His 400-page report considers what the Canadian federal government and public health community knew about tobacco hazards over time, based largely on a detailed chronology of different kinds of scientific documents and public health reports. As with Flaherty, Perrins pays little or no attention to the role of PR and propaganda from the tobacco industry on these matters. This is a bizarre omission—as if one were to write a history of attitudes toward global warming, without considering the denialist rhetoric spread by petrochemical manufacturers and free-market fundamentalists. Perrins consults a large mass of governmental

archives in different parts of the world, but inexplicably fails to consult the tobacco industry's own internal documents, and pays little or no attention to public interventions of the cigarette manufacturers during the period in question. The net result is that while many detailed facts are carefully assembled—his report runs to 400 single-spaced pages—many conspicuous gaps remain in his narrative, and certain crucial mistakes are made.

The fundamental problem with Perrins' analysis is his failure to grasp the fact that the history of the science of tobacco health harms—and the policies based on this science—has been a history of struggle involving powerful conflicting interests. Perrins' is a story of David without the Goliath. Reading his account of the LaMarsh report of 1963, for example, or the Surgeon General's report of 1964, or the FTC's standards for measuring tar and nicotine, or subsequent work on the science of secondhand smoke, one gets *no sense of the resistance put up by the tobacco industry*—or the obstructionist denials and distortions that flooded the press throughout. We shall return to this problem in a moment.

A rather different problem concerns his chronology of consensus. Often in his report he talks about a "consensus" emerging with regard to the hazards of tobacco, but he doesn't always properly distinguish what particular community of knowers he is talking about. In a proper understanding of this history, we must distinguish several different socio-geographic loci for consensus formation. In brief, and restricting ourselves only to the lung cancer question, we can talk about 1) a consensus that emerges in the German *scientific community* ten years prior to a similar consensus in the U.S. and Britain; 2) a consensus in *popular medical opinion*—meaning the views of ordinary physicians—in the years immediately following the 1964 Surgeon General's report; 3) an *administrative consensus* in the U.S. and Canada, expressed in consensus reports from governmental and public health agencies; and 4) a *popular consensus* among ordinary members of the public, which really does not arise until the 1970s or even later—and only if we mean by this a simple majority as expressed in popular opinion polls ("do you believe smoking causes lung cancer").

Perrins does not adequately distinguish these various communities of assent. I would tend to agree with his chronology insofar as he locates a medico-administrative (bureaucratic) consensus following the 1964 Surgeon General's report, but the *scientific* consensus in the U.S. actually occurs about a decade earlier (for the U.S. and Britain), and a *popular or journalistic* consensus emerges quite a bit later than he describes, though the timing also depends very much on which particular malady is in question.

Perrins' analysis of the nature and sources of "dissent" is weak. Of course it is true there were laggards: he mentions R. A. Fisher and Joseph Berkson, both of whom denied the cancer link into the1960s. What he seems not to realize, though,

is how few well-informed dissenters there were—restricting our scope to scholars with expert knowledge in the relevant disciplines—after 1960 who were not in the pay of the tobacco industry. Dozens of (scientific) dissenters can be found in the 1960s, '70s, and '80s and even beyond, most of whom were in the pay of the tobacco industry. (Recall Robert M. Gibbs' reference to "flat earth" geology.) Perrins lists many such dissenters, but never once mentions that many of these were on the payroll of Big Tobacco—including several of the medical historians he cites.[260]

On page 9 of his report, for example, Perrins says that "Any meaningful dissent had therefore dissipated in the period between 1964 and 1969"—but here he seems to be considering only "honest" intellectuals not working for the tobacco industry's denialist cause. What is true is that (honest) *scientific* dissent had disappeared by this time, indeed it had disappeared even earlier. It is certainly not true, however, that all dissent had disappeared by this time; how else can we explain the twenty-odd expert dissenters marshaled by the tobacco industry for presentation of testimony in May and June 1969 before the Standing Committee on Health in the Canadian parliament? Perrins ignores entirely the role of scientists hired by the industry to voice their "dissent"—a pattern that continued for decades after all honest dissent had vanished.

Most of Perrins' chronology is unobjectionable, though the text is not without certain errors and misinterpretations. On page 11, for example, he states that the Canadian government in 1967 was "aware of the arguments that smokers may 'compensate' when switching brands." This statement could be easily misinterpreted. It is true that knowledge of the possibility of compensation dates from this period or even earlier; I have found such expressions of concern as long ago as the 1930s, when scholars cautioned that when switching to low nicotine cigarettes, smokers should make sure they do not smoke more. It is important to distinguish recognition of the *possibility* of compensation, however, from evidence of the *reality* of compensation. Experimental evidence of the reality of compensation is first taken seriously in the experimental laboratories of the industry in the 1960s and '70s, and is only later broadly recognized by public health officials. This explains why public health officials continued until quite recently to insist that while quitting was the best choice, smoking a light or low tar cigarette was a second best, a kind of "compromise." The public health community is not well informed about the reality of compensation until the 1990s,

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[260] John Burnham and Jon Harkness, for example; see my "'Everyone Knew But No One Had Proof'"; also my "Should Medical Historians be Working for the Tobacco Industry?" *Lancet*, 383 (April 10, 2004): 1174-75.

by which time the industry had known about this for quite some time—and exploited it for purposes of keeping smokers smoking.

We should also be clear about the sequence of events and responsibility here: governments encouraged the use of low tar cigarettes (or filters), because they—like ordinary smokers—had been fooled by the tobacco industry's low-tar mischief. As late as 1981, a Surgeon General's report suggested that smokers use low-tar rather than high-tar cigarettes—a recommendation that never would have made had the public health community possessed the industry's understanding of compensation. Tobacco manufacturers never disclosed their experiments in this realm to the public; it was only with release of internal documents from the tobacco industry (in the 1990s) that the companies' knowledge (and low-tar duplicity) was disclosed. Public health officials could have avoided 30 years of useless tar and nicotine testing, had they not been taken in by the low-tar scam. Perrins ignores this history.

Instead, Perrins writes as if the stimulus for making low-tar cigarettes came from government authorities, as if cigarette makers were just following orders. Perrins here misrepresent the power relations between the industry and the Canadian government. He also implies that the Delhi Research Station was acting on its own initiative, for example, when the fact is that many Delhi researchers were working under contract with the tobacco companies. In most such collaborations of this sort, the industry held the power, was calling the shots. The Canadian government similarly endorsed low tar cigarettes, because this was the solution offered by the industry, which the government took at its word.

Perrins rightly notes that the Canadian federal government did not change its position on low-tar cigarettes until 2001, which is also about when American authorities stopped recommending any shift to low tars or "lights." Perrins has no good answer for why this would have taken so long, however, if "compensation" was already well understood in the 1960s. The fact is that Canadian health and regulatory authorities by and large did not know that low tars offered no honest measure of protection. Perrins says only that the government adopted "a new position" (p. 12), as if wakening from some kind of intellectual slumber. The reality is that the industry's in-house work on compensation became known as a result of submissions provided through subpoenas—and those revelations played a critical role in the federal government's shift in policy.

Problematic also is Perrins' account of changing views on addiction. He talks about a "standard position" prior to the 1980s, when cigarette use was viewed as a "habit" rather than an "addiction." But there never was a "standard position" or "standard approach" as such. It is certainly true that there was some word slippage, and changing meanings of terms, and some scholars used "habit" or "habituation" or "addiction" interchangeably; that was not uncommon. We cannot

conclude from this, however, that changes in the field of tobacco psychopharmacology from the 1960s through the 1990s were simply changes in definitions of terms. The Surgeon General's certification of nicotine as an addictive drug in 1988 was more than just a change in definitions; if that were indeed the case, we wouldn't have needed a 640-page report. The 1988 Surgeon General's report is more than just a reaffirmation that smoking can be hard to quit. The report presents evidence that nicotine in the specific form delivered by cigarettes is as addictive as heroin or cocaine, and that cigarette use involves fundamental modifications in human psychopharmacology.

Perrins is also wrong when he states, on p. 19 of his report, that "Prior to 1950, the evidence linking smoking to lung cancer and other diseases, while plentiful, was largely anecdotal." This is an especially curious claim for Perrins who, unlike most tobacco industry experts, does acknowledge the extensive German and Spanish language research into precisely this topic, including the pioneering work of Angel H. Roffo of Argentina. Roffo in the 1930s and '40s did important work showing that tobacco tars smeared onto the skins of experimental animals could cause cancer, and was the first ever to identify the known carcinogen, benzpyrene, in cigarette smoke (which he inferred from spectrographic signatures).[261] Roffo today is honored in the name of Argentina's leading cancer institute (the *Instituto de Oncologia Angel H. Roffo* of Buenos Aires), and it is hardly fair to call his work "anecdotal." That is not how it was regarded at the time, not even by cigarette manufacturers. Larson, Silvette and Haag in their 1961 *Tobacco: Experimental and Clinical Studies*, the industry's famous "Green Monster," cite 46 different Roffo articles.[262] Hiram Hanmer, director of research at the American Tobacco Company, in a 1950 memo to his president listed Roffo as "the chief protagonist of the theory that there is a causal relation between smoking and cancer of the respiratory organs," and Claude Teague at R.J. Reynolds shortly thereafter cited nine different published studies by Roffo in his "Survey of Cancer Research," noting also his (Roffo's) isolation of "benzpyrene from a pyrolytic distillate of tobacco" and his observation that the compound was "highly carcinogenic in animal tests."[263]

This was not just "anecdotal" work. Perrins himself cites the path-breaking work by Franz Hermann Müller at Cologne (in 1939) and by Eberhard Schairer

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[261] Robert N. Proctor, "Angel H. Roffo: The Forgotten Father of Experimental Tobacco Carcinogenesis," *Bulletin of the World Health Organization* , 84 (2006): 494-96.

[262] Paul S. Larson, Harvey B. Haag, and H. Silvette, *Tobacco: Experimental and Clinical Studies: A Comprehensive Account of the World Literature* (Baltimore: Williams and Wilkins, 1961).

[263] Hiram R. Hanmer to Paul M. Hahn, "Memorandum on Alleged Causative Relation Between Cigarette Smoke and Bronchiogenic Carcinoma," Sept. 15, 1950, Bates 950218815-8825; Claude E Teague, "Survey of Cancer Research, Feb. 2, 1953, Bates 3990007511-7530.

and Erich Schöniger at Jena's Institute for Tobacco Hazards Research (in 1943)—both of which are carefully-constructed case-controlled studies in tobacco epidemiology. Again, hardly "anecdotal" work, but rather solid, innovative, world-class contributions to the scientific literature. We should also not exaggerate the difficulty involved in obtaining Roffo's publications in the 1930s, '40s and '50s. There is no evidence that tobacco companies found his work difficult to procure; indeed they tracked his work quite closely.

Perrins gets much of his chronology of tobacco epidemiology right, with a couple of significant omissions. He mentions a number of critics of this epidemiology, and rightly includes Wilhelm Hueper, but omits one key qualifier. Hueper was skeptical of the smoking-disease link because he saw it as distracting from occupational and environmental carcinogenesis, which was true to a certain extent. Hueper also did not entirely deny the tobacco-cancer link, but rather simply thought of tobacco as only one of several possible causes.[264] And it is wrong to lump Hueper in with less-principled denialists: Hueper was offered the job that Clarence C. Little took (to head the SAB of the TIRC) but refused, not wanting to compromise his scientific integrity. Hueper was no opportunist. Unlike hundreds of other denialists, Hueper apparently never took money from the tobacco industry. The industry did, though, exploit his skepticism, elevating one of his rather unremarkable talks at a Brazilian conference into a full-scale media event, to buttress the industry's denialist cause. And ever since, the man's honest skepticism has been used by the industry for its broader propaganda purposes.

Perrins on page 25 of his report states that "it would not be until the mid-to-late 1960s that a consensus as to the causal relationship between smoking and lung cancer would be established." This claim cannot be assessed as stated, since it is not clear whether he is talking about scientists, or the ordinary community of physicians, or the general population of smokers. Each of these groups, as already noted, has a very different chronology of consensus. Perrins here also states that "clear difficulties still existed with regard to confirming the hypothesis" of a cigarette-lung cancer link into the mid 1960s. This is not really true. The evidence of a lung cancer link is overwhelming by the mid 1950s, as medical historians who have published on this topic have long realized.[265] Obviously there is always more to be learned in science—we can always use "more research"—but this truism is disingenuously used by cigarette makers to corrupt both popular understanding of established facts and our memory of those same facts in historical retrospect.

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[264] See Robert N. Proctor, "Wilhelm Hueper: Pioneer of Environmental Carcinogenesis," in *Medizingeschichte und Gesellschaftskritik: Festschrift für Gerhard Baader*, ed. Michael Hubenstorf et al. (Husum: Matthiesen Verlag, 1997), pp. 290-305.

[265] Brandt, *Cigarette Century*, pp. 159-277.

Many other problems could be mentioned in this report. Perrins exaggerates the historical significance of Koch's postulates, for example, and fails to appreciate the significance, the solidity, and the quasi-experimental nature of Richard Doll et al.'s epidemiology. Perrins doesn't seem to appreciate the historical significance of Wynder, Graham and Croninger's 1953 mouse-painting experiments (p. 28); he mentions a number of criticisms of this study but fails to note its explosive impact: tobacco stocks plunged with the announcement of these experiments, which actually prompted the launch of the formal conspiracy at the Plaza Hotel in December of 1953. Perrins doesn't mention this response—the Plaza Hotel meetings aren't even mentioned in his report. He also doesn't talk about how most tobacco company laboratories ended up verifying Wynder's work, and basing many of their subsequent bioassays on his methods (and others, most notably the Ames test of mutagenicity). Perrins also doesn't mention how Wynder by the end of the 1950s had begun collaborating with the tobacco industry—Wynder endorsed the use of filters, for example, and as Philip Morris once summarized the situation, Wynder was not really "anti-tobacco" but rather "pro-improved tobacco"—easing his path to take millions of dollars from the companies to fund his research.[266]

Perrins on page 62 of his report gives an incomplete assessment of Evarts Graham's views on tobacco-cancer causality. It is true that Graham in 1951 wrote that proof of a tobacco-cancer link was "lacking and will remain absent until it becomes possible to produce cancer experimentally from some or all of the products contained in cigarette smoke"; Perrins quotes this passage but ignores Graham's dramatic change of heart only two years later, when he came to the realization—as a result of his work with Wynder and Croninger—that

> there is something in cigarette smoke which can produce cancer. This is no longer merely a possibility. Our experiments have proved it beyond any doubt.[267]

Perrins returns to Graham's experimental work with Wynder on pages 67-68 of his report, but he never cites this key public representation of their work ("beyond any doubt"). The time frame from 1951 to 1953 is actually crucial, a watershed or revolutionary moment in the history of medical science, marking the beginning of the end for honest (informed) doubts about a cancer risk from smoking.

These and other omissions are perhaps the most striking in Professor Perrins' voluminous report. There is no mention of the tobacco industry's role in

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[266] Nicole Fields and Simon Chapman, "Chasing Ernst L. Wynder: 40 Years of Philip Morris's Efforts to Influence a Leading Scientist," *Journal of Epidemiology and Community Health*, 57 (2003): 571-78; A. E. O'Keeffe to R. N. DuPuis, Oct. 4, 1955, Bates 10018131695-3696.

[267] "Beyond Any Doubt," *Time*, Nov. 30, 1953, pp. 60-63.

obstructing the advance of knowledge or passage of protective legislation. There is no analysis (or even mention) of the role of advertising in creating pro-tobacco sentiments. There is no mention of the tobacco industry's hiring of "third party" experts to propagate industry-friendly science. There is no mention of the roles played by Hill & Knowlton, Shook Hardy and Bacon, or Covington and Burling in the conspiracy to obfuscate cigarette hazards. There is no discussion of the Tobacco Institute,[268] or ICOSI, or the ETS Consultancy Project, or the CIAR, or any of the industry's myriad other denialist organs. There is no effort to grapple with the financial and political power of the industry and how this shaped both public and scientific discourse.

This failure to appreciate the power wielded by the industry leads Perrins to misunderstand why leading social and medical institutions were often reluctant to endorse public health protections in the tobacco realm. Perrins notes that the American Medical Association (AMA) in 1964 refused to endorse the recent Surgeon General's report, for example, but he makes no effort to understand why that might have been. The fact is that the tobacco industry had already struck a deal by this time with the AMA, by which the nation's foremost professional medical association would remain silent on tobacco in exchange for the cigarette industry's support in opposing Medicaid and Medicare.[269] Cigarette manufacturers gave over $10 million to the AMA's Education and Research Foundation (ERF, or "Project for Research on Tobacco and Health") as part of this collaboration, which yielded over a dozen years of official silence from America's premier medical association. Perrins seems not to grasp even the outlines of this collusion: on page 52 of his report he cites a long passage from a 1967 AMA press release, which basically endorsed the tobacco industry's "open mind" stance with regard to causality:

> For the past three years, wide ranging research into many questions at this level has been sponsored by the Project for Research on Tobacco and Health of the American Medical Association-Education and Research Foundation. But direct and incontrovertible evidence for a cause and effect relationship between smoking and disease - including cancer, respiratory and cardiovascular disease - is difficult to obtain. The answers are still years away.

Perrins cites this passage without reference to any collusion between Big Tobacco and Big Medicine—he never says where the money for the AMA's ERF came

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[268] Perrins' report contains 150 instances of the word "institute," only two of which are references to the Tobacco Institute—and both of these are confined to bibliographic mentions.

[269] Kluger, *Ashes to Ashes*, pp. 360-62; Brandt, *Cigarette Century*, p. 249.

from, and makes no mention of tobacco industry influence (here as elsewhere). Perrins cannot even get the author of this press release right: he cites it as being authored by "M. H. Secuers," when the man in question was actually Maurice H. Seevers, Chairman of the AMA's ERF and a former tobacco industry consultant—and the principal scholar responsible for convincing the Surgeon General's Advisory Committee to characterize cigarette smoking as a "habit" rather than an "addiction." The real "Seevers" appears nowhere in Perrins' report.[270]

This brings us to a final observation about Perrins' own scholarly background and expert qualifications. While he is certainly a distinguished and reputable historian of Japanese colonial medicine, he has no published record on the topics addressed in his report. His expertise in this realm, such as it is, seems to have come entirely from work on behalf of tobacco manufacturers in litigation. Four hundred items are listed in the 30-page vitae he has attached to his report, and while he clearly has a distinguished reputation writing on topics such as "The Development of Japanese Colonial Medicine in Manchuria, 1905-1945" and "Pearl Harbor Denial," nowhere in his list of publications, service, lectures, or coursework do the words "cancer," "tobacco," "nicotine," or "cigarette" appear even once. The same is true for "heart," "lung," and "addiction"; and we don't even find the words "popular" or "knowledge."[271] We should not imagine that training as a professional historian qualifies one to be an expert in all fields of history; I, for example, would not be qualified to write an expert report on the development of Japanese colonial medicine in Manchuria. Historians typically have specialties, and the work for which Professor Perrins is known and celebrated has nothing to do with tobacco, cigarettes, cancer, or common knowledge. His tobacco work has apparently all been done for purposes of litigation; it has not been subject to peer review, and it is not independent.

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Jacques Lacoursière is a popular historian living in Quebec, where he is best known for hosting the TV series *Épopée en Amérique: Une histoire populaire du*

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[270] The tobacco industry had exerted pressure on the AMA even earlier. In March of 1960, for example, the AMA's powerful Council on Drugs had rejected a proposed plan to formulate "a national policy" on smoking and health. Harvey Haag, a senior member of the Council and long-time American Tobacco consultant, assured the Council that after reviewing "thousands of articles on the subject," he and his colleagues had concluded there was "insufficient evidence to support a statement that smoking causes lung cancer or heart disease." Haag shortly thereafter reported to his American Tobacco handlers that his presence on the Council "probably was the most important factor in preventing any action by the AMA"; see E. S. Harlow to H. R. Hanmer and W. R. Harlan, "American Medical Association's Stand on Cigarette Smoking–Lung Cancer Controversy," March 8, 1960, Bates 950140808; and for background, Bates 950140816-0821.

[271] Perrins' vitae and service record are included on pages 403-31 of his expert report.

Québec. He has an MA degree in history from the University of Ottawa, and taught for a time at the University of Laval. His "Rapport d'expertise sur la connaissance populaire des risques associés à la consommation de Tabac" is similar to the reports of Flaherty and Perrins, insofar as he treats the history of "common knowledge" of tobacco hazards and addiction while paying little or no attention to the role of the tobacco industry in shaping such knowledge. His work for litigation seems to have consisted principally in a reading of several Quebecois daily newspapers, including *La Presse* (1950-1998), *Le Soleil* (1950-1998), *Le Devoir* (1950-1998), the *Montréal-Matin* (1950-1965), *The Gazette* (1950-1983), the *Journal de Montréal* (1964-1998), a series of French-language selections from *Reader's Digest* (1950-1998), and *L'Actualité* (1965-1998). Lacoursière says that while he personally looked at *Montréal-Matin* for the years 1950 to 1965, along with the French version of *Reader's Digest* from 1950 to the present and *L'Actualité* from 1965 into the 1990s, the reading of *La Presse*, *Le Soleil*, *Le Devoir*, *The Gazette* and the *Journal de Montréal* was actually done by four graduate students in the doctoral program in history at the Université du Québec à Montréal, working under the guidance of professor José E. Igartua. The total body of materials surveyed appears to have encompassed some 20,000 published articles—and few unpublished materials or published advertisements. Paul Aubin at Laval University in Quebec City was subcontracted to review the history of tobacco instruction in children's schoolbooks.

One preliminary observation about Lacoursière's report—and this applies also to Perrins' and to Flaherty's—is that movements and positions once regarded as thorns in the side of the tobacco industry are now being used to justify the industry's conduct in retrospect. Historians working for the industry typically inflate the power and influence of public health movements—tobacco's former foes—to create the impression that *no one could have escaped* the barrage of health messages flooding the public sphere. The implication is clear, even if rarely made explicit: smokers have only themselves to blame for whatever maladies they may contract from their cigarettes. People knew what they were getting into when they started smoking at age 13 or 14; they were properly forewarned.

Missing from all such accounts is the influence of the tobacco industry, their denials, their advertising, their access to the halls of power, their untiring work with lobbyists and PR agents, journalists and academics—all calculated to get the tobacco message out and policy skewed in its favor. Lacoursière, like Perrins and Flaherty, ignores this industry's influence on attitudes toward tobacco, the gorilla in the room. The net result, as Professor Louis Kyriakoudes concludes in his scholarly review of historical testimony for the defense in American tobacco

litigation, is "a skewed history of the cigarette in which the tobacco industry all but ceases to exist."[272]

As with Perrins and Flaherty, it is not clear that Lacoursière has ever actually published on the history of tobacco, addiction, or cigarettes, or lung cancer or any other health effect from smoking, or popular knowledge thereof in any kind of media. He says he was hired by JTI-Macdonald and Rothmans, Benson & Hedges, to explore the history of popular knowledge of both the addictive nature of tobacco and the "potential risks" (*risques potentiels*) associated with smoking, concentrating on Quebec in the period from 1950 to 1998.[273] Lacoursière takes his massive compilation of articles from the popular press and then recites in detail, more or less in chronological order, the many reports of harms in the Canadian press, sprinkled with the occasional industry denial. From this he derives two simple and interlocked conclusions: Canadians have known about—or at least been "aware of"—the hazards of tobacco and the dangers of addiction since the 1950s. Here are his two principal conclusions:

Concerning addiction:

> *La conclusion la plus générale que je puisse tirer de mon analyse, c'est qu'il aurait fallu ne pas lire un journal ou une revue, ne pas écouter la radio et la télévision, ne pas aller au cinéma pour ne pas se rendre compte que fumer régulièrement peut créer une dépendance.*
>
> (The most general conclusion I can draw from my analysis is that one would have to have not read a newspaper or a magazine, not to have listened to radio or television, and not have gone to the movies not to have been aware that regular smoking could create a dependency.)[274]

And concerning health more generally:

> *À partir des années 1950, il est à peu près impossible de ne pas connaître que le fait de fumer constitue un danger pour la santé. . .*

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[272] Louis Kyriakoudes, "Historians' Testimony on 'Common Knowledge' of the Risks of Tobacco Use: A Review and Analysis of Experts Testifying on Behalf of Cigarette Manufacturers in Civil Litigation," *Tobacco Control*, 15 (2006): iv107-16.

[273] Jacques Lacoursière, "Rapport d'expertise sur la connaissance populaire des risques associés à la consommation de Tabac," *Conseil Québécois sur le Tabac et la Santé vs. JTI-Macdonald Corp. et al*., Dec. 23, 2010.

[274] Ibid., p. 12.

> *La conclusion la plus générale que je puisse tirer de mon analyse, ciest qu'il aurait fallu ne pas lire un journal ou une revue, ne pas écouter la radio et la télévision, ne pas aller au cinéma pour ne pas se rendre compte du danger pour la santé que présentait le fait de fumer régulièrement . . .*
>
> (From the 1950s on, it has been virtually impossible not to know that smoking constitutes a danger for health. . .
>
> The most general conclusion I can draw from my analysis is that one would have to have not read a newspaper or a magazine, not to have listened to radio or television, and not have gone to the movies not to have been aware of the danger posed by the regular smoking . . .)[275]

This is the familiar ostrich-hermit defense: you would have to have been an ostrich or a hermit not to have known that smoking was bad for you.

It should not be necessary to criticize Lacoursière's report in detail; most of the same criticisms apply here as for Perrins and Flaherty. There are some slight differences in these various reports—Lacoursière places the health hazard consensus even earlier than the others, for example—but the similarities are more important than the differences. None of these three authors has apparently made any effort to consult the tobacco industry's internal archives, even those available online at http://legacy.library.ucsf.edu or http://tobaccodocuments.org for over a decade. There is no consideration of the power of advertising, nor apparently any effort even to consult advertisements. Lacoursière does include certain tobacco industry's denials in his account, insofar as these show up in the popular literature he has consulted, but there is no effort to look at the industry's impact on popular attitudes, and no effort to examine how manipulations in the design and marketing of cigarettes—such as filters or low tars, for example—may have influenced smoking behavior and popular attitudes toward cigarettes or the maladies they cause.

Instead, we have a kind of argumentation by accumulation: so many published examples of warnings were "available" that virtually everyone must have known about the risks—certainly anyone who ever watched TV or went to the movies. As with Perrins and Flaherty, Lacoursière's chronology is more like a clerical performance than a serious historical assessment and analysis.

Some further comments:

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[275] Ibid., pp. 12-13.

- Lacoursière talks about how school textbooks exerted "a profound influence" on school kids aged 11-13; but if this were so, why would such a high proportion end up smoking? Why did the proportion of kids smoking in this age group increase so dramatically from the 1950s into the 1970s?
- It is certainly true, as Lacoursière mentions, that children were often advised not to smoke; smoking was commonly preached to be "bad for kids" or an "adult habit" prior even to the Second World War. Smoking was imagined to stunt one's growth or to compromise one's masculinity or femininity: one commonly finds such views in the nineteenth century, along with complaints about cigarette use being a waste of money or immoral behavior. Lacoursière seems not to appreciate how this could have become part of the appeal of smoking: tobacco was forbidden fruit, an "adult habit," a visible mark of maturity. Cigarette manufacturers knew about this and eventually capitalized on it. Philip Morris in its *Archetype Project* from 1990-91 explored this notion that new recruits could be attracted by identifying smoking as "for adults only"; Gilbert Clotaire Rapaille, a French marketing consultant with expertise in adolescent psychology, developed a series of recommendations for the company that included: "Make it difficult for minors to obtain cigarettes" and "Stress that smoking is dangerous [and] for people who like to take risks, who are not afraid of taboos, who take life as an adventure to prove themselves."[276]
- On page 10 of his report, Lacoursière comments on how a sanction against tobacco use from 1676 had "nothing to do with health," but rather only with preventing fires ("On voulait tout simplement diminuer les risques d'incendie"). But is fire not also a health hazard? Lacoursière trivializes risks from cigarette fires, which actually claimed the lives of thousands of Canadians in the period here in question. Health Canada has estimated that from 1995 to 1999 alone, cigarettes caused over 14,000 fires and 356 fire deaths in Canada, along with 1,615 injuries and $200 million in property damage.[277] Smoking does cause far more death and suffering via chronic disease, but we should not ignore this more immediate source of harm.
- On pp. 11-12, Lacoursière states that by 1950 "the majority of specialists, with a few rare exceptions, did not question the dependence

[276] See "Archetype Project Summary," Aug. 1991, Bates 2075842890-2904.
[277] Health Canada, "Program Estimates the Damage of Cigarette Fires," http://www.hc-sc.gc.ca/sr-sr/activ/protection/fire-feu-eng.php, accessed Aug. 1, 2011.

that could be created by the regular consumption of cigarettes." Lacoursière seems not to include tobacco manufacturers as "specialists," however, since they of course refused to admit for several decades after this time that cigarette smoking produced a pharmacologic dependency. It would also be wrong to imagine that concepts of addiction remained static from the 1950s into the 1990s. Conceptions of the nature and severity of nicotine dependence undergo profound changes during this period; there is little notion in the 1950s that tobacco use was anything like the use of heroin or cocaine, for example—which is what we find by the 1990s. Lacoursière does not pay sufficient attention to this crucial shift in thinking—or to public vs. private admission by the industry.

- On page 61, Lacoursière reports an assertion by Carl Seltzer that "cigarette smoking after age of 65 will not increase the risk of heart attack." Lacoursière presents Seltzer as "a researcher at Harvard School of Public Health," as noted in the newspaper he has read, but he fails to mention that the man was not a regular Harvard faculty member but rather a life-long tobacco apologist bankrolled by the industry—and a key architect of the industry's so-called "constitutional hypothesis," the idea that it is not smoking per se that causes heart disease, but rather something in the genetic constitution of the smoker that causes them both to smoke and to contract heart disease. Seltzer received over two million dollars from the industry over a forty-year career, during which time he made numerous public appearances on their behalf, including leading roles in tobacco industry propaganda films such as "Smoking and Health: The Need to Know." Lacoursière does not mention that Seltzer was not an independent scholar, and he does not mention how readers of the *Gazette*, in which Seltzer's denialist remarks were reported, would likely have been misled by any such report that failed to notice his financial dependence on the tobacco industry.[278]

* * * * *

To summarize: All three of these reports are disappointing, for the reasons mentioned at the beginning of this report. All three fail to consult the tobacco industry's internal documents, which reveal a decades-long conspiracy to downplay the hazards of smoking. All three ignore the tobacco industry's denialist campaign, and all three fail to appreciate the multiple means by which cigarette makers reassured smokers, including the marketing of gimmick cigarettes such as king sizes, filters, low tars, lights, menthols, and milds. All three fail to consider

[278] Lacoursière could have found out about Seltzer's questionable reputation simply by checking the Sourcewatch article on him at http://www.sourcewatch.org/index.php?title=Carl_C._Seltzer.

the role of advertising in influencing attitudes toward tobacco hazards—including the creation of a sense of the "ordinariness" of the cigarette habit in Canadian popular culture. All three either ignore or downplay the fact that popular attitudes toward smoking change dramatically over time, with significant changes taking place from the 1950s into the 1990s. All three either fail to consult, or pay insufficient attention to, the secondary historical literature detailing the tobacco industry's efforts to manipulate public opinion. All three fail to look carefully at the industry's marketing and polling research, which shows that the kinds of people most likely to smoke were also the least likely to understand the risks of smoking. All three ignore the fact the fact large segments of the Canadian public hold fast to the myths that only immoderate smoking is dangerous or that certain brands are safer than others. All three ignore the industry's deliberate marketing to kids and deceptive manipulations of science. And all three ignore the massive political power of the industry throughout this period, encompassing power to influence peer-reviewed scientific literature, congressional and parliamentary deliberations, positions taken by professional medical associations, the drafting of bills and legislation, the content of popular media, and popular attitudes toward smoking.

Signed Aug. 19, 2011

Robert N. Proctor

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Appendix I: Notable Quotes from the Cigarette Archives

we have not concealed, we do not conceal and we will never conceal. What do I mean by this? We have no internal research which proves that smoking causes lung cancer or other diseases or, indeed, that smoking is addictive.

Martin Broughton, CEO, British American Tobacco, 1996

We have never targeted youth. I must put that out again. I will leave the documents that prove it. We have never targeted underage smokers and I want that on record

Robert Bexon, President, Imperial Tobacco Ltd., 2000

I am saying absolutely and unqualifiedly for the whole world that we do not engage in nicotine manipulation

Purdy Crawford, former President and CEO, Imperial Tobacco, 1998

At the same time, we will also endeavor to obtain for Player's Filter a greater share of the first time smokers.

Imperial Tobacco Ltd., "Player's Filter Advertising Plan," 1971

The ability to reassure smokers, to keep them in the franchise for as long as possible, is the focal point here.

Project Viking, ITL, 1986

The American lawyer's group was getting control and were pushing what R&D types would consider to be an irresponsible attitude totally lacking in credibility. R&D people call ICOSI "The Flat Earth" society.

Robert M. Gibb (ITL) to Norman Dann (IMASCO), 1977

I have enclosed a copy of a CTMC brochure on the medical evidence around passive smoking which I think you will find very interesting. The disinformationist in me suggests that this is another potentially powerful weapon in our arsenal.

Robert Bexon (ITL) to Richard W. Crosby, April 2, 1985

Is having smaller babies a bad thing? I think there was a study done in Winnipeg by a doctor which demonstrated that smaller babies was probably a good thing; the baby has a better chance to live.

Pare Paré, President, Imperial Tobacco Ltd., 1970

If our product was not addictive we would not sell a cigarette next week.

Robert L. Bexon to ITL President Wilmat Tennyson, Oct. 17, 1984

The increasing frequency of pulmonary cancer is a statistical fact, the cause of which is not wholly clarified, but the most important factor would appear to be the prolonged excessive use of cigarettes. The evidence to support this thesis is sufficiently definite that cigarette manufacturers now have a moral obligation to attempt to prove or disprove its validity.

Norman C. Delarue, "Bronchogenic Carcinoma–the Present Challenge," 1954

Our relationships with one another, our safety, and our work are all affected by the personal conduct of each one of us, so we need to keep a few simple rules in mind. For safety's sake, adhere to the non smoking signs posted in specific sections of the premises.

Employee Handbook issued by the Personnel Department, Rothmans, March 1, 1974

in attempting to develop a "safe" cigarette you are, by implication, in danger of being interpreted as accepting that the current product is 'unsafe' and that is not a position that I think we should take.

Patrick Sheehy, Chairman, BAT Industries, writing to Purdy Crawford, Esq., of IMASCO, 1987

who really is the tobacco industry? . . . the burden of guilt must be shifted to government

Jean-Louis Mercier and Wilmat Tennyson, Rothmans of Pall Mall Canada, trying to claim that governments are more responsible for smoking mortality than cigarette manufacturers, 1987

Smoking is a serious health hazard; it is an accepted fact and there is no longer any possibility of refutation. Governments are convinced, smokers concede, non-smokers are up in arms, shareholders and employees are bewildered.

Jean-Louis Mercier and Wilmat Tennyson,
Rothmans of Pall Mall Canada, 1987

The Journal of the Canadian Medical Association says failure to place tobacco under government food and drug regulations has probably cost the lives of millions

The Gazette, May 1,, 1962

The story of the health hazard created by cigarette smoking represents an unrivalled tale of illness, disability and death.

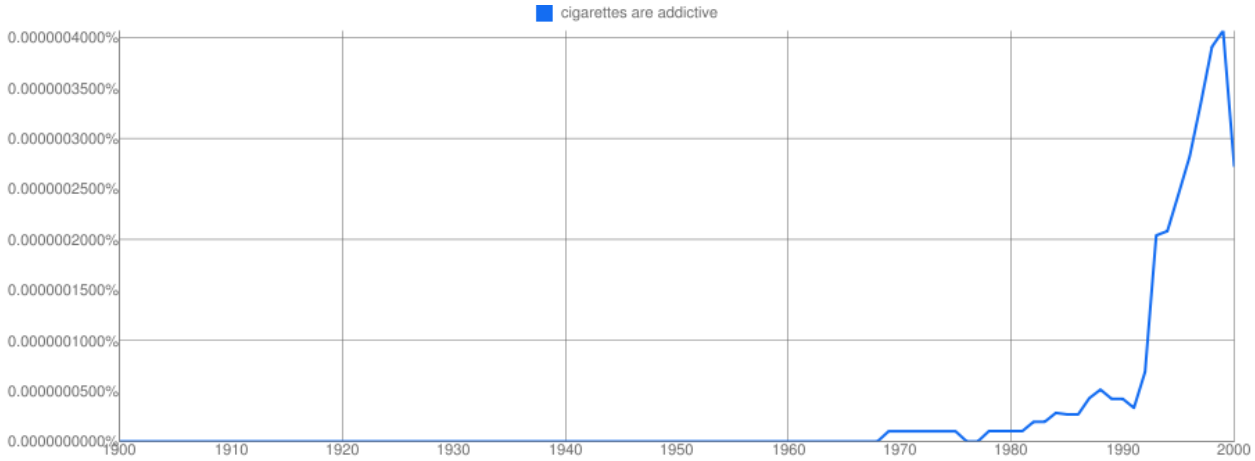
Canadian Medical Association,
Statement to Standing Committee on
Health, House of Commons, Dec. 9,
1969, CTRL No. RL38284

Appendix II: Ngrams for Certain Cigarette Expressions in English

NB: Ngrams measure the relative frequency of use over time of a particular expression in the five million books scanned by Google.

(a) The expression "tried to quit smoking" was not common in the English language prior to the 1970s:

(b) The expression "cigarettes are addictive" was not common prior to the 1990s:

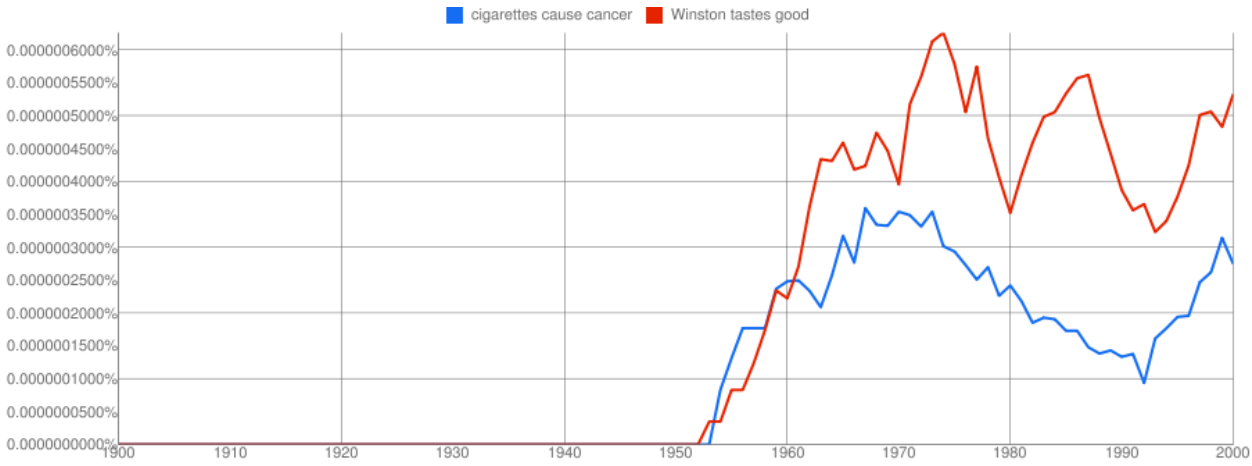


Sources:

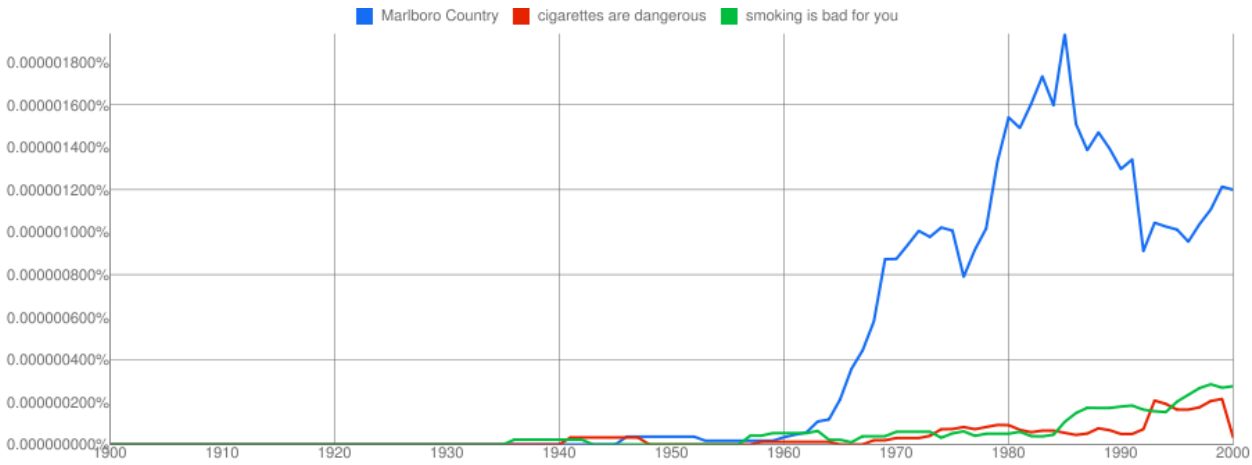
(a)http://ngrams.googlelabs.com/graph?content=tried+to+quit+smoking&year_start=1850&year_end=2000&corpus=5&smoothing=3

(b)http://ngrams.googlelabs.com/graph?content=cigarettes+are+addictive&year_start=1900&year_end=2000&corpus=5&smoothing=3

(c) From 1960 to 1990, the Reynolds slogan "Winston tastes good" was more common in English than "cigarettes cause cancer":



(d) From the mid 1960s on, the expression "Marlboro Country" was far more common than either "smoking is bad for you" or "cigarettes are dangerous":



Sources:

(c)http://ngrams.googlelabs.com/chart?content=cigarettes%20cause%20cancer%2CWinston%20tastes%20good&corpus=5&smoothing=3&year_start=1900&year_end=2000

(d)http://ngrams.googlelabs.com/graph?content=Marlboro+Country%2Ccigarettes+are+dangerous%2Csmoking+is+bad+for+you&year_start=1900&year_end=2000&corpus=5&smoothing=3